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Three essays examining the influence of goal progress on subsequent goal pursuit

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THREE ESSAYS EXAMINING THE INFLUENCE OF GOAL PROGRESS ON SUBSEQUENT GOAL PURSUIT

by

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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This thesis is dedicated to my parents, Jeonghan Park and Chaneum Choi, and my brother, Jaebeom Park, who always support me and continue to give me their unconditional love. Also, this thesis is dedicated to my husband, Keongtae Kim, who has been always there for me during the pursuit of my doctoral studies.

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ABSTRACT

This dissertation comprises three essays that investigate how goal progress influences information processing and subsequent goal pursuit. Essay 1 demonstrates how perceived goal progress influences construal level. I propose that people perceiving low progress will pay more attention to specific means or subacts, which are required to effectively achieve their goals (a lower level of construal), whereas people perceiving high progress will consider the general meaning or value of their goal (a higher level of construal). Based on this relationship between goal progress and construal level, I further predict that fit between goal progress and goal construal (i.e., abstract vs. concrete goal construal) will enhance self-regulation as a result of increasing engagement. Across various domains of self-regulation, I show that fit between goal progress and goal construal increases engagement, which in turn influences subsequent self-regulation.

Extending the motivational influence of fit between goal progress and construal level, essay 2 shows how to effectively persuade people to pursue their goals depending on goal progress. Based on the relationship between goal progress and construal level in essay 1, I propose that fit between goal progress and the construal level of message framing leads to greater persuasion than would nonfit. Three studies reveal that as people perceive greater progress, messages framed in an abstract, high construal level are perceived to be more persuasive than messages framed in a concrete, low construal level.

Finally, essay 3 demonstrates how goal progress affects subsequent goal pursuit, specifically perceptions of and preferences for means that serve a single (i.e., unifinal means) or multiple goals (i.e., multifinal means). Based on cognitive theories of goals and motivation, I show that greater goal progress leads people to structure goals more

inclusively than lesser goal progress. The inclusive structures further increase perceived instrumentality and preferences for multifinal means versus unifinal means. Across three studies, I demonstrate that greater goal progress increases perceived instrumentality of multifinal means relative to unifinal means. I further show that the inclusive representations of goals and means underlie the impact of greater goal progress on the perceived instrumentality of and preferences for multifinal means.

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CHAPTER I

INTRODUCTION

People often fail to achieve their goals, and such failure can have a substantial impact on them as well as on society. For example, a recent analysis by the Wall Street Journal found that most people with 401(k) plans have insufficient savings to maintain their standard of living in retirement (Browning 2011). Many of these people will need to work longer than expected and to rely on Social Security and Medicare at a time when the future of these government programs has become uncertain (Browning 2011). People also have difficulty achieving their health goals. More than two-thirds of adults in the United States are overweight or obese (National Institutes of Health 2012), and the majority are not satisfied with their progress toward losing or maintaining their weight (International Food Information Council Foundation 2011). Personal health consequences of being overweight include increased risk of heart disease, diabetes, and cancer (National Institutes of Health 2012). Societal consequences of obesity include $147 billion a year in increased health care costs in the United States alone, representing almost 10% of all medical spending (Finkelstein et al. 2009).

Given the importance of these problems, essays 1 and 2 examine the influence of goal progress on information processing and suggest how to best motivate and persuade people depending on goal progress. Based on the above understanding, essay 3 further investigates the effect of goal progress on the cognitive representations of goals, which in turn influences evaluations of means.

Goals are defined as “internal representations of desired states” (Austin and Vancouver 1996, 338) and often represented in terms of movement or progress toward

desired states (Fishbach and Dhar 2005). A substantial amount of research on motivation and self-regulation has investigated how people's progress toward goals influences their engagement in or disengagement from the goals (Atkinson, 1957; Carver and Scheier 1982, 1990; Fishbach and Dhar 2005; Lord and Levy 1994; Louro, Pieters, and Zeelenberg 2007; Schmidt, Dolis, and Tolli 2009).

Interestingly, this stream of research has presented seemingly inconsistent conclusions regarding the influence of goal progress on motivation and/or subsequent self-regulation. Although control theory suggests that a lack of progress increases motivation (Carver and Scheier 1982, 1990; Lord and Levy 1994), other research indicates that both high and low progress decrease motivation (Louro et al. 2007). Specifically, the expectancy value theories of motivation postulate a curvilinear relationship between goal expectancy and motivation, with motivation being highest at moderate levels of goal expectancy and at lowest at low and high levels of goal expectancy respectively (Atkinson 1957; Louro et al. 2007). Furthermore, Schmidt et al. (2009) posit that people tend to disengage from a focal goal when facing adversity in the course of goal pursuit because lack of progress indicates that continued investments in time and effort are unlikely to pay off in the end. These different conclusions raise a question about how high (low) goal progress can either increase or decrease motivation.

Essay 1 addresses this question by examining the impact of perceived goal progress on construal level, the level at which people mentally represent an action (Trope, Liberman, and Wakslak 2007). Action identification theory suggests that the representation or construal of an action is associated with performance level and that low performance or increased difficulty of enactment leads to lower levels of representation

(mental construal) (Vallacher and Wegner 1987). Following this notion, essay 1 proposes that people perceiving low progress will pay more attention to specific means or subacts required to effectively achieve their goals (a lower level of construal), whereas people perceiving high progress will consider the general meaning or value of their goal (a higher level of construal). The regulatory engagement theory (Higgins 2006; Higgins et al. 2008) postulates that pursuing one's goal in a proper way intensifies the force of attraction toward the goal (i.e., engagement). As proposed earlier, if goal progress leads to different mental representations of actions or goals, then there will be more or less appropriate manners people consider in pursuing their goals. Accordingly, this essay further proposes that fit between goal progress and goal construal (i.e., abstract vs. concrete goal construal) is more likely to enhance self-regulation than nonfit as a result of increasing engagement.

More specifically, studies 1 - 3 show that perceived goal progress affects construal level across various domains of self-regulation. Given this relationship between goal progress and construal level, studies 3 - 4 show how fit between goal progress and goal construal affect motivation. Study 4 further demonstrates that enhanced engagement underlies the effect of fit on self-regulation.

Essay 2 extends these findings to the context of persuasion. As mentioned earlier, because goal failures can have a substantial impact on individuals as well as on society, both public policy makers and private agents have made efforts to persuade individuals to pursue their goals (Wiener and Doescher 2008). However, public policy makers and private agents frequently use different messages to promote similar ideas. For instance, the American Heart Association encourages healthful eating habits by providing a

message framed in an abstract construal (i.e., “A health[ful] diet and lifestyle are your best weapons in the fight against heart disease,” see appendix B) to promote healthful behaviors. Conversely, the British Nutrition Foundation promotes healthful behaviors by providing a message framed in a concrete construal (i.e., “A healthy diet is likely to include a large number or variety of foods, from each of the food groups, as this allows us to get all the nutrients that we need,” see appendix B).

Based on the relationship between goal progress and construal level in essay 1, essay 2 examines the persuasive influence of fit between goal progress and the construal level of message framing. Recent consumer research has suggested that different levels of thinking or message framing are more persuasive when they fit a person’s mental construal (Labroo and Patrick 2009; Lee, Keller, and Sternthal 2010). Following this line of research, essay 2 proposes and shows that fit between goal progress and the construal level of message framing leads to greater persuasion than nonfit.

Study 1 examines fit effects in an advertising context. More specifically, study 1 shows that participants in the high progress condition evaluate products more favorably when they are described with an abstract construal rather than with a concrete construal whereas those in the low progress condition evaluate products more favorably when they are described at a concrete rather than an abstract construal. Study 2 uses a campaign message and shows that people are likely to evaluate messages represented at levels that fit their mental construal, partly because fit makes it easier to process the messages. Study 3 reveals that fit also affects individuals’ engagement in goal-congruent behavior.

Essay 3 investigates the impact of goal progress on subsequent goal pursuit. Based on cognitive theories of goals and motivation, essay 3 examines how goal progress

affects the mental representations of goals and means, which in turn influence evaluations of means of goal attainment. Goal systems theory (Kruglanski 1996; Kruglanski et al. 2002) describes the motivational and behavioral influence of cognitive representations of interconnected goals and means. According to this theory, goals are organized into associative structures, whereby a goal is interconnected with its corresponding means of attainment and with alternative goals, and the associative structures can take different forms at the same time depending on environmental cues (Kruglanski et al. 2002). Thus, a given means can be connected with either a single goal or multiple in different situations (Kopetz et al. 2012; Kruglanski et al. 2002).

Prior research suggests that the number of goals associated with a given means influences both the perceived value and instrumentality (i.e., effectiveness) of the means (Kopetz et al. 2012). Compared with means connected with a single goal, means linked to multiple goals are perceived as less effective for the attainment of a focal goal but may potentially yield greater value by serving multiple goals simultaneously (Chun et al. 2011; Kopetz et al. 2012). This trade-off makes it unclear when consumers will prefer means that satisfy either a single goal or multiple goals. Furthermore, to date, few studies have examined the conditions that affect this trade-off (for an exception, see Orehek et al. 2012). Essay 3 addresses this gap by providing direct evidence that perceptions of goal progress affect cognitive representations of goals and means.

Control theory (Carver and Scheier 1990) and theories of mental construal (Vallacher and Wegner 1987; Trope and Liberman 2003) imply that goal progress can influence the structures of goals and means, which in turn can affect the instrumentality-value tradeoff. Based on these theories, essay 3 shows that greater goal progress leads

people to structure goals more inclusively than lesser goal progress. Furthermore, the inclusive structures increase perceptions of instrumentality and preferences for multifinal means versus unifinal means. Studies 1 and 3 investigate whether greater goal progress increases perceived instrumentality of means connected with multiple goals relative to means connected with a single goal. Using different tasks, studies 2 and 3 examine whether the inclusive representations of goals and means underlie the impact of greater goal progress on the increased instrumentality of and preferences for multifinal means.

CHAPTER II

ESSAY 1. THE INFLUENCE OF FIT BETWEEN GOAL PROGRESS AND GOAL CONSTRUAL ON SUBSEQUENT SELF-REGULATION

This essay examines the relationship between goal progress and construal level and the influence of fit between goal progress and goal construal on subsequent goal pursuit. Using action identification theory, we hypothesized that greater perceived goal progress leads to higher-level construals and that the fit between goal progress and goal construal is more likely to enhance self-regulation than nonfit as a result of increasing engagement. Our findings indicate that, compared with lesser perceived goal progress, greater goal progress induces higher-level construals (studies 1 - 3). Moreover, the fit between goal progress and thinking style strengthens engagement, so that, as people perceive greater goal progress, abstract thinking (i.e., "why") is more likely to promote goal-consistent behavior than concrete thinking (i.e., "how"; study 4).

2.1 Introduction

A substantial amount of research has investigated and identified conditions that lead people to engage in or disengage from their goals (Fishbach and Dhar 2005; Fishbach, Dhar, and Zhang 2006; Fishbach and Zhang 2008; Louro et al. 2007). Although accumulated evidence from studies based on control theory suggests that lack of progress increases motivation (Carver and Scheier 1982, 1990; Lord and Levy 1994), other research suggests that both high and low goal progress decrease motivation (Atkinson 1957; Louro et al. 2007; Schmidt et al. 2009). In this essay, we show how high (low) goal progress can lead to either increased or decreased motivation by changing the level of mental construal. In the following section, we first review the literature on the

relationship between goal progress and subsequent goal pursuit. Then, drawing from the literature of the construal level theory (Trope et al. 2007) and that of the action identification theory (Vallacher and Wegner 1986, 1987), we formulate our research questions.

2.2 Theoretical Background

2.2.1. The Impact of Goal Progress on Subsequent Self-Regulation

Goals can be defined as "internal representations of desired states" (Austin and Vancouver 1996, 338), and they are often represented in terms of progress or movement toward some abstract, desired state (Fishbach and Dhar 2005). In particular, research based on control theory (Carver and Scheier 1982, 1990) conceptualizes goal progress as a temporary discrepancy between the current state and the reference state and describes how monitoring such a discrepancy influences subsequent self-regulation (Carver and Scheier 1990; Hyland 1988). The main insight from this research is that high goal progress induces a sense of goal attainment and thus signals that less effort is needed (Carver and Scheier 1990). As a result, people are likely to decrease their investments in time and effort when they perceive sufficient goal progress. Also, in the presence of multiple goals, research on the dynamics of self-regulation demonstrates that people are more likely to disengage from a focal goal as they experience greater goal progress on this goal. For example, Fishbach and Dhar (2005) induced different levels of goal progress by asking participants to indicate the amount of effort they had devoted to pursuing their academic goals compared to high versus low standards and found that greater goal progress led people to engage in activities that were inconsistent with a focal

goal. Although work informed by control theory suggests that motivation is highest at low levels of goal progress, other work has come to a different conclusion.

For instance, Schmidt et al. (2009) posit that people tend to disengage from a focal goal when facing adversity in the course of goal pursuit because lack of progress indicates that continued investments in time and effort are unlikely to pay off in the end. This prediction that low progress can negatively affect goal pursuit is also well reflected in the expectancy value theories of motivation (Atkinson 1957; Louro et al. 2007). Specifically, the expectancy value theories of motivation postulate a curvilinear relationship between goal expectancy and motivation, with motivation being highest at moderate levels of goal expectancy and at lowest at low and high levels of goal expectancy respectively (Atkinson 1957; Louro et al. 2007). Considering a positive relationship between goal expectancy and goal progress (Schmidt et al. 2009), this curvilinear relationship implies that both high and low progress undermine motivation.

Combined, these studies led to seemingly inconsistent predictions about how goal progress will affect motivation (Atkinson 1957; Carver and Scheier 1990; Hyland 1988; Louro et al. 2007; Schmidt et al. 2009). This raises important questions about how high (low) goal progress can lead to both increased and decreased motivation as well as how to best motivate people. The present research examines how goal progress influences people's mental construal. Based on this relationship, we identify effective ways to improve self-regulation by changing construal level.

Following control theory, we define goal progress as the pursuit of a goal and hypothesize that perceptions of goal progress can be affected by comparisons with a reference value such as expected movement or social comparison (Fishbach and Dhar

2005). For example, according to this definition, if a person spent more time exercising than a reference value (e.g., personal expectations or social comparisons), he or she would perceive greater goal progress than if he or she spent less time than a reference value. Moreover, the present research focuses on abstract goals that do not have specific end states, as many goals have indefinite targets (e.g., being healthy or saving for retirement). In the next section, we review the relationship between goal progress and construal level and develop our research hypotheses.

2.2.2 The Relationship between Goal Progress and Construal Level

Construal level theory posits that any action can be construed at either concrete or abstract levels depending on psychological distance. Concrete construals are contextualized representations that answer the question of how an action is to be performed, and abstract construals are decontextualized and answer the question of why an action is performed (Dhar and Kim 2007; Trope et al. 2007). In accordance with construal level theory, action identification theory postulates that any action can be organized in a cognitive hierarchy, from low-level identities pertaining to how one acts to high-level identities pertaining to why one acts (Vallacher and Wegner 1987).

Furthermore, action identification theory advocates the existence of an optimal level of identification, whereby identification level shifts in order to perform or maintain actions effectively (Vallacher and Wegner 1987; Houser-Marko and Sheldon 2008). To illustrate, consider different stages of learning golf. People generally want to understand the larger meanings of their actions, such as “enjoying playing goal” (Vallacher and Wegner 1985, 1987; Wegner and Vallacher 1986). However, at the beginning stage, a

person may experience difficulty “driving a golf ball to the green;” thus “enjoying playing golf” is desirable but ineffective in the sense that the player's capacity to carry out such an action may simply be lacking. Thus, the theory posits that when performance of an action is poor, conscious concern shifts to the details of the action, perhaps thinking about “keeping one's eye on the ball” or “getting a good grip on the club” (Wegner and Vallacher 1986, 556). When a person can successfully perform an act, however, low-level identifications tell only pieces of a complete, integrated action, leading to ineffective performance of the complete action. Therefore, the theory asserts that people's attention moves to a higher level of identification once people can successfully perform intended acts. That is, when a person can successfully drive a golf ball, thoughts may shift to “playing golf” or “winning the game,” an ultimate reason for wanting to be able to drive the ball properly. A number of studies have empirically demonstrated that increased difficulty of enactment, complexity (i.e., variety of means or subacts), familiarity, enactment time, and learning time (i.e., the amount of time it takes to learn to do the action well) can move people to lower levels of identification (Vallacher and Wegner 1987).

This accumulated evidence of research grounded in action identification theory indicates that the level of representation of an action is associated with performance level and that low performance may lead to lower levels of representation (mental construal). In the process of goal pursuit, this suggests that people perceiving low progress may pay more attention to specific means or subacts required to effectively achieve their goals (a lower level of construal), whereas people perceiving high progress may consider the

general meaning or value of their goal (a higher level of construal). On this basis, we hypothesize the following:

H1: Greater perceived goal progress leads to higher levels of construal than lesser perceived goal progress.

2.2.3 The Influence of Fit between Goal Progress and Goal Construal

Theories of mental construal generally distinguish between two different aspects associated with goal-directed actions, desirability and feasibility (Liberman and Trope 1998; Bagozzi and Dholakia 1999). Desirability concerns the end state of an action, whereas feasibility pertains to the ease or difficulty of reaching the end state (Liberman and Trope 1998). Also, in the language of action identification theory, desirability refers to the "why" of an action, which reflects the abstract, high-level aspects of an action, whereas feasibility corresponds to the "how" of an action, which mirrors the concrete, low-level aspects of an action (Vallacher and Wegner 1987; Liberman and Trope 1998). In the previous section, we proposed that greater perceived goal progress would draw people's attention to more abstract, higher levels of construal. Based on this relationship, we further propose that matching the primary aspects of goal pursuit (i.e., desirability and feasibility aspects) with people's goal progress will influence engagement in the focal goals and subsequent self-regulation. Support for this so-called fit effect can be found in recent consumer studies (Labroo and Patrick 2009; Lee et al. 2010).

Based on the premise that a positive mood (vs. a negative mood) signals that a situation is benign and thus allows people to psychologically distance themselves from

the situation, Labroo and Patrick (2009) predicted that a positive mood evokes high-level construals. To confirm this relationship between mood and construal level, they examined motivational influences of high- or low-level construal framing under different mood conditions. In the context of academic goals, they found that participants in a positive mood considered their academic goals more important after thinking about why they studied for exams (i.e., high-level construal) rather than how they studied for exams (i.e., low-level construal). Conversely, participants in a negative mood indicated that their academic goals were more important after considering their goals at low-level construal rather than high-level construal. These findings indicate that a positive (negative) mood increases abstract (concrete) construal and that the match between ones' mood and the construal level at which one views a goal facilitates goal engagement.

Lee et al. (2010) offer a more direct explanation of the underlying mechanisms of the motivational influences of fit. The authors proposed that promotion-focused people tend to construe information at an abstract, high level whereas prevention-focused people tend to construe information at a concrete, low level. From this relationship, they further speculated that a correspondence between one's regulatory orientation and the level at which he or she construed the information would stimulate an experience of engagement that in turn would enhance processing fluency and persuasion. In one study, they induced regulatory mind-sets and then asked participants to evaluate a fictitious brand whose advertisement was described in terms of either an abstract, high-level construal (i.e., "why one should exercise") or a concrete, low-level construal (i.e., "how one should exercise"). They found that participants evaluated the brand more favorably when they reviewed the advertisement construed at the level that fit their regulatory focus than at the

level that did not fit their regulatory focus. More important, they demonstrated that the experience of engagement (e.g., feeling motivated) underlies the fit effects. In line with this finding, the regulatory engagement theory (Higgins 2006; Higgins et al. 2008) well describes the motivational influences of fit via the experience of engagement.

The regulatory engagement theory refers “strength of engagement” to a motivational force people experience when they engage in choices or decisions with strategies that fit their motivational orientation (Higgins 2006). More specifically, it postulates that pursuing one’s goal in a right or proper way influences the subsequent value of the goal, especially by intensifying the force of attraction toward the goal. For instance, Higgins et al. (2008) argued that whether the process of goal pursuit is considered by the actor as the proper or right way to pursue the goal in the given circumstances influences engagement as well as the value of their choice or decision.

On the basis of action identification theory, we predict that people will consider their goal pursuit at different levels depending on goal progress. If goal progress drives people's attention to different aspects of goal pursuit (why vs. how), then there will be more and less appropriate manners people consider in pursuing their goals. More precisely, we anticipate that people perceiving greater progress may think of their goal pursuit at an abstract, superordinate level, whereas people perceiving lesser progress may think of their goal pursuit in a concrete, subordinate manner. Following the notion that fit (appropriateness) effects increases goal engagement and the valuation of goals, we expect that thinking of goal pursuit in an appropriate manner will in turn influence engagement and subsequent self-regulation.

H2: Fit between goal progress and goal construal is more likely to foster engagement and influence subsequent self-regulation than nonfit.

2.3 Empirical Findings

2.3.1 Summary and Overview of Studies

Four studies tested these hypotheses. Studies 1 and 2 investigate the relationship between goal progress and construal level. Specifically, study 1 demonstrates that people who perceive greater progress tend to think at a more abstract, higher level by using a fewer number of groups when categorizing objects than people who perceive lesser progress. Study 2 provides further evidence on this relationship by showing that greater progress draws people's attention to more abstract aspects (i.e., "why") of goal pursuit than concrete aspects (i.e., "how"). Given the relationship between goal progress and mental construal, studies 3 and 4 examine the motivational influence of fit between goal progress and goal construal. Study 3 illustrates that fit between goal progress and abstract (i.e., "why") versus concrete (i.e., "how") thinking of pursuing an academic goal enhances goal-related efforts, whereby abstract (concrete) thinking leads people perceiving greater (lesser) progress to expend more effort toward a goal-congruent activity. Lastly, study 4 replicates the influence of fit on the subsequent pursuit of a goal-related action in the domain of money management and also demonstrates that engagement underlies the fit effects.

2.3.2 Study 1: Goal Progress and Construal Level

Study 1 investigated how goal progress influences construal level. Following prior studies (Fishbach and Dhar 2005; Fishbach et al. 2006), we manipulated goal progress through social comparison. We predicted that comparison with a low social standard (one hour of exercise during the previous week; high progress) would induce greater perceived progress toward a fitness goal than comparison with a high social standard (10 hours of exercise; low progress). After manipulating goal progress, we examined its influence on construal level using a classification task (Liberman, Sagristano, and Trope 2002), in which participants classified objects into categories. Researchers often use this classification task to measure construal level based on the premise that an abstract, higher-level construal leads to broader, more inclusive categories. Therefore, when people adopt an abstract, higher-level construal, they tend to use fewer categories to classify objects.

2.3.2. 1 Method

Seventy-seven undergraduate students (49 males; Mage = 21.23) were randomly assigned to one of the two conditions (goal progress: high vs. low). On arrival, participants were informed that prior participants answered only the first item and that we were reusing their papers. When they received their booklets, participants first reported the amount of time they had spent working out during the previous week. On the following page, they found the fictitious participant's response for the amount of time he or she had spent exercising over the previous week. Depending on the experimental condition, the fictitious participant's response was either one hour (low standard; high perceived progress) or 10 hours (high standard; low perceived progress). As a

manipulation check, participants also indicated their perceived goal progress on a 7-point scale (1= no progress; 7 = a lot of progress).

Recently, Labroo and Patrick (2009) showed that positive mood evokes abstract, high-level construals. Considering that goal progress might induce affect, which would then influence construal level, we measured affect using eight items (e.g., "I feel proud of myself," "I feel regretful"; Louro et al. 2007). We asked participants to indicate their feelings toward their goal pursuit on 7-point scales (1 = not at all; 7 = very much). Participants then performed a classification task (Liberman et al. 2002), in which they classified items for each of two scenarios (i.e., going camping and organizing a yard sale) into groups. For the camping scenario, participants were asked to imagine that they were going with their family on a camping trip and were thinking about what to bring. They then placed objects (see appendix C for the complete list of objects) into groups by writing down which objects belonged together and circling the objects that belonged in the same group. Because a higher-level construal allows people to think more abstractly and categorize objects in a more inclusive way, we predicted that high goal progress would lead to a higher-level construal, which in turn would lead people to use fewer categories to classify objects than low goal progress.

2.3.2.2 Results

Our manipulation of perceived goal progress worked as expected. Although the actual amount of time spent working out was not significantly different in the high ($M_{high\ progress}$ = 5.02) and low ($M_{low\ progress}$ = 4.30; F(1, 75) = .606, NS) progress conditions, participants exposed to the low social standard (one hour, $M_{high\ progress}$ = 4.41) perceived

greater progress than those exposed to the high social standard (10 hours, $M_{low\ progress}$ = 3.65; F(1, 75) = 3.993, p = .049, η_p^2 = .051).

To test whether goal progress affected construal level, we conducted a multivariate analysis of variance on the number of categories in the camping trip and yard sale scenarios, with goal progress condition as the independent variable. Consistent with hypothesis 1, there was a significant effect of condition on the number of categories (F(2, 74) = 4.347, p = .016, η_p^2 = .105). Participants in the high progress condition used fewer categories to classify items than participants in the low progress condition for both the camping trip ($M_{high\ progress}$ = 5.16, $M_{low\ progress}$ = 6.13; F(1, 75) = -2.306, p = .024, η_p^2 = .066) and the yard sale scenarios ($M_{high\ progress}$ = 5.24, $M_{low\ progress}$ = 6.53; F(1, 75) = 8.316, p = .005, η_p^2 = .100; see figure A-1). These findings provide evidence supporting the hypothesis that greater perceived goal progress leads to higher-level construals.

2.3.2.3 Discussion

This study tested hypothesis 1 about the relationship between perceived goal progress and construal level. Although the actual amount of time was not significantly different in the high and low progress conditions, participants in the high progress condition perceived that they had made more progress towards their goals than participants in the low progress condition. Furthermore, as we predicted, greater perceived goal progress led to higher levels of construal. Consistent with action identification theory (Vallacher and Wegner 1986, 1987), these results suggest that people focus on a global perspective when they perceive they have made high goal progress, whereas they focus on specifics and details when they perceive they have made low goal progress.

Recent research suggests that positive affect leads people to adopt abstract, high-level construals (Labroo and Patrick 2009), and so we tested whether affect mediated the relationship between goal progress and construal level. We found that goal progress evoked more positive affect; in contrast, however, we did not find evidence that affect mediated the relationship between goal progress and construal level (see appendix D). Our results suggest a direct impact of goal progress on construal level that is not mediated by affect[1].

In this study, we observed different construal levels in the high and low goal progress conditions by using a classification task which was not directly relevant to the domain of self-regulation primed. Although our findings are consistent with the carry-over effects in previous research (Förster and Dannenberg 2010), there is still room to clarify the link between goal progress and mental construal. That is, one could ask if the findings also hold true in a directly relevant domain. Our next study tested the influence of goal progress on construal level using two tasks that were either directly or indirectly relevant to the domain of self-regulation.

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[1] A possible explanation for these conflicting findings is that the two studies measured affect differently. Labroo and Patrick (2008) were concerned with mood in general, whereas we measured specific feelings following previous self-regulation research (Louro et al. 2007). In one study that is not included in this dissertation, we measured happiness as a measure of mood (Labroo and Patrick 2009) and examined whether mood mediated the influence of goal progress on construal level. Consistent with the findings in study 1, goal progress was significantly related to both the BIF score ($\beta = 2.343$, SE = .809; $p = .004$) and mood ($\beta = .448$, SE = .226; $p = .049$). However, mood was not significantly related to the BIF score ($\beta = .276$, SE = .310; $p = .375$).

2.3.3 Study 2: Goal Progress and Different Aspects of Goal Pursuit

The primary purpose of study 2 was to clarify how goal progress affects construal level by examining its influence on cognitive shifts regarding the focal goal primed in this study as well as a set of unrelated actions. The influence of goal progress on construal level observed in study 1 may have occurred because different levels of goal progress drew people's attention to different aspects of their goal pursuit (i.e., “why” vs. “how” aspects), which in turn influenced general mental construal. To test this possibility, we examined the aspects of goal pursuit people focus on at different levels of goal progress. If different cognitive concerns explain the relationship between goal progress and construal level, more thoughts concerning “why” aspects (desirability concerns) should appear in the high progress condition, whereas more thoughts concerning “how” aspects (feasibility concerns) should appear in the low progress condition. Also, as a supposedly unrelated task, the 25-item Behavioral Identification Form (BIF; Vallacher and Wegner 1989) was used to assess construal level. The BIF questionnaire includes 25 activities, followed by two statements. One statement describes the activity on a low level of construal, and the other statement describes the activity on a high level of construal. For example, “locking a door” is followed by (1) “putting a key in the lock” (low-level construal) and (2) “securing the house” (high-level construal).

Furthermore, to ensure the generalizability of our findings, we conducted this study using a different manipulation of goal progress and a different population. We used a fitness goal and manipulated different levels of perceived goal progress by providing participants with an article about the average middle-aged American's effort to achieve.

Consistent with prior research (Fishbach and Dhar 2005), we predicted that participants would perceive greater progress when they compared their effort to a low standard (Approximately one thirds of Americans exercise two or more days a week) than to a high standard (Approximately two thirds of Americans exercise five or more days a week).

2.3.3.1 Method

Eighty one people from a large online subject pool (35 males; M_{age} = 33.44) were randomly assigned to 2 conditions (goal progress: high vs. low).

First, we asked participants to provide their fitness goals in an open-ended question. They then specified the number of days they had exercised over the previous week. Then, we manipulated perceived goal progress using low versus high standards (Fishbach and Dhar 2005). All participants were given an article discussing Americans' workout habits. The article used in the high progress condition set a relatively low workout reference point and was entitled “Majority of Americans Exercise Less than Two Days a Week”. The article in the low progress condition, on the other hand, set a relatively high workout reference point and was entitled “Majority of Americans Exercise More than Five Days a Week”. As in study 1, participants indicated their perceived goal progress on a 7-point scale (1= no progress; 7 = a lot of progress). Then, to examine whether different levels of perceived goal progress draw people’s attention to different aspects of goal pursuit, we asked participants to list thoughts that came to their mind as they considered the pursuit of their fitness goals. Following this thought generation task, participants completed the BIF questionnaire (Vallacher and Wegner 1989).

To investigate the possible impact of involvement, we also measured the level of involvement in thought generation using two items ("To what extent were you trying hard to list your thoughts?" and "How much effort did you put into listing your thoughts?") on a seven-point scale (1= not at all; 7 = very much). Finally, participants provided their demographic information.

2.3.3.2 Results

The manipulation of goal progress worked successfully. Although the number of days exercising over the previous week was not significantly different in the high ($M_{high\ progress}$ = 3.19) and low ($M_{low\ progress}$ = 2.68; F(1, 79) = 1.158, NS) progress conditions, perceived goal progress was greater in the high progress condition than in the low progress condition ($M_{high\ progress}$ = 4.58, $M_{low\ progress}$ = 3.63; F(1, 79) = 6.058, p = .016, η_p^2 = .071).

Influence of Goal Progress on Construal Level. We first calculated participants' BIF scores. Participants' responses were specified as binary variables, in which we coded high-level construal as 1 and low-level construal as 0. Then, we summed each participant's responses across the 25 items to obtain a BIF score. The result of an analysis of variance (ANOVA) examining the influence of goal progress (i.e., high vs. low levels) on the BIF scale was significant. Supporting hypothesis 1, participants in the high progress condition ($M_{high\ progress}$ = 16.86) showed higher levels of construal than participants in the low progress condition ($M_{low\ progress}$ = 14.39; F(1, 79) = 3.438, p = .034, one-tailed, η_p^2 = .042; see figure A-2). Consistent with the findings in study 1, this result indicates that greater goal progress leads to a higher-level construal compared with lesser goal progress.

Goal Progress and the Aspects of Goal Pursuit. To explain the link between goal progress and construal level, we examined the types of thoughts participants listed when considering their goal pursuit. We first asked two independent judges to classify each of the participant's thoughts into either "why" or "how" aspect (Kappa = .751) and then asked a third judge to re-code conflicts between the two judges. Two participants had no "why" or "how" thought listings and were therefore removed from subsequent analyses. Then we calculated ratios of abstract and concrete thinking for each participant by dividing the number of "why" or "how" thoughts by the sum of them. Then, we performed a one-factor repeated measure ANOVA on these two measures depending on goal progress. In support of our predictions, participants in the high progress condition listed a larger proportion of "why" thoughts (M = .626) than "how" thoughts (M = .374). Conversely, participants in the low progress condition generated a greater proportion of "how" thoughts (M = .630) compared to "why" thoughts (M = .370; $F(1, 77) = 6.780$, $p = .011$, $\eta_p^2 = .081$; see figure A-3). These results suggest that goal progress changes peoples' focus to different aspects (why vs. how) of goal pursuit.

2.3.3.3 Discussion

In study 1, we used a classification task which was not directly relevant to the domain of self-regulation primed in the study to examine people's construal level. This raises a question whether the effects of goal progress on an unrelated task was carried over by the shifts in mental representations of focal goal pursuit. We addressed this question in study 2 by examining whether people focused on "why" versus "how" aspects of their goal pursuit in different goal progress conditions. The results revealed that greater progress tended to shift people's attention to abstract, superordinate aspects rather than

concrete, subordinate aspects of goal pursuit. In addition, the results of the BIF scale showed that greater progress increased construal level, supporting Vallacher and Wegner's (1987) contention that task performance directs cognitive attention to different levels of identification. Taken together, these results suggest that greater perceived goal progress increases construal level.

One important issue unaddressed in Studies 1 and 2 is how the understanding of the relationship between goal progress and construal level benefits consumer welfare. In the following studies, we examined how these findings affect subsequent self-regulation.

2.3.4 Study 3: The Influence of Abstract versus Concrete Goal Construal on Self-Regulation

The purpose of this study was threefold: (1) to show the goal progress effects on construal are robust, (2) to rule out a possible confound of goal proximity, and (3) to examine the relationship between fit and motivation. To demonstrate that the construal level findings in studies 1 and 2 were robust, we used a different goal domain and manipulation of goal progress. We used an academic goal and manipulated perceptions of goal progress by asking participants to indicate the amount of time they had spent studying in the previous day in either a narrow scale or a wide scale (see figure A-4 for examples of progress feedback). Consistent with prior research (Fishbach and Dhar 2005), we predicted that participants would perceive greater progress when they indicated the time spent on the narrow scale (which had two hours as its end point) than on the wide scale (which had eight hours as its end point). To check the impact of perceived goal progress on construal level, we used the BIF questionnaire as we did in study 2.

The second objective was to rule out a possible confounding effect of goal proximity on construal level. Unlike control theory, some research in the motivation literature has conceptualized goal progress in terms of the distance between the current state and a specific end state (Brendl and Higgins 1996; Brown 1948; Hull 1934). Because distance to the end point, namely "goal proximity," is often correlated with the amount of movement in the process of goal pursuit (Louro et al. 2007), the manipulations used in this study could affect goal proximity as well as goal progress. Thus, it is unclear whether the perception of periodical movement or the distance between the current and end states influences construal level. To clarify this issue, we measured perceived goal progress as well as goal proximity in this study.

Study 3 also tests our proposition that fit between goal progress and goal construal exerts a larger motivational influence than nonfit. We propose that abstract goal construal will motivate people to achieve their goals more than concrete goal construal when people perceive greater goal progress, and that concrete goal construal will motivate people to achieve their goals more than abstract goal construal when people perceive lesser goal progress. To test this prediction, we asked participants to consider how or why they pursue their academic goals and then to report their intended expenditure of effort toward their academic goals.

2.3.4.1 Method

One hundred undergraduate students participated in the study (63 males; M_{age} = 20.88). Participants were randomly assigned to a 2 (goal progress: high vs. low) × 2 (goal construal: abstract vs. concrete) between-subjects design.

First, we asked participants to provide their most important academic goal at the moment in an open-ended question. They then specified the amount of time they had spent studying in the previous day. We induced a sense of goal progress using two scales with different end points (two hours vs. eight hours; Fishbach and Dhar 2005). Participants in the high progress condition indicated the amount of time they had spent studying on a narrow scale, and participants in the low progress condition indicated the amount of time on a wide scale. We further instructed them to fill in the entire scale if their time spent studying went beyond the end point. Next, participants indicated their perceived goal progress on a 7-point scale (1= no progress; 7 = a lot of progress) and perceived goal proximity by rating how close they were to and how far they were from achieving their academic goals on a 7-point scale (1 = not at all; 7 = very much) (Louro et al. 2007). Participants then completed the BIF questionnaire (Vallacher and Wegner 1989).

To test the motivational influence of fit between goal progress and goal construal, we randomly assigned participants to two goal-construal conditions. In the abstract goal-construal condition, participants were asked to write about why they should study for their course work, whereas in the concrete goal-construal condition, they were asked to write about how they should study for their course work. We then asked participants to specify the amount of time they would spend studying that night, which reflects subsequent self-regulation. Finally, participants provided their demographic information.

2.3.4.2 Results

Our goal progress manipulation worked as expected. The actual amount of time spent on course work was not significantly different in the high and low progress conditions ($M_{high\ progress}$ = 3.61, $M_{low\ progress}$ = 4.18; F(1, 98) = 1.255, NS) but perceived goal progress was significantly greater in the high progress condition than in the low progress condition ($M_{high\ progress}$ = 5.70, $M_{low\ progress}$ = 4.84; F(1, 98) = 13.401, p = .000, η_p^2 = .120). In contrast, the high and low progress conditions had no significant effect on goal proximity (Cronbach's Alpha for goal proximity measures = .718; Mhigh progress = 4.79, Mlow progress = 4.80; F(1, 98) = .002, NS).

Influence of Goal Progress on Construal Level. We calculated participants' BIF scores to examine hypothesis 1, that greater perceived goal progress would lead to high levels of construal, following the same procedure used in study 2. An ANOVA examining the influence of goal progress (i.e., narrow vs. wide scales) on the BIF scale revealed a significant difference in the BIF scores in high and low progress conditions. Consistent with our hypothesis, participants in the high progress condition showed higher levels of construal ($M_{high\ progress}$ = 17.30) than participants in the low progress condition ($M_{low\ progress}$ = 13.52; F(1, 98) = 14.703, p = .000, η_p^2 = .130; see figure A-5). These results indicate that compared with lesser goal progress, greater goal progress leads to a higher-level construal. Additional analyses showed that perceived goal proximity was not significantly correlated with the BIF scores (r = .160, NS), whereas perceived goal progress was significantly correlated with the BIF scores (r = .296, p = .003), consistent with our prediction that goal progress rather than goal proximity influences construal level.

Fit Effects on Expenditure of Effort. We measured the amount of time participants intended to spend studying for course work to assess whether fit between goal progress and goal construal influenced subsequent self-regulation. We included the amount of time participants had spent studying in the previous day as a covariate to control for between subject differences. The analysis of covariance results revealed the predicted pattern of the interaction ($F(1, 95) = 5.295$, $p = .024$, $\eta_p^2 = .053$). Participants in the high progress condition planned to spend more time studying that night after abstract (vs. concrete) thinking about their academic goals ($M_{\text{abstract goal construal}} = 4.30$, $M_{\text{concrete goal construal}} = 3.41$). Conversely, participants in the low progress condition planned to spend more time after concrete (vs. abstract) thinking ($M_{\text{concrete goal construal}} = 4.56$, $M_{\text{abstract goal construal}} = 3.68$; see figure A-6).

2.3.4.3 Discussion

In sum, across different domains of self-regulation (fitness goals in studies 1 and 2 and academic goals in study 3) and different ways of assessing construal level (a classification task in study 1 and the BIF questionnaire in studies 2 and 3), we found that greater goal progress leads to higher-level construals. In order to exclude the possibility that our results were driven by goal proximity (i.e., the discrepancy between the current state and a specific end state) rather than goal progress, we directly measured goal proximity in this study. Supporting the proposed relationship between goal progress and construal level, these additional analyses revealed that goal proximity did not differ across high and low progress conditions and was not significantly correlated with construal level.

In addition, we examined the impact of abstract versus goal construal on subsequent goal pursuit using a behavioral measure. Participants in the high progress condition planned to spend more time studying after thinking about their academic goals in an abstract (vs. concrete) manner, whereas participants in the low progress condition intended to spend more time after thinking in a concrete (vs. abstract) way. These results indicate that compared to nonfit, fit between goal progress and goal construal is more likely to direct people's efforts toward goal-congruent activities. We hypothesized that fit between goal progress and goal construal leads to increasing goal engagement and in turn affect subsequent self-regulation. We tested the underlying mechanism in study 4.

2.3.5 Study 4: The Mediating Role of Engagement

The objectives of study 4 were to replicate the motivational influence of fit between goal progress and goal construal in another goal domain and to examine the underlying process of the fit effects. We used money management as the focal goal and manipulated goal progress using fictitious information on U.S. college students' spending habits. We predicted that participants would perceive greater progress toward their money management goals when comparing their spending habits with those of average college students who spent relatively more money (vs. less). To assess the motivational influence of fit between goal progress and goal construal on subsequent self-regulation, we manipulated goal construals by asking participants to consider their pursuits of money management goals in terms of either an abstract or a concrete construal level as we did in study 3. We expected that participants in the high progress condition would be more likely to behave in a way congruent with their money management goals when considering their goal pursuits at an abstract level, whereas participants in the low

progress condition would be more likely to behave in such a way when considering their goal pursuits at a concrete level.

Moreover, we investigated whether engagement underlies the fit effects of goal progress and goal construal in this study. We measured assessed engagement using two items, participants' experience of feeling motivated and feeling compelled.

2.3.5.1 Method

Ninety-two undergraduate students participated in the study (69 males; M_{age} = 21.15). This study used a 2 (goal progress: high vs. low) × 2 (goal construal: abstract vs. concrete) between-subjects design. Participants were randomly assigned to one of the four conditions.

We first primed the focal goal by asking participants to specify their money management goals in an open-ended question. We then provided participants with fictitious information on U.S. college students' saving habits. Participants in the high progress condition were told that U.S. college students were spending a lot more than they used to, spending approximately 50% of their disposable income on clothing and entertainment. Conversely, participants in the low progress condition were told that U.S. college students were spending a lot less than they used to, spending less than 10% of their disposable income on clothing and entertainment. After reading this information, participants reported their goal progress compared with the average college student on a 7-point scale (1 = no progress; 7 = a lot of progress). We also measured goal proximity using the same items used in study 3.

We hypothesized that goal progress would interact with goal construal framing and subsequently influence self-regulation. To test this prediction, similar to study 3, we

asked participants to think about their goal pursuit at different levels of construal. Participants in the abstract construal condition wrote about why they should achieve their money management goal(s), and participants in the concrete construal condition wrote about how they should achieve their money management goals. We expected that engagement would mediate the effect of fit between goal progress and the manner in which people consider their goal pursuit and subsequent self-regulation. To demonstrate this underlying process, we assessed engagement using two items, participants' experience of feeling motivated from Lee et al. (2010) and feeling compelled based on Higgins (2006). Participants were asked to indicate the extent to which they felt motivated/compelled to pursue their money management goal(s) when thinking of either the reasons for managing their money or the ways of managing their money in the previous question on 100 millimeter line scales anchored by “not at all” and “a lot.” We also asked them to report how much money they planned on spending for eating out with friends compared to their normal amount on a 100 millimeter line anchored by “much less than average” and “much more than average.” Lastly, participants provided their demographic information.

2.3.5.2 Results

As predicted, participants in the high progress condition (i.e., compared themselves with students who were spending a lot) perceived making greater progress toward their money management goals than those in the low progress condition (i.e., compared themselves with students who were spending little) ($M_{\text{high progress}} = 4.74$; $M_{\text{low progress}} = 4.07$; $F(1, 90) = 5.881$, $p = .017$). This result demonstrates that the manipulation of goal progress was successful. Consistent with the results in study 3, perceived goal

proximity (Cronbach's Alpha for goal proximity measures = .809) was not significantly different in high versus low progress conditions ($F < 1$, NS).

Fit effects on goal-congruent behavior. An ANOVA on goal progress (high vs. low) × goal construal (abstract vs. concrete) yielded a significant interaction effect ($F(1, 88) = 6.564$, $p = .012$, $\eta_p^2 = .069$; see figure A-7). Participants in the high progress condition intended to spend less eating out with friends when they thought about their pursuit of money management goal(s) in abstract terms rather than in concrete terms ($M_{\text{abstract goal construal}} = 3.62$, $M_{\text{concrete goal construal}} = 4.70$), whereas participants in the low progress condition planned to spend less eating out when they construed their goal pursuit in a concrete manner rather than in an abstract manner ($M_{\text{concrete goal construal}} = 3.27$, $M_{\text{abstract goal construal}} = 4.64$). Consistent with our expectations, these results provide support for the fit effects of goal progress and goal construal on self-regulation.

Mediating role of engagement. In support of our hypothesis 2, an ANOVA revealed a significant interaction effect of goal progress and goal construal on engagement (Cronbach's Alpha for engagement measures = .819; $F(1, 88) = 6.348$, $p = .014$, $\eta_p^2 = .067$). Participants in the high progress condition showed greater engagement after considering their goal pursuit in an abstract manner rather than in a concrete manner ($M_{\text{abstract goal construal}} = 6.92$, $M_{\text{concrete goal construal}} = 5.70$). In contrast, participants in the low progress condition showed greater engagement after considering their goal pursuit in an concrete terms than in an abstract terms ($M_{\text{concrete goal construal}} = 6.92$, $M_{\text{abstract goal construal}} = 6.10$). Given this significant interaction effect, we further examined whether engagement mediated the influence of fit between goal progress and goal construal on self-regulation. We first conducted a series of regression analyses (Baron

and Kenny 1986). The regression analyses revealed significant influences of fit (fit = high progress & abstract construal or low progress & concrete construal; nonfit = high progress & concrete construal or low progress & abstract construal) on engagement (β = 1.033, SE = .401; p = .012) and of engagement on expected spending for eating out with friends (β = -.340, SE = .119; p = .005). The effect of fit on expected spending for eating out was significant (β = -.1.231, SE = .473; p = .011). However, the effect significantly decreased (β = -.944, SE = .479; p = .052; Sobel = 1.913, p = .055) when we entered engagement as a mediator (β = -.278, SE = .122; p = .025). In addition, bootstrap analyses (Preacher and Hayes 2004; Zhao, Lynch, and Chen 2010) revealed that the mean indirect effect was negative and significant (M = -.2868), with a 95% confidence interval excluding zero (-.8009 to -.0116). The significant indirect and direct effects of fit suggest the partial mediating role of engagement on the relationship between fit and self-regulation.

2.3.5.3 Discussion

The results of study 4 add further evidence for the influence of fit between goal progress and goal construal on self-regulation. Consistent with the findings in study 3, the fit between goal progress and goal construal positively influenced subsequent self-regulation. Further, the results suggest that engagement partially mediates the influence of fit on self-regulation.

Although the results of studies 3 and 4 show that the fit between goal progress and goal construal impacts motivation, it is important to note that we did not observe whether fit has an impact on actual behavior. Future research should examine the influence of fit between goal progress and goal construal on subsequent behavior.

2.4 General Discussion

In line with previous research on construal level theory and action identification theory, we predicted that greater perceived goal progress would increase construal level. On the basis of this relationship, we further expected that fit between goal progress and goal construal would foster goal engagement and influence subsequent self-regulation. In study 1, we employed social comparison to induce a sense of goal progress (Fishbach and Dhar 2005; Fishbach et al. 2006) and assessed construal level using a classification task (Liberman et al. 2002). We found that participants in the high progress condition classified objects in a more inclusive way using fewer categories than participants in the low progress condition. In study 2, we manipulated perceived goal progress by providing participants with different levels of effort that their relevant social group made on the focal goal. We then examined the influence of goal progress on construal level in two ways. We used the BIF questionnaire, which is commonly used to assess construal level. We also observe the aspects that were primarily focused on by the participants. Consistent with the findings of study 1, the results revealed that higher progress led to a higher construal level (i.e., higher BIF scores) and also drew participants' attention to more abstract, higher-level aspects of goal pursuit. These findings support our hypothesis that greater progress evokes a higher level of construal.

Based on this relationship between goal progress and construal level, we investigated how fit between goal progress and the level at which people consider their goal pursuit influenced subsequent self-regulation in studies 3 and 4. In the context of academic achievement, study 3 examined how abstract versus concrete thinking influenced one's intended effort toward a goal-related activity under different levels of

goal progress. We found that participants in the high progress condition planned to devote more time to studying for their course work after abstract thinking (i.e., “why” study for course work) than after concrete thinking (i.e., “how” to study for course work). Conversely, participants in the low progress condition intended to spend more time after concrete thinking than after abstract thinking. In study 4, we replicated the fit effects on engaging in goal-congruent behavior in the context of money management. Study 4 also showed that the experience of engagement mediated the fit effects.

Our findings add to the understanding of the influence of goal progress on information processing in multiple ways. First, supporting action identification theory, the results of study 1 indicate that different levels of perceived progress trigger different cognitive representations of goal pursuit. Furthermore, the findings from studies 1 and 2 suggest that the influence of goal performance is not limited to mental presentations of goal-related actions. In order to assess the influence of goal progress on construal level, we used two measures of construal level that have been commonly used in various domains. These findings provide empirical support for the carry-over effects of processing styles to unrelated domains proposed by Förster and Dannenberg (2010).

Second, the results of this study help to explain seemingly conflicting findings in the motivation literature. Research based upon control theory suggests lower progress induces greater motivation (Carver and Scheier 1982, 1990; Cheema and Bagchi 2011), whereas other research indicates that both low and high progress decrease motivation (Atkinson 1957; Louro et al. 2007). According to our findings, the level at which people consider their goal pursuit moderates the influence of low (high) goal progress on subsequent goal pursuit. Consistent with control theory, low progress can increase

motivation when one directs his/her attention toward manageable steps or details rather than the larger meaning of goal pursuit. High progress, on the other hand, can increase motivation when one directs his/her attention toward a global meaning rather than specific steps of goal pursuit.

The findings in this research also offer implications for consumer welfare by providing an answer for the question of how to best motivate people. According to our findings, different levels of goal progress attract people's attention to different aspects of goal pursuit, whereby greater progress draws attention to desirability concerns rather than feasibility concerns. Abstract goal construal focuses on desirable aspects of goal pursuit, whereas concrete goal construal focuses on feasibility aspects. Thus, our findings suggest that focusing on abstract (vs. concrete) aspects of goal pursuit is more likely to foster goal engagement and promote self-regulation in high progress conditions. Conversely, as people perceive lesser goal progress, concrete rather than abstract thinking better fits their mental construal and thus is more likely to enhance engagement and self-regulation. Thus, in the course of goal pursuit, people should view their goal pursuit in a manner that fits their progress.

CHAPTER III

ESSAY 2. THE PERSUASIVE INFLUENCE OF FIT BETWEEN GOAL PROGRESS AND THE CONSTRUAL LEVEL OF MESSAGE FRAMING

This essay examines the persuasive influence of fit between goal progress and the construal level of message framing. In essay 1, we showed that greater perceived goal progress leads to higher construal levels than lesser perceived goal progress. Based on this relationship between goal progress and construal level, we propose that abstract (i.e., why) message framing fits people who perceive higher progress, whereas concrete (i.e., how) message framing fits people who perceive lower progress. Because the experience of fit enhances processing fluency, we predict that a correspondence between people's goal progress and the level at which messages are construed increases persuasion. Our findings indicate that as people perceive greater goal progress, messages framed in abstract construals tend to have greater persuasive influence than messages framed in concrete construals (studies 1 and 2), partly because fit makes it easier to process the messages (study 2). Study 3 further shows that the fit between goal progress and the construal level of message framing leads people to engage in goal-congruent behavior.

3.1 Introduction

Many companies promote their products as a way to help people achieve their goals. Some companies employ abstract construal framing by emphasizing superordinate features or the end state of an action, whereas others employ concrete construal framing by stressing the means to achieve the end state. For example, HSBC, a large financial services company, motivates its clients by emphasizing *why* they need to plan for their

retirement (i.e., abstract construal framing: “The quality of life you want in the future will depend on how well you plan for your retirement now”; http://www.hsbc.com/1/2/retirement, see appendix E). Conversely, Merrill Edge, another financial services company, emphasizes *how* its clients should plan for retirement (i.e., concrete construal framing: “Find out how to begin planning, saving and investing, and learn how to monitor your progress”; http://www.merrilledge.com/m/pages/retirement.aspx, see appendix E). Although these companies promote a similar idea, they used different messages. Thus, a significant question is whether these messages are equally persuasive.

Action identification theory postulates that low performance or increased difficulty of enactment leads to lower levels of representation (mental construal) (Vallacher and Wegner 1987). In the context of goal pursuit, this suggests that lesser goal progress leads to lower construal levels than greater goal progress. Besides, recent consumer research has shown that fit between the construal level of messages and individuals’ mental construal exerts greater persuasive influence (Labroo and Patrick 2009; Lee et al. 2010). Following this research, we propose that as people perceive high progress, they will be more persuaded by messages framed in an abstract construal rather than in a concrete construal. Conversely, as people perceive low progress, they will be more persuaded by messages framed in a concrete construal rather than an abstract construal. We further predict that processing fluency underlies the persuasive influence of fit.

3.2 Theoretical Background

3.2.1 The Relationship between Goal Progress and Construal Level

Theories of mental construal suggest that any action or event can be construed at different levels (Trope, Liberman, and Wakslak 2007; Vallacher and Wegner 1987). For example, construal level theory postulates that an action can be construed at either concrete or abstract levels depending on psychological distance (Liberman and Trope 1998). Consistently, action identification theory suggests that any action can be organized in a cognitive hierarchy, from low-level identities pertaining to how one acts to high-level identities pertaining to why one acts (Vallacher and Wegner 1987).

Action identification theory further proposes that the level of representation of an action is associated with performance level and that low performance or increased difficulty of enactment leads to lower levels of representation (mental construal) (Vallacher and Wegner 1987). For example, in one of their studies, Wegner et al. (1984) asked participants to drink coffee by using one of two different cups – a normal cup and an unwieldy cup weighing about one pound. Then, participants were given 30 identities for coffee drinking and asked to rate how well each of them described what they had done. Results showed that participants who used the normal cup tended to endorse identities such as “prompting my caffeine habit” or “getting energized,” which represent higher-level identifications. On the other hand, participants who used the unwieldy cup tended to give strong endorsement to identities such as “lifting a cup to my lips” or “swallowing,” which represent lower-level identifications. Across diverse domains of action, subsequent research has shown that increased action difficulty, task complexity

(i.e., variety of means or subacts), enactment time, and learning time (i.e., the amount of time it takes to learn to do the action well) lead to lower identifications levels (Vallacher and Wegner 1987).

In the context of goal pursuit, the relationship between action performance and identification levels seems to suggest that lower goal progress leads to lower construal levels, compared with higher goal progress. In the next section, based on this relationship between goal progress and construal level, we propose our hypothesis about the persuasive impact of fit.

3.2.2 The Persuasive Influence of Fit

Recently, several studies on consumer behavior have attempted to understand the effectiveness of using an abstract versus a concrete approach to framing product benefits.

Labroo and Patrick (2009) proposed that a positive mood leads to high-level construal. To examine this relationship between mood and construal level, they observed persuasive influences of high- or low-level construal framing depending on different mood conditions. In one study, they found that when participants viewed an advertisement framed in an abstract construal, those in a positive mood showed higher purchase intent than those in neutral and negative moods. Conversely, when participants viewed an advertisement framed in a concrete construal, those in a negative mood indicated higher purchase intent than those in neutral and positive moods. In the context of academic goals, they also observed that participants in a positive mood considered their academic goals more important after thinking about why they studied for exams (i.e., high-level construal) rather than how they studied for exams (i.e., low-level construal). Conversely, participants in a negative mood indicated that their academic

goals were more important after considering their goals at low-level construal rather than high-level construal. These findings suggest that abstract, high-level construals have a greater persuasive influence on people in a positive mood than those in a negative mood, whereas concrete, low-level construals have a larger influence on people in a negative mood than those in a positive mood.

Lee et al. (2010) investigated the influence of fit between regulatory focus and construal level on persuasion. They proposed that promotion-focused people tend to construe information at an abstract, high level whereas prevention-focused people tend to construe information at a concrete, low level. They also expected that a correspondence between a person's regulatory orientation and the level at which he or she construed the information would stimulate an experience of engagement. Accordingly, they further proposed that fit (vs. nonfit) between a person's regulatory focus and construal level would generate a larger influence on persuasion. In one study, they induced regulatory mind-sets and then asked participants to evaluate a fictitious brand whose advertisement was described in terms of either an abstract, high-level construal (i.e., "why one should exercise") or a concrete, low-level construal (i.e., "how one should exercise"). They found that participants evaluated the brand more favorably when they reviewed the advertisement construed at the level that fit their regulatory focus than at the level that did not fit their regulatory focus. These recent studies suggest that different levels of thinking or message framing are more persuasive when they fit a person's mental construal.

As stated earlier, if greater perceived goal progress leads people to pay more attention to more abstract, higher levels of construal, we can expect that as people

perceive high progress, they will be more persuaded when messages are framed in abstract, high-level construals than when messages are framed in concrete, low-level construals. Conversely, as people perceive low progress, they will be more persuaded by messages framed in concrete construals than by messages framed in abstract construals. More formally, we hypothesize that fit between goal progress and the construal level of messages exerts greater persuasive influence than nonfit. We test this hypothesis in two studies and propose a study to further examine the fit effects on behavior.

3.3 Empirical Findings

3.3.1 Study 1: Effects of Abstract versus Concrete Message Framing on Persuasion

Two purposes guided the design of study 1. The first purpose was to examine the persuasive influence of fit between goal progress and construal level, and the second was to provide marketers with practical implications by testing the fit effects in an advertising context. We used an advertisement for a fictitious brand of elliptical trainer with an emphasis on either an abstract construal (i.e., “why”) or a concrete construal (i.e., “how”). In the abstract construal condition, participants were provided with an advertisement describing product benefits in terms of why they should exercise, and in the concrete construal condition, participants were given an advertisement featuring product benefits in terms of how they should exercise. Then, we examined the persuasiveness of the advertisements depending on different levels of perceived goal progress. We predicted that participants in the high progress condition would evaluate the product more favorably when it was described at an abstract rather than a concrete

construal whereas those in the low progress condition would evaluate the product more favorably when it was described at a concrete rather than an abstract construal.

3.3.1.1 Method

In this study, we used a fitness goal as the focal goal, and thus we recruited participants at a gym with the expectation that they were pursuing the focal goal. One hundred eight users (51 males; M_{age} = 22.83) of a gym at a midwestern university volunteered to participate in the experiment. All participants were exiting the gym after completing their exercise routine. This study employed a 2 (goal progress: high vs. low) × 2 (construal level: abstract vs. concrete message framing) between-subjects design.

To induce different levels of perceived goal progress, we used two scales with different reference points. More specifically, participants were first asked to specify the amount of time they spent at the gym that day and then indicated the time on either a narrow scale or a wide scale on the next page. Participants in the high progress conditions saw a narrow scale, which had 50 minutes as its end point, and participants in the low progress condition saw a wide scale, which had 150 minutes as its end point. Then, participants indicated their perceived goal progress on a 7-point scale (1 = no progress; 7 = a lot of progress).

Participants then saw an advertisement framed in either an abstract construal or a concrete construal (adopted from Lee et al. 2010). The abstract construal advertisement had the headline “The Ultimate Aerobic Machine for a Great Workout,” followed by the subheadline “Why Exercise?” The advertisement also included two benefits of the elliptical trainer (i.e., “gives your body complete conditioning while you achieve cardiovascular training” and “ensures that you get buff”) with a picture of the elliptical

trainer. The concrete construal advertisement had the same headline but a different subheadline ("How to Exercise"). It also provided the same picture of the elliptical trainer and two benefits (i.e., "no-impact stepper designed to cushion each step" and "multiple incline setting complements the precise, patented geometry of the stride"). To examine the persuasiveness of the advertisements, we asked participants to evaluate whether the elliptical trainer would meet their needs and whether the elliptical trainer would provide a good workout on 7-point scales (1 = not at all; 7 = definitely).

3.3.1.2 Results

A 2 (goal progress) × 2 (construal level) ANOVA conducted on the average amount of time participants spent exercising during their visit did not yield a significant difference in the amount of time spent exercising across conditions ($F(1, 106) = 1.269$, p = NS). However, the perceived progress was greater for participants who indicated their exercise duration on a narrow scale ($M_{\text{high progress}} = 5.85$) than for those who indicated the duration on a wide scale ($M_{\text{low progress}} = 4.94$; $F(1, 106) = 12.264$, $p = .001$, $\eta_p^2 = .104$).

Persuasiveness of Abstract versus Concrete Construal. We first created a single index of consumer attitudes toward the elliptical trainer by averaging the two items used to measure the persuasiveness of the advertisements (correlation of attitude measures = .652). Then, we performed a 2 (goal progress) × 2 (construal level) ANOVA to test the influence of abstract versus concrete construal message framing on consumer attitudes toward the elliptical trainer. Only the interaction was significant ($F(1, 104) = 14.502$, $\eta_p^2 = .122$). Participants in the low progress condition evaluated the product more favorably when they were exposed to the advertisement framed in a concrete construal ($M_{\text{concrete goal construal}} = 5.02$) rather than in an abstract construal ($M_{\text{abstract goal construal}} = 3.67$). In contrast,

participants in the high progress condition evaluated the product more favorably when they were provided with the abstract construal advertisement ($M_{abstract\ goal\ construal} = 4.85$) rather than the concrete construal advertisement ($M_{concrete\ goal\ construal} = 3.98$; see figure A-8).

3.3.1.3 Discussion

In this study, we provided participants with an advertisement framed in either an abstract or a concrete construal and examined the interaction effect of goal progress and construal level on consumer attitudes toward a fictitious product. This study offered supporting evidence for the hypothesis that as perceived goal progress increases, an abstract rather than a concrete framing has a more persuasive and motivational influence. More specifically, when participants perceived high progress, an abstract framing exerted more persuasion than a concrete framing. When participants perceived low progress, a concrete framing had a greater persuasive influence than an abstract framing.

We found that participants evaluated the product more favorably when the product features were represented at the level that fit their mental construal. According to Lee et al. (2010), engagement and processing fluency can mediate the influence of fit (vs. nonfit) between a person's regulatory focus and message framing on attitudes. Similarly, the persuasive influence of fit could be a result of the ease with which participants processed product information when the product was described at the level that fit their mental construal. In study 2, we investigate the underlying mechanism of the fit between goal progress and construal level on persuasion.

3.3.2 Study 2: The Mediating Role of Processing Fluency

The objectives of study 2 were to replicate the fit effects of goal progress and construal level on persuasion in another goal domain and to explain the underlying process of the fit effects. We used money management as the focal goal and manipulated goal progress using fictitious information on U.S. college students' spending habits. We predicted that participants would perceive greater progress toward their money management goals when comparing their spending habits with those of average college students who were spending more than they were than when comparing those of average college students who were spending less than they were. To assess the persuasive influence of fit between goal progress and construal level, we used a campaign message framed in either an abstract or a concrete construal. We expected that participants in the high progress condition would evaluate the message represented at an abstract construal as more persuasive than the message represented at a concrete construal whereas those in the low progress condition would evaluate the message represented at a concrete construal as more persuasive than the message represented at an abstract construal. We further predicted that processing fluency (i.e., ease with which individuals process information) would mediate the fit effects on persuasion.

3.3.2.1 Method

One hundred fifteen undergraduate students participated in the study (86 males; M_{age} = 21.28). This study used a 2 (goal progress: high vs. low) × 2 (construal level: abstract vs. concrete message framing) between-subjects design, and participants were randomly assigned to one of the four conditions.

We first asked participants to specify their financial goals and then provided them with fictitious information on U.S. college students' saving habits. Participants in the high progress condition were told that U.S. college students were spending a lot more than they were historically, spending approximately 50% of their disposable income on clothing and entertainment. Conversely, participants in the low progress condition were told that U.S. college students were spending a lot less than they were historically, spending less than 10% of their disposable income on clothing and entertainment. After reading this information, participants reported their goal progress compared with the average college student on a 7-point scale (1 = no progress; 7 = a lot of progress). On the next page, participants were told that a nonprofit organization was running a campaign to improve college students' spending habits and were asked to evaluate a campaign message framed in either an abstract or a concrete construal level. Three questions measured the persuasiveness of the message, all on 7-point scales (1 = not at all persuasive/not at all convincing/not at all influential; 7 = very persuasive/very convincing/very influential). We also measured processing fluency of the campaign message using two items (1 = not at all easy/not at all difficult; 7 = very easy/very difficult) to test whether processing fluency mediated the influence of fit on persuasion. Finally, participants provided their demographic information and were debriefed.

3.3.2.2 Results

As we expected, participants in the high progress condition (i.e., compared themselves with students who were spending a lot) perceived making greater progress toward their money management goals than those in the low progress condition (i.e., compared themselves with students who were spending less) ($M_{\text{high progress}} = 5.12$, M_{low}

$_{progress}$ = 4.34; F(1,113) = 9.397, p = .003, η_p^2 = .077). This result suggests that the manipulation of goal progress was successful.

Fit Effects on Persuasion. To test the interaction effect of goal progress and construal level on persuasion, we first created a persuasion index by averaging the three items that participants used to evaluate the message (persuasive, convincing, and influential; Cronbach's Alpha for persuasiveness measures = .90). An ANOVA on goal progress (high vs. low progress) × construal level (concrete- vs. abstract-level message) yielded a significant interaction effect (F(1, 111) = 14.291, *p* = .000, η_p^2 = .114; see figure A-9). Participants in the high progress condition considered the campaign message more persuasive when it was framed in an abstract rather than a concrete construal ($M_{abstract\ goal\ construal}$ = 5.29, $M_{concrete\ goal\ construal}$ = 4.44), whereas those in the low progress condition considered the message more persuasive when it was framed in a concrete rather than an abstract construal ($M_{abstract\ goal\ construal}$ = 4.38, $M_{concrete\ goal\ construal}$ = 5.16). Consistent with our expectations, these results provide support for the fit effects of goal progress and construal level on persuasion.

Mediating Role of Processing Fluency. Given the significant interaction effects of goal progress and construal level on persuasion, we further examined whether processing fluency (correlation of fluency measures = .454) mediated the influence of fit between goal progress and construal level on persuasion. We first conducted a series of regression analyses (Baron and Kenny 1986). The regression analyses revealed significant influences of fit (fit = high progress & high construal level/low progress & low construal level; nonfit = high progress & low construal level/low progress & high construal level) on processing fluency (β = .578, SE = .199; *p* = .004) and of processing fluency on

persuasion (β = .281, SE = .100; *p* = .006). The effect of fit on persuasion significantly decreased from .81 to .70 (β = .696, SE = .217; *p* = .002; Sobel = 2.020, *p* = 0.043) when we entered processing fluency as a mediator (β = .197, SE = .099; *p* = .050). In addition, bootstrap analyses (Preacher and Hayes 2004; Zhao et al. 2010) revealed that the mean indirect effect was positive and significant (M = .1137), with a 95% confidence interval excluding zero (.0062 to .2786), and that the direct effect was significant (β = .696, SE = .217; *p* = .002). These results support the partial mediating role of processing fluency on the relationship between fit and persuasion.

3.3.2.3 Discussion

Consistent with the findings in study 1, study 2 shows that fit between goal progress and construal level leads to a greater persuasive influence. More important, the results suggest that ease of processing mediates the influence of fit on persuasion. In the next study, we investigate the persuasive influence of fit on engaging in goal-related behavior in another goal domain.

3.3.3 Study 3: The Persuasive Impact of Fit on Actual Behavior

The objective of study 3 was to observe the persuasive effects of fit between goal progress and the construal level of message framing on behavior. We used healthful-eating goals as the focal goal and manipulated goal progress by varying the recommended daily amount of fruits and vegetables. We expected that participants who were given an article which recommended a small daily amount of fruits and vegetables would perceive greater progress than participants who were given a larger amount. To observe the persuasive impact of fit between goal progress and construal level, we used a

campaign massage framed in either an abstract or a concrete construal. If the fit between goal progress and construal level exerts to a greater persuasive impact, participants in the high progress condition would evaluate the message represented at an abstract construal as more persuasive than the message represented at a concrete construal. In contrast, those in the low progress condition would evaluate the message represented at a concrete construal as more persuasive than the message represented at an abstract construal. We further predicted that fit would impact real behavior, specifically people's engagement in a goal-consistent behavior. We predicted that participants in the fit conditions would be more likely to sign up for a health-related online program that asked participants to log their intake of fruits and vegetables and sent participants weekly emails with health tips than participants in the non-fit conditions.

3.3.3.1 Method

One hundred and thirty-eight undergraduate students were recruited for this study (90 males; M_{age} = 20.82). We used a 2 (goal progress: high vs. low) × 2 (construal level: abstract vs. concrete message framing) between-subjects design, and participants were randomly assigned to one of the four conditions.

First, to activate the focal goal, we asked participants to describe the health goals that they were pursuing at that moment and to report how much they cared about healthful eating on a 7-point scale (1 = not at all; 7 = very much). They were also asked to report the number of cups of fruits or vegetables they normally ate each day. On the next page, we provided information on the recommended daily intake of fruits and vegetables.

We manipulated goal progress by varying the amount of fruits and vegetables recommended for daily consumption. We based these amounts on a pretest with participants from the same population as the main study. Fifty-one college students (16 males; M_{age} = 23) participated in this pretest by reporting how many cups of fruits and vegetables they normally ate each day. Results showed that almost half of the participants consumed less than two cups of fruits and vegetables each day, and that only 10 percent of participants ate more than three cups of fruits and vegetables. Given these results and recommendations by The Centers for Disease Control and Prevention that people consume three and a half to six and a half cups of fruits and vegetables per day (Centers for Disease Control and Prevention 2014), we expected that three and seven cups would be appropriate amounts for our progress manipulation.

In the main study, participants read an article that recommended consuming either three (high progress condition) or seven (low progress condition) cups of fruits and vegetables per day. Then, as a manipulation check, participants indicated their perceived progress toward their health goals on a 7-point scale (1= no progress; 7 = a lot of progress).

Next, participants were told that the Student Health Services at the university planned to run a campaign to improve college students' eating habits, and they would be asked to evaluate a campaign message framed in either an abstract or a concrete construal. The abstract construal message had the headline "Why eat fruits and vegetables of various colors" and featured several benefits of this habit. On the other hand, the concrete construal message had the headline "How to eat fruits and vegetables of various colors," and provided tips of how to add a wide variety of fruits and vegetables

to their eating plan. Three questions measured the evaluation of the message, all on 7-point scales (1 = not at all persuasive/not at all convincing/not at all influential; 7 = very persuasive/very convincing/very influential). To assess the persuasive influence on real behavior, participants were asked whether they would sign up for a program run by Student Health Services. Participants were told that the program would require them to log their intake of fruits and vegetables and that they would receive weakly emails with health tips. Finally, participants provided their demographic information (i.e., gender and age).

3.3.3.2 Results

Participants in the high progress conditions (i.e., recommended to eat three cups of fruits and vegetables) perceived greater progress toward their health goals (M = 4.63) than those in the low progress conditions (i.e., recommended to eat seven cups of fruits and vegetables) (M = 3.79; F(1, 136) = 10.391, p = .002, η_p^2 = .071). This result confirms that the manipulation of goal progress was successful.

Fit Effects on Persuasion. To test the fit effect of goal progress and the construal level of message framing on persuasion, we created a persuasion index by averaging the three items that participants used to evaluate the message (i.e., persuasive, convincing, and influential) (Cronbach's Alpha for persuasiveness measures = .920). Supporting our hypothesis, an ANOVA on goal progress (high vs. low progress) × construal level (concrete- vs. abstract-level message) yielded a significant interaction effect (F(1,134) = 13.731, p = .000, η_p^2 = .093; see figure A-10). Participants in the high progress conditions considered the campaign message more persuasive when it was framed in an abstract (M = 4.65) rather than in a concrete construal (M = 3.76), whereas those in the low progress

conditions viewed the message as more persuasive when it was framed in a concrete (M = 4.71) rather than in an abstract construal (M = 3.71).

Fit Effects on Actual Behavior. We further examined whether the fit between goal progress and construal level affected goal-related behavior (i.e., signing up for the health-related program). In support of our hypothesis, approximately 48% of the participants in the fit conditions signed up for the program, whereas only 29% in the non-fit conditions signed up (χ^2= 5.177, p = .035). In the high progress condition, 47% of the participants who were given the message framed in an abstract construal signed up for the health-related program, whereas 24% of the participants who were given the message framed in a concrete construal signed up for the program (χ^2= 4.121, p = .037, one-sided). In contrast, in the low progress condition, 47% of the participants who evaluated the message framed in a concrete construal signed up for the program, whereas 34% of the participants who evaluated the message framed in an abstract construal signed up for it (χ^2= 1.472, p = .166, one-sided). These results suggest that people perceiving greater progress are more likely to engage in a goal-congruent behavior when given a message framed at an abstract rather than a concrete construal level. On the other hand, people perceiving lesser progress are more likely to engage in such a behavior when given a message framed in a concrete rather than an abstract construal.

3.3.3.3 Discussion

In an advertising context, study 1 showed that fit between goal progress and the construal level of message framing led to more favorable attitudes toward a goal-related product than did nonfit. Study 2 extended this finding by showing that processing fluency mediated the persuasive impact of fit. Last, in study 3, we examined the persuasive effect

of fit on actual behavior using public campaign messages. We found that individuals were more likely to engage in a goal-congruent behavior (i.e., signing up for an online program designed to promote healthful eating habits) when campaign messages were framed in a way that fit individuals' goal progress than when they were not. Thus, the findings in study 3 add further evidence supporting the persuasive influence of fit. Interestingly, in study 3, we observed that the persuasive impact of messages framed in an abstract versus a concrete construal was significant when people perceived greater progress. Specifically, participants in the high progress condition were least likely to sign up for a health-related program. In the concrete construal condition, participants reviewed a campaign message about how to add a wide variety of fruits and vegetables to their diet. Because participants in the high progress condition already knew how to manage their healthful eating goals, they may have become less interested in signing up for a program to log their intake of fruits and vegetables and receive weekly emails with health tips.

3.4 General Discussion

In line with research on fit effects on persuasion, we proposed that messages that are framed in the way that corresponds to individuals' mental construal will enhance persuasion. Based on the assumption that lesser goal progress leads to lower construal levels than greater progress, we predicted that as people perceive lesser progress, concrete, low-level message framing will exert greater persuasive influence than abstract, high-level message framing. Supporting this prediction, we showed that people perceived messages that fit their goal progress as more persuasive than messages that did not fit (studies 1 - 3). Furthermore, we also found that the persuasive influence of fit between

goal progress and the construal level of messages results from the ease with which people process message information (study 2).

These findings offer important implications for marketers and policy makers. As shown earlier, to encourage retirement savings, HSBC uses abstract message framing ("why"), whereas Merrill Edge uses concrete message framing ("how"). Considering their marketing expenses as well as the benefits of retirement savings for their customers and society, our findings suggest that the companies should take into account their customers' goal progress. Specifically, if a company wants to promote retirement savings for those who have made progress, they should emphasize abstract aspects of it, such as "living comfortably in retirement" or "maintaining the current standard of living in retirement." On the other hand, if target customers have not made sufficient progress toward retirement saving goals, messages should emphasize concrete aspects, such as "setting up a direct deposit from one's paycheck to a retirement investment" or "how to develop a retirement financial plan at different stages of life."

To ensure both the internal and external validities of this research, we have made several efforts. First, we tested our hypothesis in a field setting (study 1) as well as in controlled settings (studies 2 and 3). For the generalizability of our findings, we tested the hypothesis in three different domains of self-regulation. Also, we used different types of messages, product advertisement (study 1) and public campaign messages (studies 2 and 3) to provide implications for both marketers and public policy makers. Lastly, we also provided direct evidence of behavioral outcomes (study 3).

CHAPTER IV

ESSAY 3. THE INFLUENCE OF PERCEIVED GOAL PROGRESS ON CONSUMER PERCEPTION OF AND PREFERENCE FOR UNIFINAL VERSUS MULTIFINAL MEANS

Research suggests that compared with means connected with a single goal, means linked to multiple goals are perceived as less effective for the attainment of a focal goal but may potentially yield greater value by serving multiple goals simultaneously. This trade-off between instrumentality and value makes it unclear when consumers will prefer means that satisfy either a single goal or multiple goals. This essay addresses this issue by showing how goal progress influences cognitive representations of goals and, in turn, perceptions of means. We show that greater goal progress increases perceived instrumentality of means connected with multiple goals compared with means connected with a single goal. We also demonstrate that different cognitive representations of goals and means underlie the impact of goal progress on the instrumentality of and preference for means.

4.1 Introduction

In many circumstances, people wish to pursue several goals simultaneously (Fishbach and Dhar 2005; Kruglanski et al. 2002). Thus, to satisfy consumers' concerns about health when making food choices, many restaurants now offer healthful, lower-calorie entrees and often stress both taste and health when promoting these items. For example, McDonald's uses the slogan "Under 600 calories. But they taste like a million." Similarly, Subway promotes its new sandwiches by claiming that consumers "no longer have to sacrifice nutrition or flavor." These companies seem to think that their customers

will prefer entrees that satisfy multiple goals at the same time. But will consumers believe that these low-calorie offerings are both healthful and tasty?

Research based on the dilution model suggests that the associative strength between means and goals decreases as the number of goals connected with the means increases (Zhang, Fishbach, and Kruglanski 2007). Because of the weakened associative strength, means that serve multiple goals (i.e., *multifinal means*) are perceived as less instrumental to each individual goal than means that satisfy a single goal (i.e., *unifinal means*). According to this model, it may be difficult to persuade consumers that these low-calorie entrees are both healthful and tasty. Instead, it may be more effective to emphasize one goal or the other.

However, unlike unifinal means, multifinal means have the capacity to attain more than one goal (Zhang et al. 2007). Because a single means can yield greater overall value when attaining several goals at once, multifinal means may be preferred to unifinal means (Chun et al. 2011; Kopetz et al. 2012). This suggests that a trade-off exists between value, which favors multifinal means, and instrumentality, which favors unifinal means (Chun et al. 2011). With one exception (Orehek et al. 2012), however, research has been silent about what factors affect this trade-off.

This article describes preferences for unifinal and multifinal means by examining factors that influence the instrumentality–value trade-off. In particular, control theory (Carver and Scheier 1990) and theories of mental construal (Trope and Liberman 2003; Vallacher and Wegner 1987) propose that goal progress can influence the structures of goals and means, which in turn can affect the instrumentality–value trade-off. More specifically, we propose and show that greater goal progress leads people to structure

multiple goals more inclusively than lesser goal progress. In turn, this increases their perceptions of instrumentality and preferences for multifinal versus unifinal means.

4.2 Theoretical Background

4.2.1 Motivational Constructs

Our predictions are grounded in a general conceptualization of goals as cognitive knowledge structures (Kruglanski 1996; Kruglanski et al. 2002; Zhang et al. 2007). In particular, goal systems theory provides a basis for understanding the motivational and behavioral influence of cognitive representations of motivational constructs comprising interconnected goals and means (Kopetz et al. 2012; Kruglanski et al. 2002). According to this theory, goals are organized into associative structures, in which a goal is interconnected with its corresponding means of attainment and with alternative goals. For example, the goal of weight control can be connected with the means of regular exercise and also with the alternative goal of eating enjoyment. Importantly, this theory suggests that the motivational constructs can take different forms at the same time depending on environmental cues (Kruglanski et al. 2002). Thus, a given means (e.g., doing physical exercise) can be connected with either a single goal (e.g., weight control) or multiple goals (e.g., mental health and weight control) in different situations (Kopetz et al. 2012; Kruglanski et al. 2002).

4.2.2 Unifinal versus Multifinal Means

Anderson (1974, 1983) argued that as the number of specific facts linked to a general mental construct increases, any particular fact will be less likely to be recalled or retrieved upon the presentation of the construct. Just as additional linkages weaken the

association between information nodes in memory, known as the “fan effect” (Anderson and Reder 1999), the attachment of additional goals to a given means can weaken the associative strength of any single goal to the means (Kruglanski et al. 2002; Orehek et al. 2012; Zhang et al. 2007). Building on this, Zhang et al. (2007) showed that linking additional goals to a given means dilutes the associative strength of each goal, which in turn lowers the perceived instrumentality of the means for the attainment of each individual goal. Thus, if people focus on a single goal, they tend to prefer unifinal means because of their greater instrumentality to a focal goal.

Other research, however, has shown that people choose multifinal means when pursuing several goals even when unifinal means have advantages in instrumentality (Kopetz et al. 2011). Unlike unifinal means, multifinal means can serve background goals in addition to a focal goal. Therefore, all else being equal, multifinal means can promote the attainment of greater value (Kopetz et al. 2012; Orehek et al. 2012). Taken together, choices between unifinal and multifinal means present a trade-off between instrumentality and overall value of goal achievement (Orehek et al. 2012). Compared with unifinal means, multifinal means are perceived as less effective for attaining each goal because of their additional connections with other goals. In contrast, multifinal means can serve several goals, potentially yielding greater value.

Given this trade-off, when are unifinal or multifinal means preferred? Orehek et al. (2012) identified one factor that tilts means choice in one direction or the other. Focusing on regulatory modes, they proposed that a locomotion self-regulatory mode orients attention toward movement and thus increases preference for unifinal means, which ensure movement toward a goal, versus multifinal means. Conversely, an

assessment orientation motivates people to select the best option according to its overall "goodness" and thus increases preference for multifinal means, which ensure the attainment of greater value, versus unifinal means. This shows that individual factors, such as regulatory orientation, affect the instrumentality–value trade-off. We propose that goal progress also affects this trade-off by influencing cognitive representations of motivational constructs. In the following section, we develop our hypotheses from a review of control theory and mental construal theories.

4.2.3 Goal Progress and Goal Structure

Control theory explains the regulatory influence of cognition on people's moment-to-moment actions (Lord and Levy 1994). Emphasizing a negative feedback loop borrowed from the mechanical control system depicted in cybernetics (Wiener 1948), the theory proposes that people regulate their actions to minimize discrepancies between the present state and a desired reference value through feedback-based processes (Carver and Scheier 1990). The core element of self-regulation processes is the hierarchical nature of control systems (Carver and Scheier 1982, 1990; Lord and Levy 1994; Powers 1973). Carver and Scheier (1982) noted that goals and related means are organized in a hierarchical structure, in which a lower level represents the means toward the ends at the next higher level, which extends from the highest level at which the ultimate ends are represented. Thus, moving up a level in the hierarchy explains why an action is performed, and moving down a level indicates how discrepancies can be solved (Lord and Kernan 1987; Lord and Levy 1994; Schank and Ableson 1977). Furthermore, obstacles occurring at higher levels are often resolved by the operations at lower levels (Lord and Levy 1994).

Consistent with control theory, action identification theory proposes that actions are organized in a cognitive hierarchy, from low-level identities pertaining to how one acts to high-level identities pertaining to why one acts (Vallacher and Wegner 1987). This theory further argues that people employ an optimal level of identification to most effectively perform or maintain their actions, such that poor performance of an action (e.g., difficult/complex/unfamiliar actions) is identified at lower levels, whereas successful or ordinary performance (e.g., less difficult/less complex/familiar actions) is identified at higher levels (Vallacher and Wegner 1985, 1987; Wegner and Vallacher 1986). In goal contexts, this notion suggests that higher progress can lead people to construe goals and means at a more abstract, higher level. We thus predict that, construing goals more abstractly, people perceiving greater progress will form more inclusive motivational constructs (i.e., goals and means). Stated more formally,

H1: People will represent motivational constructs more inclusively when they perceive greater goal progress than when they perceive lesser goal progress.

4.2.4 Motivational Constructs and Perception of Means

Thus, how will the different representations of motivational constructs depending on goal progress affect the perception of means? Förster (2009) showed how the scope of conceptual processing influences people's perceptions of given stimuli. He proposed that higher-level (i.e., global) processing triggers the need to find structural relationships between stimuli and thus to search for what they have in common, whereas lower-level (i.e., local) processing fosters perceptions of stimuli as belonging to different categories

and thus triggers a dissimilarity focus. In a series of studies, Förster (2009) observed that abstract processing enhances the search for similarities, whereas concrete processing triggers the search for dissimilarities.

More important, Zhang et al. (2007) showed that the dilution effect of a multifinal means diminishes when interconnected goals are similar to each other. In one study, they asked participants to elaborate on either similarities or dissimilarities of two goals that were linked to a given means and then to evaluate the instrumentality of the means to attaining each goal. They found that the dilution effect decreased when two goals were similar (vs. dissimilar) to each other. Previously, we proposed that greater progress leads people to represent goals and means in a more abstract, inclusive manner. According to Förster (2009), abstract, inclusive mental representations of stimuli can enhance the need to find structural relationships and similarities between them. Accordingly, we predict that inclusive representations of motivational constructs will weaken the dilution effect of multifinal means and increase the perceived instrumentality of multifinal means to a focal goal. Taking the influence of goal progress on the instrumentality of means one step further, we expect that as people perceive greater progress, they will prefer multifinal (vs. unifinal) means, which maximize the overall value attainable. Formally, we suggest the following:

H2: People will perceive multifinal means as more instrumental to attaining a focal goal when they perceive greater goal progress than when they perceive lesser goal progress.

H3: Preferences for multifinal means will increase when people perceive greater goal progress than when they perceive lesser goal progress.

4.3 Empirical Findings

4.3.1 Summary and Overview of Studies

Three studies test our hypotheses. Studies 1 and 3 examine whether greater goal progress increases the instrumentality of and preference for multifinal means. Studies 2 and 3 investigate whether greater goal progress leads to more inclusive representations of motivational constructs. Previous research suggests that goals are often represented in terms of progress or movement toward some desired state (Fishbach and Dhar 2005). Following previous research, this article focuses on *perceived* goal progress resulting from comparisons with a reference value, such as expected movement or social comparison (Carver and Scheier 1982, 1988; Fishbach and Dhar 2005).

Specifically, study 1 manipulates goal progress using different levels of expected effort as reference values and then examines the instrumentality of a unifinal and a multifinal means to the attainment of a focal goal. Study 2 investigates our proposed underlying mechanism of the effect of goal progress on perceptions of means. It induces different levels of goal progress through social comparison (i.e., high or low level of efforts made by a reference group) and examines how inclusively people classify means with regard to the attainment of various goals. Study 3 provides further evidence of the impact of goal progress on cognitive representations of motivational constructs and also examines perceptions of and preferences for means depending on goal progress. It uses the same goal progress manipulation as in study 1 and investigates how goal progress affects the instrumentality of and preferences for a unifinal versus a multifinal means.

4.3.2 Study 1: Instrumentality of Unifinal versus Multifinal Means

The purpose of study 1 is to examine how perceived goal progress influences the instrumentality of means. Following previous research (Fishbach and Dhar 2005), we induced different levels of perceived goal progress by asking participants to indicate the amount of time invested in a focal goal using either a wide scale or a narrow scale. We assumed that participants would perceive greater goal progress when indicating the amount of time spent exercising in the previous week in the narrow scale (which had 60 minutes as its end point) than in the wide scale (which had 12 hours as its end point). We examined the effect of the manipulation on the instrumentality of unifinal versus multifinal means to the focal goal as indicative of the differences in the perception of means. Previous research has operationalized unifinal means by tying a single goal to a given means and multifinal means by linking two or more goals to a given means (Orehek et al. 2012; Zhang et al. 2007). Consistently, we manipulated the types of means by varying the number of goals that a given means could satisfy: one nutrition bar was described as capable of satisfying only a single goal (i.e., weight control), whereas another bar was described as instrumental for two separate goals (i.e., weight management and cognitive functioning). We expected that participants in the high progress condition would form motivational constructs more inclusively and thus would perceive multifinal means as more instrumental to the focal goal than participants in the low progress condition.

4.3.2.1 Method

Seventy-six undergraduate students (44 males; M_{age} = 21.16) were randomly assigned to two conditions (goal progress: high vs. low). We used a fitness goal as the focal goal and primed it by asking participants to state the fitness goals they were pursuing at that moment. Then, to induce different levels of perceived goal progress, we provided participants with different reference points with which they could compare their efforts devoted to their fitness goals (Fishbach and Dhar 2005). Specifically, after indicating the amount of time they had spent exercising in the previous week, participants moved to the next page and indicated the time by filling in a wide scale (i.e., 12 hours as its end point) or a narrow scale (i.e., 60 minutes as its end point) depending on the condition. If the time went beyond the end point of the scale, they were instructed to fill in the entire scale. As a manipulation check, participants rated their perceived goal progress on a 7-point scale (1 = no progress; 7 = a lot of progress).

Next, in a seemingly unrelated task, we examined the effect of goal progress on the perceived instrumentality of a unifinal and a multifinal means. Participants were given a questionnaire that was designed to capture their prerelease evaluations of two fictitious nutrition bars. One nutrition bar, named “Fit Mixed Bar,” was described as effective primarily for managing weight, and the other bar, named “Smart Mixed Bar,” was described as effective for both managing weight and facilitating cognitive functions. Participants were asked to indicate which of the two bars would be more effective for achieving their fitness goals on a 7-point scale (1 = definitely Fit Mixed Bar; 7 = definitely Smart Mixed Bar). Last, participants provided their demographic information (i.e., age and gender).

4.3.2.2 Results

Manipulation Check. The amount of time participants spent exercising in the previous week did not differ in the two conditions ($M_{high\ progress}$ = 4.01, $M_{low\ progress}$ = 3.28; F(1, 74) = .786, NS), but there was a significant difference in perceived goal progress. Confirming our manipulation, participants who specified the amount of time spent exercising in the narrow scale (60-minute endpoint) reported greater progress toward their fitness goal ($M_{high\ progress}$ = 4.13) than those who specified the time in the wide scale (12-hour endpoint) ($M_{low\ progress}$ = 2.51; F(1, 74) = 15.548, p = .000).

Instrumentality of Unifinal versus Multifinal Means. To test our hypothesis about the influence of goal progress on the perception of means, we performed a one-way analysis of variance (ANOVA). The results showed a significant difference in the relative instrumentality of the two nutrition bars in the high and low progress conditions ($M_{high\ progress}$ = 4.23, $M_{low\ progress}$ = 2.81; F(1, 74) = 9.063. p = .004; see figure A-11). As we hypothesized, participants in the high progress condition found multifinal means more instrumental toward their fitness goal than participants in the low progress condition.

4.3.2.3 Discussion

This study offers evidence of the shifts in the perception of means depending on goal progress. In accordance with our prediction, when perceiving greater progress, people tend to perceive the multifinal means as more instrumental to the focal goal. We hypothesized that goal progress would affect perceptions of means by changing the forms of motivational constructs. We examine this hypothesis in study 2.

4.3.3 Study 2: Inclusiveness of Motivational Constructs

We designed this study to demonstrate the underlying mechanism of the influence of goal progress on consumers' perceptions of means. In addition, to generalize our findings, we recruited participants from a different population group using Amazon's Mechanical Turk, an online labor market in which people or companies post job assignments for workers to choose from and submit their work online. We also employed a different way to manipulate goal progress. Following prior studies (Fishbach and Dhar 2005; Fishbach, Dhar, and Zhang 2006), we manipulated goal progress toward a fitness goal through social comparison. We predicted that a comparison with a low social standard (high progress: the majority of Americans exercise less than two days a week) would induce greater perceived goal progress than a comparison with a high social standard (the majority of Americans exercise more than five days a week). We proposed that different cognitive representations of motivational constructs underlie the impact of goal progress on the perception of means. Prior research suggests that when construing given information more abstractly, people are more likely to represent it with a few general features that convey its essence than with a few specific features or incidental details (Trope and Liberman 2003). With this premise that an abstract, higher-level construal leads to broader, more inclusive categories, previous studies have frequently used classification tasks, in which objects are classified into categories, to assess construal level (Lee, Keller, and Sternthal 2010; Liberman, Sagristano, and Trope 2002; Yan and Sengupta 2011). Similarly, to capture different cognitive representations of goals and means depending on goal progress, we asked participants to classify 30 behaviors (see appendix F for the complete list of behaviors) that could afford the

attainment of various goals. We selected the 30 behaviors by conducting a separate pretest beforehand.

4.3.3.1 Pretest for Classification Task

To find behaviors people frequently engage in to achieve various goals, we conducted a pretest. Sixty-three people (23 males; M_{age} = 28.24) from Amazon's Mechanical Turk participated for a small monetary compensation. We asked participants to provide five different behaviors that people might do to achieve each of the following five goals: health goals, financial goals, career goals, family/relationship goals, and educational/personal development goals. Ninety percent of the participants provided five behaviors for each goal, which added up to 25 behaviors for the five goals (M = 4.83 for each goal). We chose 30 behaviors that appeared frequently in participants' responses.

4.3.3.2 Method

Fifty-eight people (26 males; M_{age} = 29.21) from Amazon's Mechanical Turk participated in this study in return for a small monetary compensation. Participants were randomly assigned to two conditions (goal progress: high vs. low). Consistent with the procedure used in study 1, we first asked participants to specify their fitness goals using an open-ended question and to generate three reasons for pursuing the goals. We then manipulated goal progress. Participants were asked to report the number of days they exercised in the previous week. On the next screen, they were provided with an article on Americans' workout habits. Depending on the goal progress condition, the article reported that the majority of Americans exercised less than two days (high progress) or more than five days (low progress) a week. As a manipulation check, participants also

indicated their perceived goal progress on a 7-point scale (1= no progress; 7 = a lot of progress).

In a seemingly unrelated task, participants were asked to perform a classification task, which we designed to investigate how various behaviors are related to one another. Participants were first asked to think about what goals the presented 30 behaviors could achieve. They then were instructed to place all the behaviors that help achieve the same goal under the same group together and to label the group with a name that represents the goals that could be accomplished with those behaviors. To check possible confounding effects of involvement, participants also indicated the extent to which they invested effort in the classification task and the extent to which they were trying hard to perform the classification task on a 7-point scale (1 = not at all; 7 = very much). Finally, participants reported their demographic information (i.e., age and gender).

4.3.3.3 Results

Manipulation Check. Participants exercised two days (M = 2.31, SD = 1.875), on average, in the previous week, and the number of days they exercised did not vary significantly in the high and low progress conditions ($M_{high\ progress}$ = 2.24, $M_{low\ progress}$ = 2.38; F(1, 56) = .077, NS). As evidence of the success of our manipulation, however, participants in the high progress condition (i.e., low social standard) reported greater progress toward their fitness goals than participants in the low progress condition (i.e., high social standard) ($M_{high\ progress}$ = 4.52, $M_{low\ progress}$ = 3.28; F(1, 56) = 8.748, p = .005, η_p^2 = .135).

Number of Goals. To test our hypothesis that greater progress allows people to represent motivational constructs more inclusively, we compared the number of groups

(i.e., goals) participants used to classify the 30 behaviors that could achieve various goals (e.g., health goals, financial goals, career goals). An ANOVA with the number of groups as the dependent measure elicited a significant effect of goal progress. Consistent with our prediction, participants in the high progress condition classified the behaviors in more inclusive ways using a smaller number of groups ($M_{high\ progress} = 3.31$) than participants in the low progress condition ($M_{low\ progress} = 3.90$; $F(1, 56) = 6.505$, $p = .014$, $\eta_p^2 = .104$; see figure A-12).

To rule out possible confounding effects, we measured participants' involvement in the classification task. An ANOVA revealed that the level of involvement (Cronbach's Alpha for involvement measures = .862) did not significantly differ in the two conditions ($M_{high\ progress} = 5.64$, $M_{low\ progress} = 6.09$; $F(1, 56) = 1.321$, NS).

4.3.3.4 Discussion

We hypothesized that goal progress would lead to more or less inclusive representations of motivational constructs and that, in turn, the different representations would affect the perception of means. Study 2 tested the underlying mechanism by examining the number of goals people used to classify means for the attainment of various goals. We assumed that if they structured goals more inclusively, they would classify means using fewer goals. Conversely, if they structured goals less inclusively, they would use more goals to classify all the means. As we expected, the results showed that participants in the high progress condition used significantly fewer goals to classify means than participants in the low progress condition. In study 3, we further test our proposed underlying mechanism by examining how goal progress influences the shared

means of two seemingly independent goals and investigating the influence of goal progress on preference for unifinal versus multifinal means.

4.3.4 Study 3: Preference for Unifinal versus Multifinal Means

We designed study 3 to investigate the influence of goal progress on cognitive representations of motivational constructs as well as perceptions of and preferences for means. To provide additional evidence of different representations of motivational constructs depending on goal progress, this study examined the shared means of two goals. After manipulating goal progress toward a fitness goal, we provided participants with 25 cards on which various behaviors were written (see appendix G for the complete list of behaviors). Participants were further instructed to sort the cards depending on the goal(s) each behavior written on a card could achieve, a fitness goal, an academic goal, or both. In line with previous research (Förster 2009), we predicted that if people structure goals more abstractly, they will focus on similarities between them and thus find more means that can serve both goals. Conversely, if they structure goals more concretely, they will focus on dissimilarities between the goals and thus be less likely to find means that can serve both of them. We also examined participants' preferences for and instrumentality of unifinal versus multifinal means. Using the same two nutrition bars as in study 1, we asked participants to rate their relative preference for and instrumentality of the bars. We anticipated that greater goal progress would increase preferences for and perceived instrumentality of multifinal means.

4.3.4.1 Method

Eighty-seven undergraduate students (47 males; M_{age} = 21.12) participated in this study as a partial fulfillment of a class requirement and were randomly assigned to one of the two conditions (goal progress: high vs. low). On arrival, participants first practiced a card classification task. We provided participants with 12 cards on which various behaviors were written (see appendix G). They were then asked to sort the cards into groups by placing all behaviors that help achieve the same goal below each other on a table. To indicate the goals that could be accomplished by a set of behaviors, participants were provided with three sticky notes specifying goals (i.e., career goals, family/relationship goals, and both career and family/relationship goals) and instructed to place an appropriate note above the first card of each group.

When participants completed the practice phase, the experimental phase of the study began. Because our goal was to assess cognitive representations of motivational constructs based on the shared means of two goals, we made both goals salient. We asked participants to specify their fitness and academic goals as well as the reasons for pursuing each goal. Following the same procedure as in study 1, we then manipulated progress toward a fitness goal. Participants reported the amount of time spent exercising in the past week and then indicated the time in a wide or a narrow scale with different end points. Participants also rated their perceived goal progress on a 7-point scale (1 = no progress; 7 = a lot of progress). As in the first card classification task, participants were given a set of cards on which 25 behaviors were specified. Participants sorted the cards into groups and indicated each group by using three sticky notes (a fitness goal, an academic goal, and both fitness and academic goals).

To examine whether perceptions of and preferences for means depend on goal progress, we provided participants with another questionnaire designed to measure consumers' product evaluations. Participants were shown two nutrition bars that were either primarily effective for weight management (i.e., Fit Mixed Bar) or effective for both weight management and cognitive functions (i.e., Smart Mixed Bar). After reading the descriptions of the two nutrition bars, participants reported their preference for the two nutrition bars on a 7-point scale (1 = strongly prefer Fit Mixed Bar; 7 = strongly prefer Smart Mixed Bar). Then, similar to study 1, participants indicated the effectiveness of the two bars for achieving their fitness goals (1 = definitely Fit Mixed Bar; 7 = definitely Smart Mixed Bar).

Finally, we reasoned that goal importance would affect our results. For example, people may focus on important goals regardless of goal progress. Thus, goal progress may not have the expected impact on goal structures and perceptions of means. To test this possibility, we measured the importance of the two goals and participants' diet status at the time of the experiment. Participants rated the importance of fitness and academic goals on 7-point scales (1 = not at all important; 7 = very important) and then reported their diet status using a dichotomous variable (yes or no). Last, participants provided their demographic information (i.e., age and gender).

4.3.4.2 Results

Manipulation Check. On average, the participants reported that they spent approximately four hours exercising in the past week. In support of our manipulation, whereas the number of hours participants spent exercising did not vary in the two conditions ($M_{high\ progress} = 4.54$, $M_{low\ progress} = 4.25$; $F(1, 83) = .173$, NS), participants in

the high progress condition reported greater goal progress ($M_{high\ progress}$ = = 4.63) than participants in the low progress condition ($M_{low\ progress}$ = 3.41; F(1, 83) = 9.049, p = .003, η_p^2 = .098).

Number of Multifinal Means. As Förster (2009) suggested, we assumed that the more inclusive representations of motivational constructs are, the more similarities people would find between given goals. Thus, we expected participants in the high progress condition to find more multifinal means than participants in the low progress condition. Consistent with our prediction, participants in the high progress condition identified a larger number of means that could serve both fitness and academic goals ($M_{high\ progress}$ = 6.90, $M_{low\ progress}$ = 5.80; F(1, 83) = 5.950, p = .017, η_p^2 = .067; see figure A-13). This result indicates that greater progress leads people to identify greater similarities between goals, indicating more inclusive representations of motivational constructs.

Preference for Unifinal versus Multifinal Means. This study investigated whether the effect of goal progress can further affect preferences for means. Consistent with our findings regarding the instrumentality of means in study 1, participants in the high progress condition ($M_{high\ progress}$ = 4.83) preferred multifinal means more than participants in the low progress condition ($M_{low\ progress}$ = 4.05; F(1, 83) = 4.711, p = .033, η_p^2 = .054; see figure A-14). This indicates that as people perceive greater progress, they are more likely to choose multifinal means than unifinal means.

Instrumentality of Unifinal versus Multifinal Means. We performed an ANOVA to examine the influence of goal progress on the instrumentality of means. The results revealed a significant difference in the relative instrumentality of the two nutrition bars in

the high and low progress conditions ($M_{high\ progress}$ = 3.80, $M_{low\ progress}$ = 3.05; F(1, 83) = 4.830, p = .031, η_p^2 = .055; see figure A-15). Consistent with the findings in study 1, the instrumentality shifted toward multifinal means in the high progress condition compared with the low progress condition. Thus, this study replicated the findings of study 1.

4.3.4.3 Discussion

Study 3 provides additional evidence for our hypotheses. Consistent with our prediction that mental representations of motivational constructs underlie the influence of goal progress on the perception of means, we found a greater number of shared means between two goals in the high progress condition than in the low progress condition. In addition, the larger number of multifinal means in the high (vs. low) progress condition can be interpreted such that people are more likely to recognize greater potential of a given means as they perceive more progress. For example, when perceiving greater goal progress, they may find that engaging in physical exercise can satisfy not only a fitness goal but also an academic goal by improving cognitive functions. However, when perceiving lower progress toward a fitness goal, they may find that performing physical exercises is effective only for a fitness goal.

We also assessed how the importance of the fitness and academic goals affected our results. A repeated measures ANOVA on the importance of the two goals with goal types as a within-subjects factor and goal progress as a between-subject factor showed that participants perceived academic goals ($M_{high\ progress}$ = 6.56, $M_{low\ progress}$ = 6.32) as more important than fitness goals ($M_{high\ progress}$ = 5.71, $M_{low\ progress}$ = 5.20; F(1, 83) = 31.629, p = .000, η_p^2 = .276). However, the types of goals did not interact with the goal progress conditions (F(1, 83) = .552, NS), indicating that, in general, the participants

considered academic goals more important than fitness goals regardless of their progress toward fitness goals. We further conducted regression analyses with goal progress, importance of fitness goals, and their interaction term as independent variables. We found that the effects of goal progress on the number of multifinal means (β = .936, SE = .447; p = .040), preference (β = .902, SE = .359; p = .014), and instrumentality (β = .816, SE = .350; p = .022) remained significant. In addition, the main effect of importance of fitness goals was significant for the number of multifinal means (β = .341, SE = .143; p = .020) and preference (β = –.235, SE = .115; p = .044), implying that greater importance of a focal goal tends to increase the number of multifinal means but to decrease preferences for multifinal means. However, the goal progress × importance of fitness goals interaction was not significant for any of the dependent measures (all $p > .05$), which is inconsistent with the speculation that goal importance affects the relationship between goal progress and perception of means. We investigated this further by comparing responses from participants who were on a diet with participants who were not on a diet at the time of the experiment. Regression analyses with goal progress, diet status, and their interaction term as independent variables revealed only a significant main effect of goal progress on the three dependent measures (all $p < .05$). Again, the lack of a significant interaction term is inconsistent with the speculation that importance (as measured by diet status) affects the relationship between goal progress and perception of means.

4.4 General Discussion

People frequently monitor their progress toward their goals in the process of goal pursuit (Huang and Zhang 2011). This article shows how goal progress influences perceptions of and preferences for unifinal versus multifinal means. The dilution model (Zhang et al. 2007) suggests that increasing the number of goals linked to a given means undermines the perceived instrumentality of the attainment of each individual goal and thus decreases preferences for multifinal means. However, our findings illustrate that the dilution effect of multifinal means is likely to diminish as people perceive greater progress. Across two studies, we showed that people tend to perceive greater instrumentality of multifinal means and thus prefer them to unifinal means as they perceive greater goal progress.

This article also empirically shows malleable mental representations of motivational constructs depending on goal progress. Although previous research has proposed that the interconnections of goals and means have flexible structures (Kruglanski et al. 2002), little research has provided empirical evidence (Pieters, Baumgartner, and Alien 1995). In contrast, this article reveals that cognitive representations of goals and means change depending on goal progress. Our results suggest that greater goal progress allows people to form motivational constructs in a more abstract, inclusive manner, which in turn affects their perceptions of and preferences for means. Taken together, these findings add to the literature on goals by empirically testing the role of goal progress in cognitive representations of goals and means and people's evaluations of means.

The findings presented herein are consistent with those of previous research on the relationship between goal progress and subsequent goal-related behavior. Fishbach and Dhar (2005) showed that greater goal progress liberates people to disengage from a focal goal and to pursue inconsistent goals. Because people generally perceive pursuing one goal at the expense of another as adverse in the presence of multiple goals (Dhar and Simonson 1999), they argued that people are likely to balance multiple goals by engaging in goal-incongruent actions, especially when their progress toward the focal goal is satisfactory. The current article proposed and showed that greater goal progress leads to more inclusive representations of motivational constructs. We expect that these inclusive representations permit people to consider alternative goals and engage in behaviors consistent with the alternative goals. Given only unifinal means in Fishbach and Dhar's (2005) study, participants tended to choose behaviors that were incongruent with the focal goal to balance multiple goals. However, in the presence of a multifinal means, we assume that our participants tended to prefer multifinal means to unifinal means as they perceived greater progress.

Our findings also suggest useful future research questions. In this study, we did not explicitly manipulate the relationship between given goals. The stimuli used in studies 1 and 3 pertained to fitness and academic goals. Although these goals can be perceived as conflicting with each other in terms of time as a resource, they may not be considered as conflicting as weight loss and eating enjoyment goals are. If goals are perceived as extremely conflicting, the proposed effect of goal progress may not hold. Thus, further research should explore boundary conditions by observing various types of goals involving different levels of goal conflict. Moreover, in study 3, we found that goal

importance is positively related to the number of multifinal means and negatively related to preference for multifinal means but that it does not interact with the goal progress manipulation. Thus, examining how goal importance affects mental representations of motivational constructs and subsequent means selection would be worthwhile.

Consumers often choose between products that satisfy a single goal (a nutrition bar effective for weight control) and products that satisfy multiple goals (a nutrition bar effective for both weight control and mental acuity). Because single products can serve multiple functions, marketers need to decide whether to position their product as a means to satisfy a single goal or multiple goals. This study provides some guidance to help marketers employ appropriate marketing strategies. Our findings illustrate that people perceive the instrumentality of means differently depending on their goal progress. As people perceive more progress, they are more likely to perceive the value of multifinal means and thus prefer them to unifinal means. According to these findings, when targeting customers who have made sufficient progress toward product-related goals, marketers should emphasize the various benefits their products offer. In addition, given product features, marketers can use our findings to determine their target customers. For example, financial companies should promote credit cards that offer rewards or rebates based on credit card usage to those who have made sufficient progress toward their financial goals. For customers who have not made such progress, companies should instead promote credit cards with low interest rates, which primarily satisfy financial security needs.

CHAPTER V

GENERAL DISCUSSION

5.1 Summary of Findings

The three essays in this dissertation investigated the influence of goal progress on information processing and subsequent goal pursuit. To explain the motivational impact of abstract versus concrete goal construal under different levels of goal progress, essay 1 examined (1) how goal progress affects construal levels and (2) how fit between goal progress and goal construal influences subsequent self-regulation. Essay 2 extended the relationship between goal progress and construal level by examining the persuasive influence of fit between goal progress and the construal level of message framing. Last, essay 3 investigated the influence of goal progress on the cognitive representations of motivational constructs (i.e., goals and means) and evaluations of unifinal versus multifinal means.

In essay 1, I proposed that greater perceived goal progress would lead to higher levels of construal than lesser perceived goal progress. On the basis of this relationship, I further predicted that the correspondence between goal progress and the level at which people consider their goal pursuit would foster engagement, which in turn would affect subsequent self-regulation. In studies 1 and 2, I found that greater goal progress led to higher levels of construal using multiple measures of construal level. In study 2, I further found that goal progress drew people's attention to different aspects of goal pursuit (i.e., “why” vs. “how”). In studies 3 - 4, I examined the motivational impact of fit between goal progress and goal construal across various domains of self-regulation. I found that considering goal pursuit in a manner that fit one's level of goal progress led people to

engage in goal-congruent activities. In study 4, I further examined the process underlying the fit effect. I found that the motivational impact of fit on subsequent self-regulation was mediated by motivational engagement.

Essay 2 investigated the persuasive influence of a correspondence between goal progress and the level at which messages are construed. I found that when people perceived greater progress, messages framed in an abstract construal exerted greater persuasive influence than messages framed in a concrete construal. Conversely, when people perceive lesser progress, messages framed in a concrete construal yielded greater persuasion than messages framed in an abstract construal. In studies 2 and 3, I also showed that people felt it was easier to process information in a message when the construal level of the message corresponded to their goal progress than when it did not. Importantly, study 3 revealed that messages that fit individuals' goal progress had an impact on actual behavior.

In essay 3, I proposed that greater goal progress would lead to more inclusive structures of goals and, in turn, affect the perceptions of multifinal versus unifinal means. Supporting this hypothesis, studies 1 and 3 revealed that as people perceived greater progress, they were likely to perceive greater effectiveness of multifinal means and thus preferred them to unifinal means. In studies 2 and 3, I examined the underlying mechanism of the impact of goal progress on perceptions of means. I predicted that people would perceive greater instrumentality of multifinal means as they structure goals more inclusively and thus sense a greater compatibility between goals. Supporting this prediction, results showed that people tended to structure goals and means more inclusively as they perceived greater progress.

5.2 Theoretical Contributions

This dissertation contributes to the exiting literature in several ways. Research based on control theory suggests that lower progress induces greater motivation (Carver and Scheier 1982, 1990; Cheema and Bagchi 2011), whereas other research indicates that both low and high progress decrease motivation (Atkinson 1957; Louro et al. 2007). Essay 1 adds to this line of research by demonstrating that goal progress can lead to either increased or decreased motivation depending on the level at which people consider their goal pursuit. Consistent with control theory, low progress can increase motivation when people consider specific ways or steps required to pursue their goals rather than more abstract, larger meanings of pursuing the goals. In contrast, high progress can yield greater motivation when people pay attention to global meanings of goal pursuit rather than specific steps required for goal pursuit.

Regulatory engagement theory (Higgins 2006) posits that the use of a proper way or means to pursue goals increase the value of the goals by intensifying people's engagement in the goals (Higgins et al. 2008). In line with regulatory engagement theory, essay 1 shows that the experience of engagement mediates the influence of fit between goal progress and goal construal on self-regulation. A substantial amount of research has investigated conditions that lead people to engage in or disengage from their goals (Fishbach and Dhar 2005; Fishbach et al. 2006; Fishbach and Zhang 2008; Louro et al. 2007), but relatively little research has shown how to best motivate people in the process of goal pursuit. In this sense, by answering the question of how to best motivate people, the findings of essay 1 offer implications for consumer welfare. Consistently, essay 2 provides practical implications for marketers and policy makers by showing that message

framing that fits people's goal progress exerts greater persuasive influence than message framing that does not fit.

Prior research suggests that increasing the number of goals linked to a given means undermines the perceived instrumentality of the attainment of each individual goal (Zhang et al. 2007). Because people perceive means to be less instrumental as the number of goals linked to the means increases, they tend to prefer unifinal means (means that satisfy a single goal) than multifinal means (means that satisfy multiple goals). Other research, on the other hand, indicates that multifinal means can be preferred to unifinal means because they have a potential to generate greater overall value by serving several goals simultaneously (Chun et al. 2011; Kopetz et al. 2012). Little research has been conducted to examine the factors that affect this trade-off between instrumentality and value of means. Essay 3 fills in this gap in the existing literature by showing that greater goal progress increases the perceived instrumentality of and preferences for multifinal means versus unifinal means than lesser goal progress.

5.3 Practical Implications

The present research offers several practical implications. First, the findings in essay 1 provide implications for consumer welfare. I showed that thinking of goal pursuit in an appropriate manner influenced individuals' motivation and subsequent self-regulation. Specifically, according to the findings, considering larger meanings of goal pursuit rather than specific steps required to pursue a goal is more likely to elevate motivation and promote self-regulation as people perceive greater progress. Thus, this finding suggests better ways to motivate people depending on their goal progress.

Government agencies and companies spend a tremendous amount of money to promote consumers' goals, such as retirement savings or weight loss. Considering these expenses and efforts to help consumers pursue goals, essay 2 offers important implications for policy makers as well as markers. The findings in essay 2 indicate that policy makers and marketers should frame messages in a way that fits individuals' goal progress. Specifically, according to the findings, if the target audience of a message has made sufficient progress, the message should emphasis abstract aspects of goal pursuit. Conversely, if the target audience of a message has not made sufficient progress, the message should focus on concrete aspects of goal pursuit.

Last, the findings in essay 3 offer guidance on how to effectively communicate with consumers and market their products. When products have potential to satisfy multiple goals, marketers may wonder whether they have to focus on a single goal or multiple goals in their communication with consumers. The results in essay 1 suggest that consumers are more likely to appreciate the value of products that satisfy multiple goals as they perceive greater goal progress. Thus, if marketers target consumers who have made little progress, they should emphasize the single, most important goal that can be achieved by their product. Conversely, when targeting consumers who have made sufficient progress, marketers may want to include various goals in their communication with consumers.

5.4 Directions for Future Research

This dissertation offers several directions for future research. Study 3 of essay 2 demonstrates the persuasive influence of fit. I found that as people perceive greater progress, an abstract (vs. concrete) message framing were more likely to increase people's

participation in a program designed to promote healthful eating. However, I measured perceived motivation or behavioral intention in most studies. Therefore, investigating the impact of fit on actual behavior in various domains of self-regulation would enhance the significance of the present research.

Related to this, I mostly used laboratory experiments to test hypotheses except for study 1 in essay 2. Although laboratory experiments assure greater internal validity than field studies, they have less external validity. In order to enhance the external validity of the findings, conducting field studies would be desirable.

APPENDIX A

FIGURES

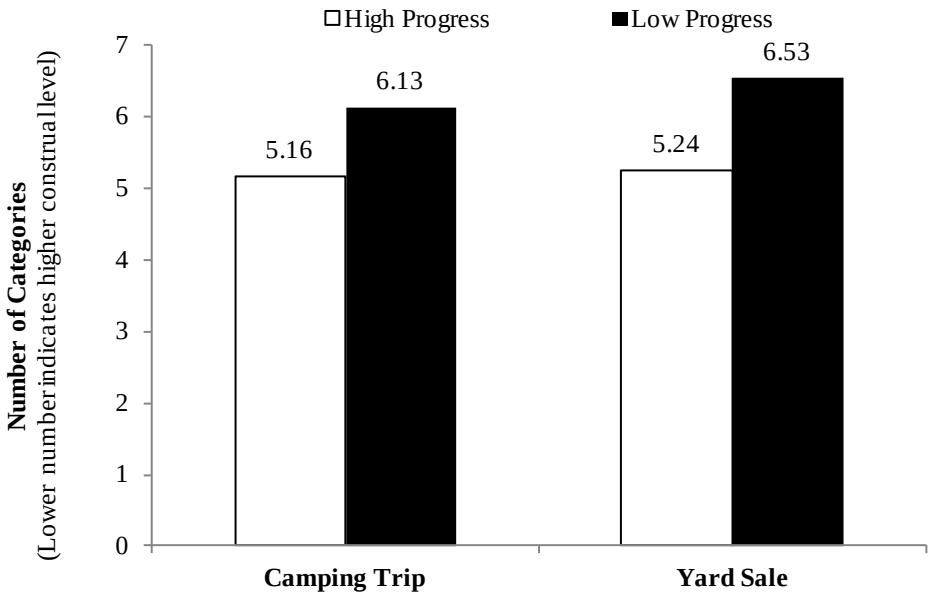


Figure A-1. The Influence of Goal Progress on Construal Level (Study 1 in Essay 1)

Note: A larger number of categories in the high (vs. low) progress condition suggests that greater goal progress leads to higher-level construals.

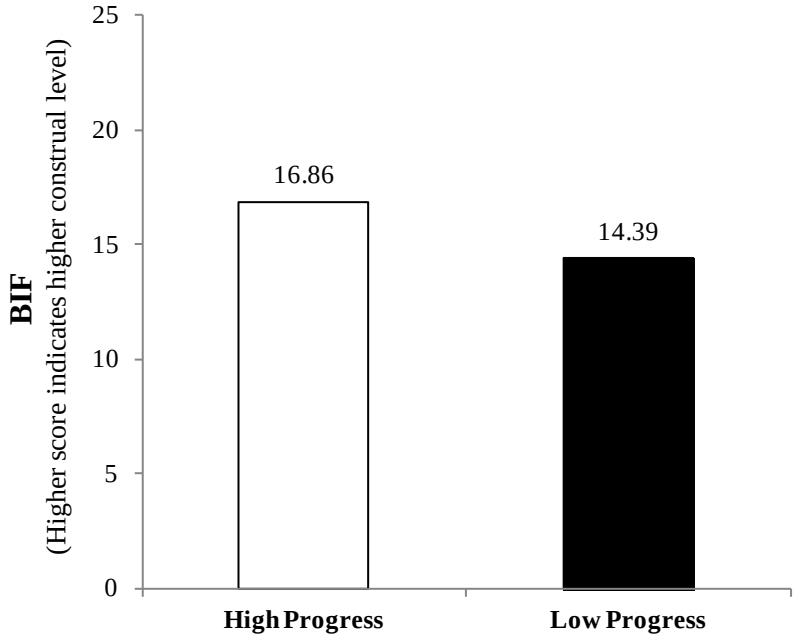


Figure A-2. The Influence of Goal Progress on Construal Level (Study 2 in Essay 1)

Note: A higher BIF score in the high (vs. low) progress condition indicates that greater goal progress leads to higher-level construals.

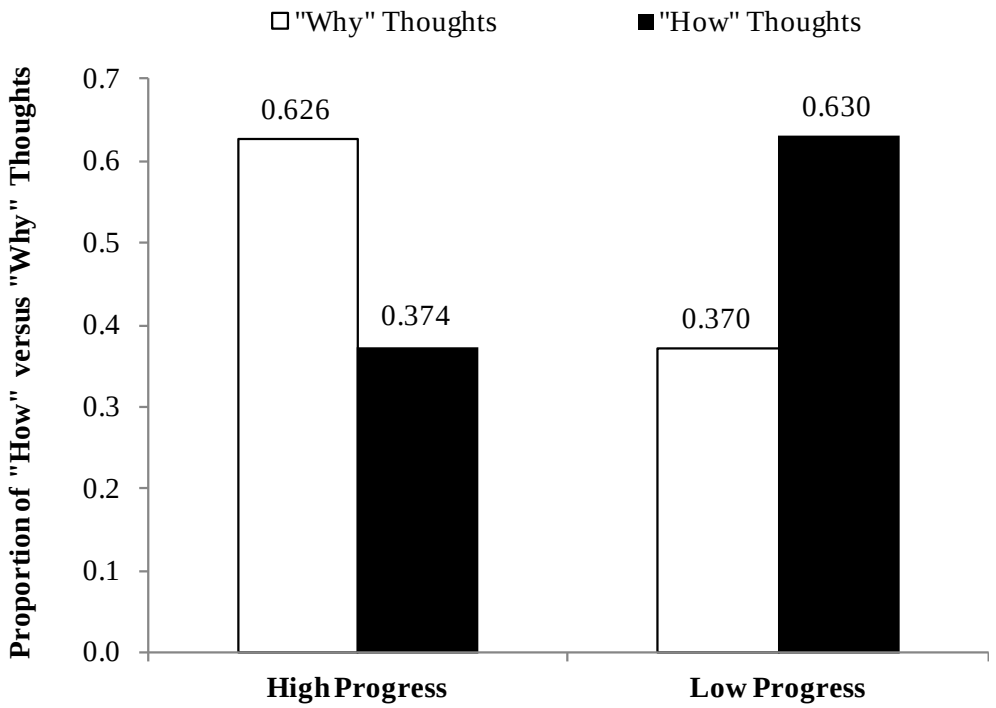


Figure A-3. The Influence of Goal Progress on “How” versus “Why” Thoughts (Study 2 in Essay 1)

Note: As people perceived greater progress, they tended to generate a larger proportion of “why” thoughts than “how” thoughts. This suggests that greater goal progress tends to shift people's attention to abstract aspects rather than concrete aspects of goal pursuit.

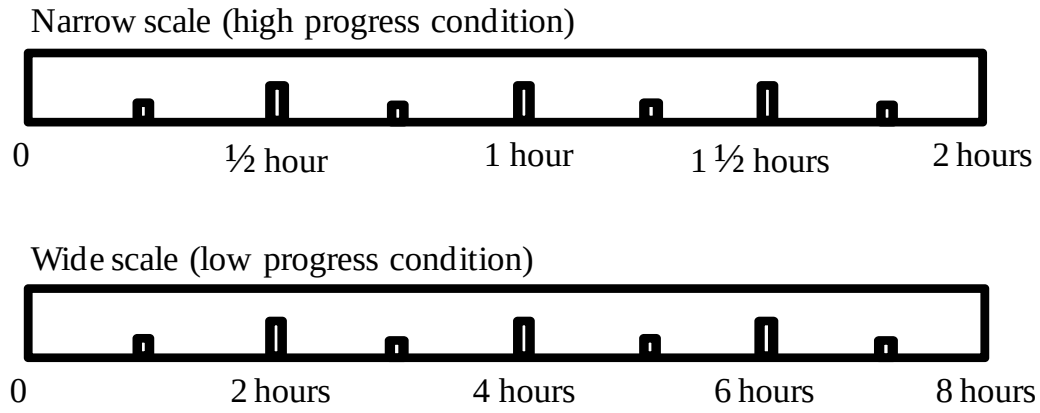


Figure A-4. Examples of Progress Feedback (Study 3 in Essay 1)

Note: Although the discrepancy between the current weight and ideal weight is the same on both scales, it will be perceived as smaller on the wide scale than on the narrow scale.

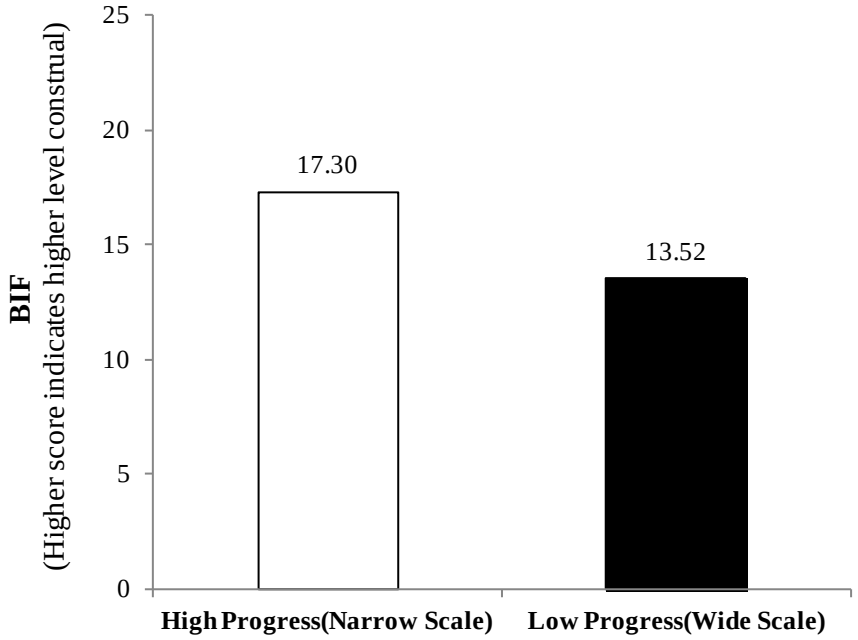


Figure A-5. The Influence of Goal Progress on Construal Level (Study 3 in Essay 1)

Note: A higher BIF score in the high (vs. low) progress condition suggests that greater goal progress leads to a higher-level construal.

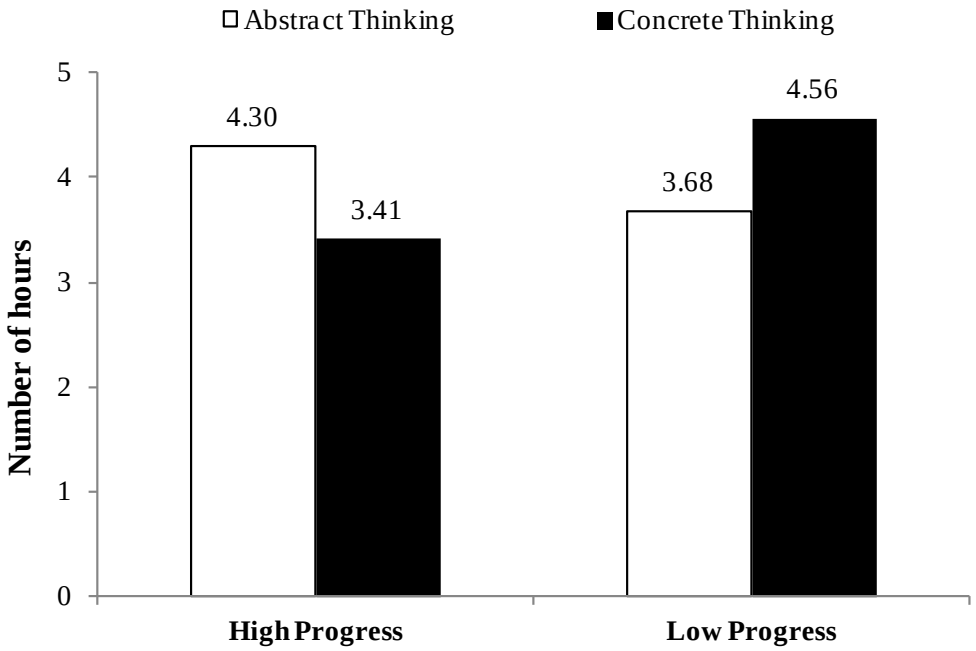


Figure A-6. The Influence of Fit between Goal Progress and Goal Construal on the Pursuit of Academic Goals (Study 3 in Essay 1)

Note: Participants in the high progress condition planned to spend more time studying after abstract (vs. concrete) thinking about their academic goals. Conversely, participants in the low progress condition planned to spend more time after concrete (vs. abstract) thinking. This result supports the motivational influence of fit between goal progress and goal construal.

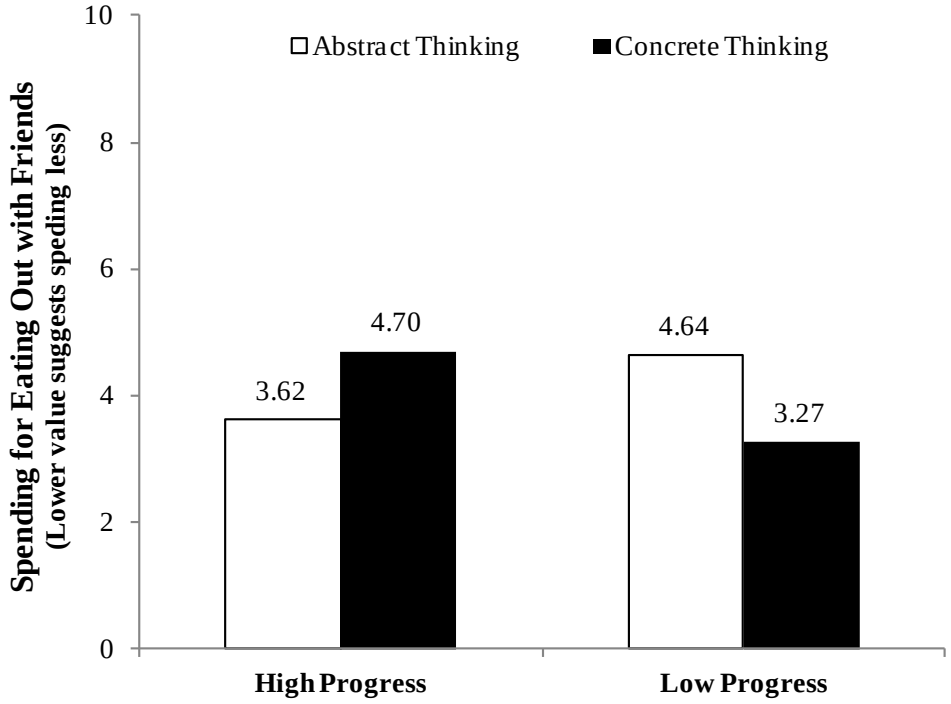


Figure A-7. The Influence of Fit between Goal Progress and Goal Construal on the Pursuit of Money Management Goals (Study 4 in Essay 1)

Note: Participants in the high progress condition intended to spend less eating out with friends when they thought about their pursuit of money management goals in an abstract terms rather than in a concrete terms, whereas participants in the low progress condition planned to spend less eating out when they construed their goal pursuit in a concrete manner rather than in an abstract manner. This result provides additional support for the motivational effect of fit between goal progress and goal construal.

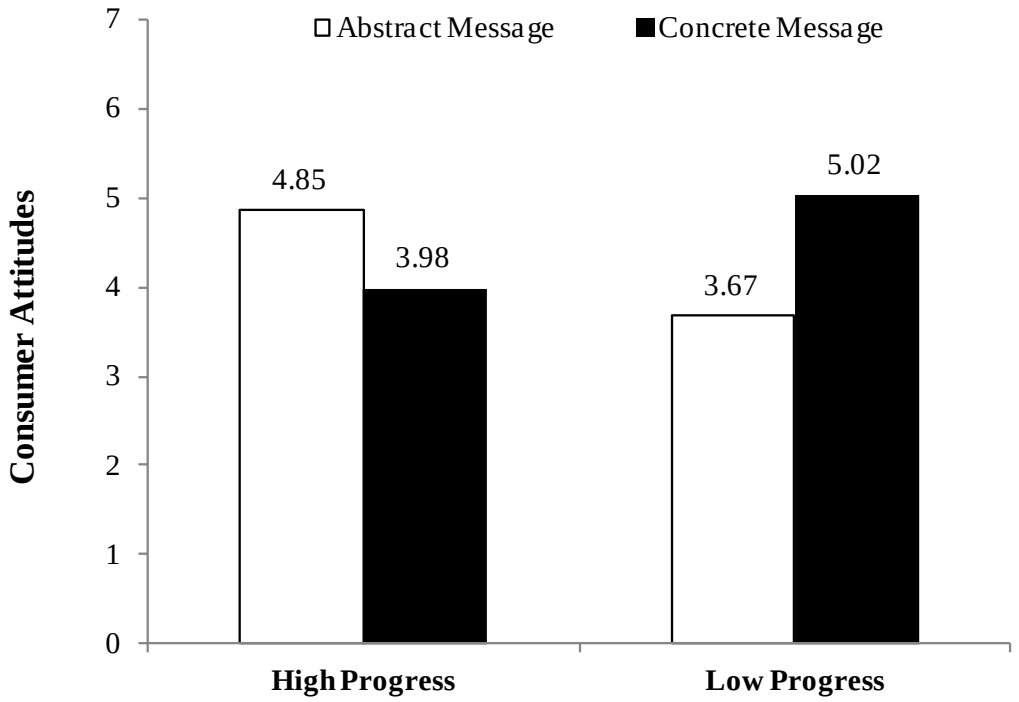


Figure A-8. The Influence of Fit between Goal Progress and the Construal Level of Message Framing on Consumer Attitudes (Study 1 in Essay 2)

Note: Participants in the low progress condition evaluated a product more favorably when they were exposed to an advertisement framed in a concrete construal rather than in an abstract construal. In contrast, participants in the high progress condition evaluated the product more favorably when they were provided with an abstract construal advertisement rather than a concrete construal advertisement. This suggests that fit between goal progress and the construal level of messages exerts greater persuasive influence than nonfit.

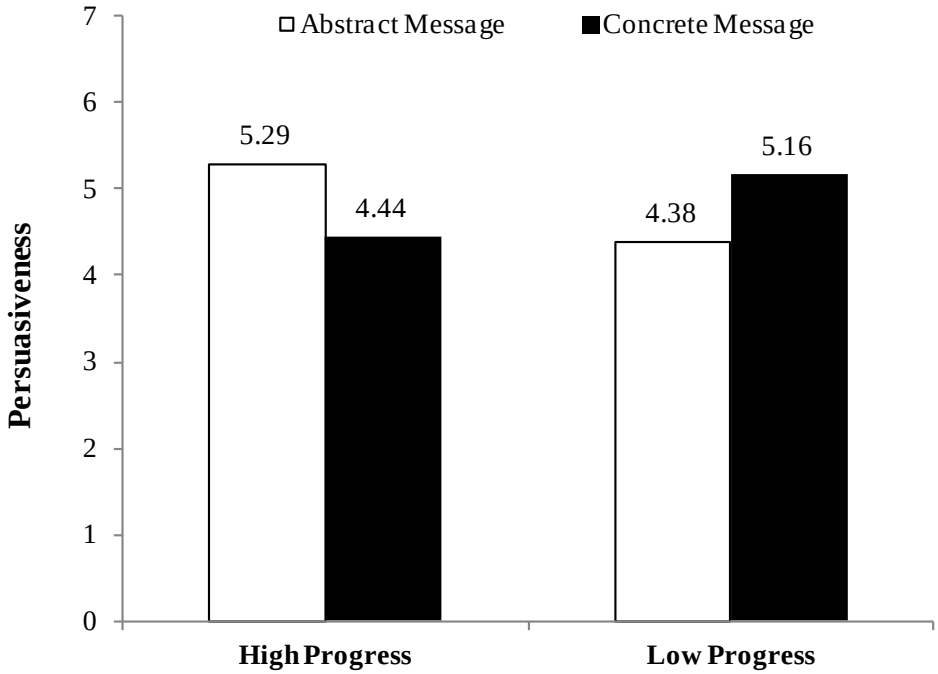


Figure A-9. The Effect of Fit between Goal Progress and the Construal Level of Message Framing on Persuasion (Study 2 in Essay 2)

Note: Participants in the high progress condition considered a campaign message more persuasive when it was framed in an abstract rather than a concrete construal, whereas those in the low progress condition considered the message more persuasive when it was framed in a concrete rather than an abstract construal. This result provides support for the persuasive impacts of fit between goal progress and construal level.

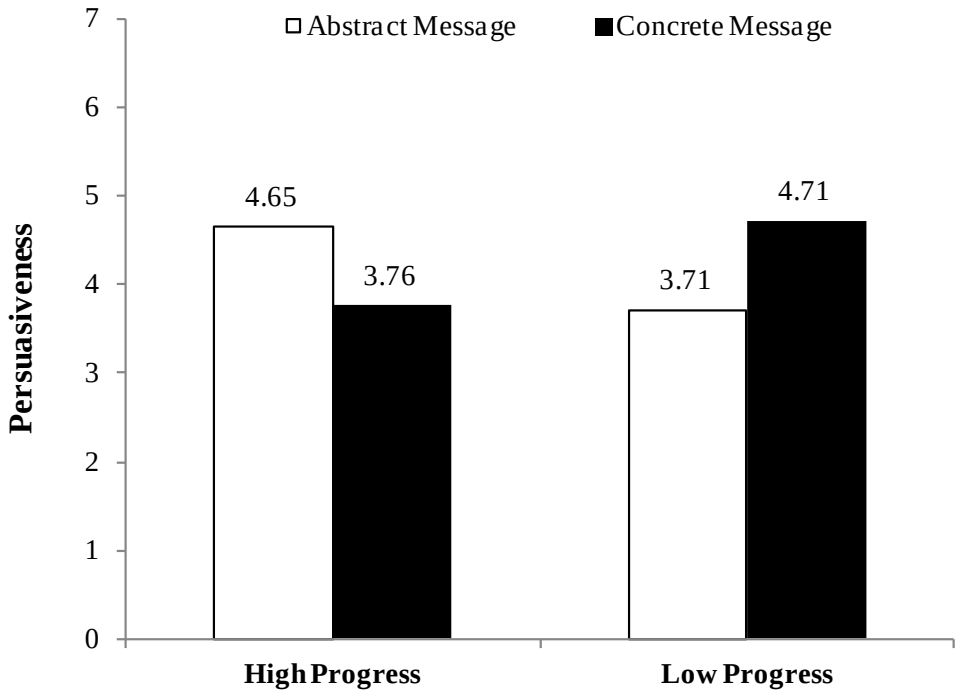


Figure A-10. The Influence of Fit between Goal Progress and the Construal Level of Message Framing on Persuasion (Study 3 in Essay 2)

Note: Participants in the high progress conditions considered a campaign message more persuasive when it was framed in an abstract rather than in a concrete construal, whereas those in the low progress conditions viewed the message as more persuasive when it was framed in a concrete rather than in an abstract construal. This result provides additional support for the persuasive influence of fit between goal progress and construal level.

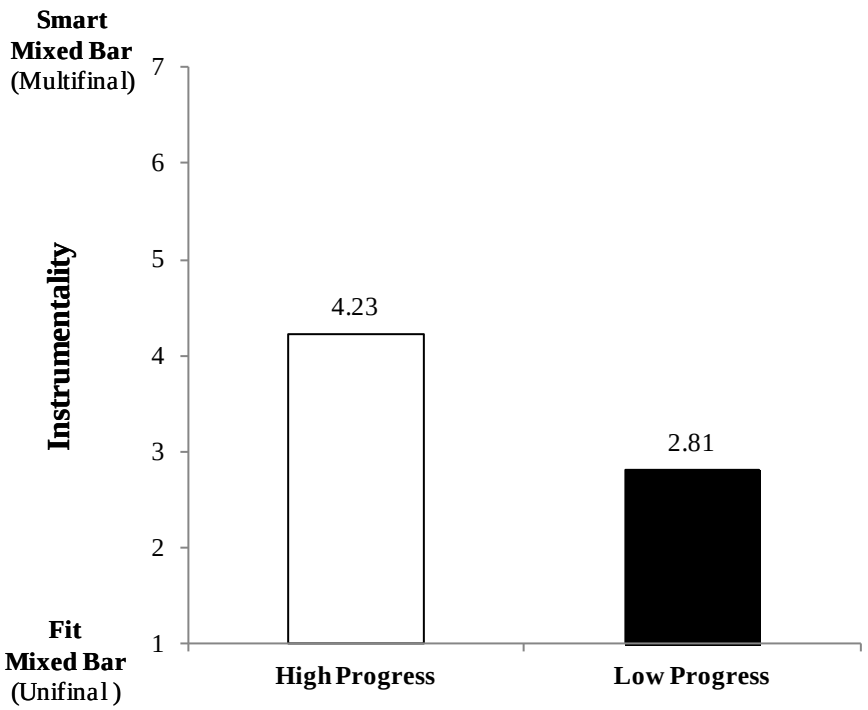


Figure A-11. The Influence of Goal Progress on the Instrumentality of Means (Study 1 in Essay 3)

Note: Participants in the high progress condition considered multifinal means more instrumental toward their goals than participants in the low progress condition. This suggests that people tend to perceive multifinal means as more instrumental to attaining a goal as they perceive greater goal progress.

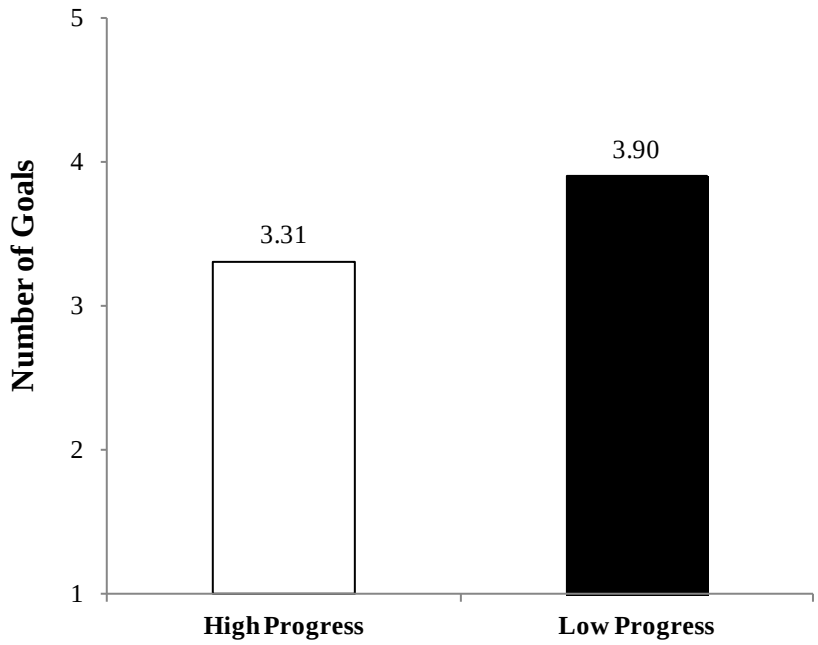


Figure A-12. The Influence of Goal Progress on the Number of Goals (Study 2 in Essay 3)

Note: Participants in the high progress condition classified behaviors in more inclusive ways using a smaller number of groups than participants in the low progress condition. This result indicates that greater progress allows people to represent motivational constructs more inclusively.

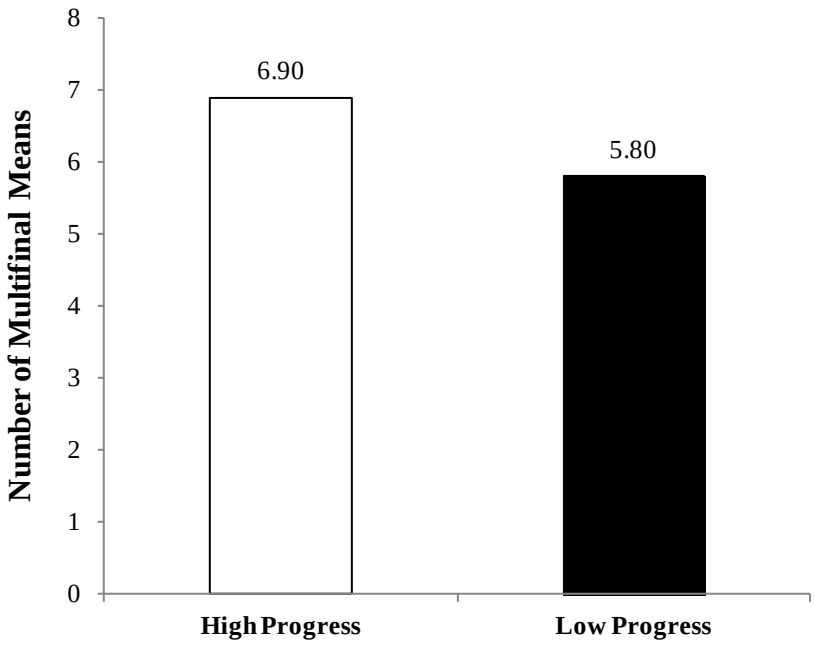


Figure A-13. The Influence of Goal Progress on the Number of Multifinal Means (Study 3 in Essay 3)

Note: Participants in the high progress condition identified a larger number of means that could serve multiple goals than participants in the low progress condition. This supports our hypothesis that greater progress leads people to represent motivational constructs more inclusively.

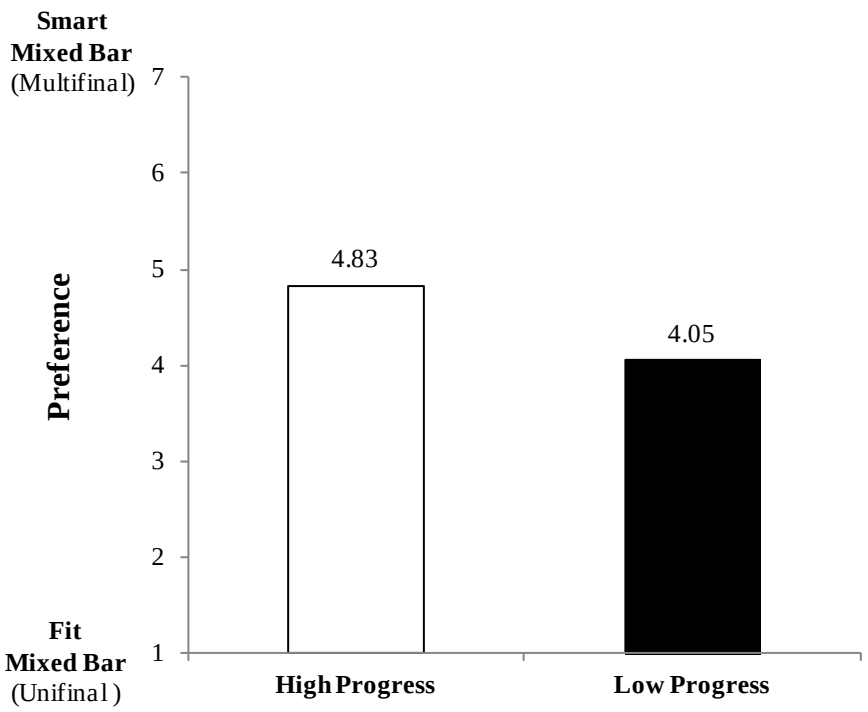


Figure A-14. The Influence of Goal Progress on Preference for Unifinal versus Multifinal Means (Study 3 in Essay 3)

Note: Participants in the high progress condition preferred multifinal means more than participants in the low progress condition. This indicates that as people perceive greater progress, they are more likely to choose multifinal means than unifinal means.

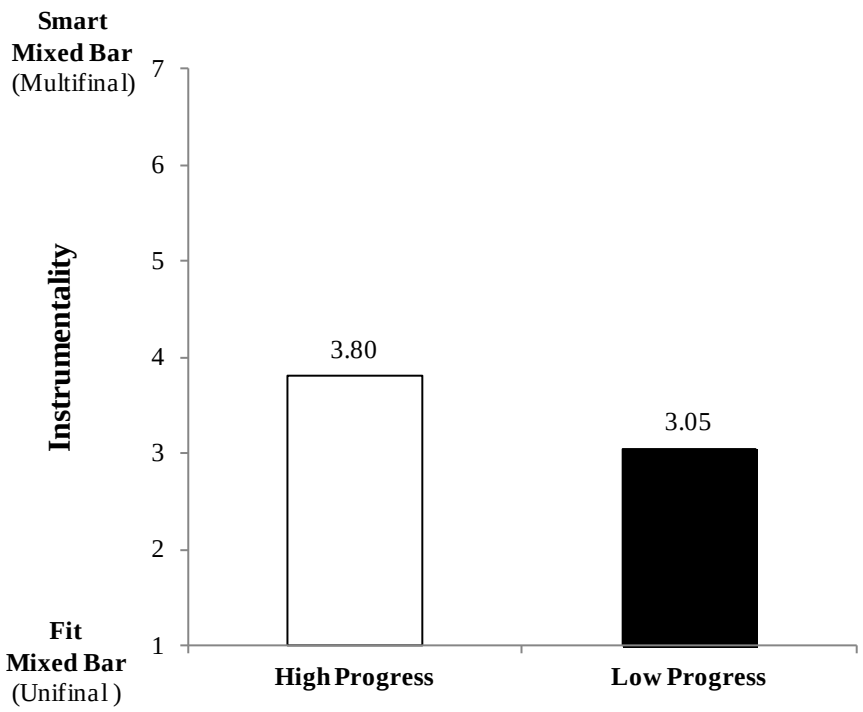


Figure A-15. The Influence of Goal Progress on the Instrumentality of Means (Study 3 in Essay 3)

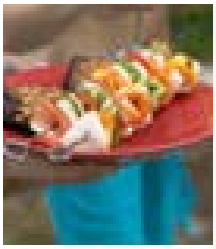
Note: The instrumentality shifted toward multifinal means in the high progress condition compared with the low progress condition. This suggests that people tend to perceive greater instrumentality of multifinal (vs. unifinal) means as they perceive greater goal progress.

APPENDIX B

MESSAGES USED BY NON-PROFIT ORGANIZATIONS

A Message Framed in an Abstract Construal

American Heart Association.
Learn and Live



Health Diet Goals

A healthy diet and lifestyle are your best weapons in the fight against heart disease. Use our guidelines to make smart choices to benefit your heart and your overall health.

Retrieved from:
http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition-Center_UCM_001188_SubHomePage.jsp

A Message Framed in a Concrete Construal

BRITISH Nutrition FOUNDATION

A Healthy Varied Diet

A healthy diet is likely to include a large number or variety of foods, from each of the food groups, as this allows us to get all the nutrients that we need.

Retrieved from:
http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition-Center_UCM_001188_SubHomePage.jsp

APPENDIX C

OBJECTS USED FOR THE CLASSIFICATION TASK IN STUDY 1

[Camping Trip Scenario]

brush, tent, matches, camera, soap, gloves, bathing suit, shovel, fishing pole, hat, snorkel, shirts, sweater, sneakers, coat, raft, dog, boots, marshmallows, socks, blanket, flashlight, pants, sunglasses, rifle, shoes, cigarettes, rope, hot dogs, canteen, toothbrush, underwear, beer, sleeping bag, pillow, insect repellent, potato chips, axe.

[Yard Sale Scenario]

chairs, roller blades, sweaters, crib, candy dish, fish tank, board games, blender, bikes, coats, dumbbells, infant clothes, books, coffeemaker, puzzles, plates, CDs, toaster, toys, cutlery, shoes, skis, chess set, birdcage, ties, baseball cards, picture frames, juicer, ceramic figurines, glassware, boots, dolls, clock, records, T-shirts, lamps, skateboards, paintbrushes.

APPENDIX D

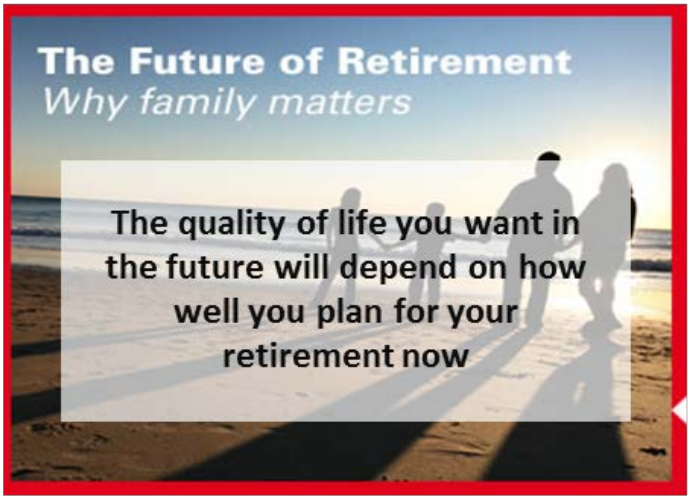
MEDIATION OF AFFECT IN STUDY 1

Following Louro et al. (2007), we combined the eight items of positive and negative emotions into a single index (i.e., the difference between positive and negative emotions; positive scores indicate net positive mood). Then, we performed a series of regression and bootstrap analyses to test the mediating role of goal-related emotions on the relationship between goal progress and construal level. We first regressed the number of categories for the camping trip scenario on goal progress (i.e., high vs. low) (β = .963, SE = .418; p = .024), then regressed the index of emotions on goal progress (β = -1.189, SE = .479; p = .015), and finally regressed the number of categories on the index of emotions. The regression analyses showed that the association between the index of emotions and the number of categories was nonsignificant (β = -.098, SE = .100; p = .328). The bootstrap analyses revealed that the mean indirect effect of emotions on the number of categories was .0469, with a 95% confidence interval including zero (-.1627 to .2760). Consistently, the index of emotions was not significantly associated with the number of categories for the yard sale scenario (β =.103, SE = .108; p = .343). Bootstrap analyses showed that the mean indirect effect of emotions on the number of categories was –.2379, with a 95% confidence interval including zero (–.5600 to .0045). These results do not provide support for the mediating role of emotions on the relationship between goal progress and construal level.

APPENDIX E

MESSAGES USED BY FINANCIAL COMPANIES

A Message Framed in an Abstract Construal



Retrieved from: http://www.hsbc.com/1/2/retirement

A Message Framed in a Concrete Construal

Retrieved from: http://www.merrilledge.com/m/pages/retirement.aspx

APPENDIX F

BEHAVIORS USED IN THE CLASSIFICATION TASK IN STUDY 2

eat more fruits and vegetables, set up a workout routine, have a part time or second job, live on a budget, reduce sugar intake, get a gym membership, buy discounted items, work extra hours, save energy, learn a new sport, eat at home, pursue further education, avoid processed foods, learn new skills, drink in moderation, watch less TV, read more books, take exercise classes, have checks autodeposited into savings, bring lunch, reduce fat intake, cut out nonessentials, talk to a financial counselor, stop smoking, read about the stock market, lift weights, take online courses, purchase exercise equipment, get a raise or bonus, meet more people

APPENDIX G

CARD CLASSIFICATION TASK IN STUDY 3

[Behaviors used in the practice card classification task]

earn a higher degree, call family more frequently, have more frequent family activities, be helpful to people, look for new jobs, work extra hours, meet more people, go on a trip with family, engage in healthy lifestyle, have a family gathering more often, take online courses, communicate better with people

[Behaviors used in the main card classification task]

join academic groups/clubs, lift weights, study daily, bring lunch to school, purchase workout equipment, take an exercise class, eat fruits and vegetables, record lectures, go to the gym, go to library more often, speak with advisor, attend seminars, watch less TV, track fitness improvements, drink in moderation, work out regularly, eat more protein, complete course requirements, get adequate rest and sleep, work out with a friend, avoid distractions (e.g., parties), do not skip classes, drink more water, read more books, reduce wasting time

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