

The Dynamics of Self-Regulation

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Goal research has documented the significant role of goals in people's choice, evaluation, and emotion (Carver & Scheier, 1998; Deci & Ryan, 1985; Fishbach & Ferguson, 2007; Gollwitzer, 1990; Higgins, 1997; Kruglanski, 1996; Locke & Latham, 1990; Mischel, Cantor, & Feldman, 1996). In recent years, the main emphasis of goal research has been on the nonconscious processes of goal pursuit (Aarts & Dijksterhuis, 2000; Chartrand & Bargh, 1996; Ferguson & Bargh, 2004; Moskowitz, 2002). This research has yielded important insights into the factors that activate a goal, how the goal influences choice of goal-related actions, the positive evaluation of goal-facilitating actions and the devaluation of goal-inhibiting actions, and how success or failure at pursuing a goal influences a person's emotional states.

In most of this prior goal research, the basic unit of study was the activation of a single goal and the initiation of a single goal-congruent action in response to the goal; that is, the focus was on the single goal - single action unit (Aarts, Gollwitzer, & Hassin, 2004; Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001; Shah & Kruglanski, 2003). Whereas a single goal - single action unit is the basic unit of observation for motivation research, it is also true that people rarely hold only one goal at a time. People often hold several accessible goals and consider the simultaneous pursuit of multiple and frequently inconsistent ones (Cantor & Langston, 1989; Emmons & King, 1988; Higgins, 1997; Kruglanski et al., 2002; Markus & Ruvolo, 1989). In addition, people often select several goal-directed actions simultaneously and with respect to one another. Prior and planned future actions can then influence a person's choice of immediate goal actions and their subjective value (Read, Loewenstein, & Rabin, 1999; Simonson, 1990). For example, walking into a restaurant can simultaneously evoke multiple goals when a person is concerned about selecting food items that are tasty, healthful, and inexpensive. In addition, people usually make successive choices from the menu (e.g., choice of an appetizer, an entrée, and a dessert), which in turn can potentially create a balance among the simultaneously activated goals, or people can emphasize one goal over the others.

When people hold several goals and have the opportunity to select several actions that unfold over time, there are two possible patterns of choice they can follow. First, their choice sequence can balance between the underlying goals. Second, their choice sequence can highlight the most important goal. In this chapter, I identify the conditions under which people find balance among several goals versus highlight a single goal across several actions. Thus, my basic unit of observation involves at least two goals and two opportunities to act on these goals, which can balance or reinforce each other. In such situations, I ask what increases the motivation to work on a focal goal—an initial failure to act on the goal, which motivates actions when people balance, or an initial goal pursuit, which motivates congruent action when people highlight.

To address these questions, my colleagues and I have conducted a program of research on “the dynamics of self-regulation” (Fishbach & Dhar, 2005; Fishbach, Dhar, & Zhang, 2006; Fishbach & Zhang, 2008; Koo & Fishbach, 2008; Zhang, Fishbach, & Dhar, 2007; see also Fitzsimons, et al., this volume). This research addresses the simultaneous pursuit of multiple goals through a sequence of actions that evolves over time and can either balance between these multiple underlying goals or highlight the single most important one. Our basic premise is that people represent goal actions in terms of either making progress or expressing commitment. As a result of these two representations of goal actions, people either balance between goals on which they experience progress or highlight goals to which they feel committed.

In what follows, I discuss this theoretical framework in greater detail. I begin by addressing the self-regulatory process in each of the two dynamics: progress-based balancing versus commitment-based highlighting. Then, I address variables that determine the specific framing of goals and the corresponding dynamics that people follow.

### The Dynamics of Self-Regulation

I proposed that people represent goal actions in terms of either progress toward a desirable end state or commitment to this end state. What, then, characterizes the process of self-regulation under each of these representations?

First, in a progress representation of goals, a person feels motivated to choose actions that reduce the discrepancy between the existing undesirable state and a desirable end state. Cybernetic models of self-regulation describe a process of self-regulation that assumes a progress representation of goals and is oriented toward reducing a discrepancy (Carver & Scheier, 1998, this volume; Locke & Latham, 1990; Miller, Galanter, & Pribram, 1960; Powers, 1973). According to these models, people consider the progress they have made toward the end state in the course of goal pursuit, and their perceived progress elicits a sense of partial goal attainment, thus signaling that less effort is needed to accomplish the goal. For example, a student studying a textbook can monitor the progress toward and the remaining effort necessary to finish the book. In turn, any progress in reading will signal that the goal has been partially attained. Notably, a similar focus on progress can also characterize ongoing goals with no clear end state—for example, when a student perceives progress toward the goal of mastering a body of knowledge (e.g., learning to speak Hebrew). When there is no clear end state, the perception of progress is not defined by a reduction of discrepancy.

Second, people can represent goal actions in terms of expressing commitment to the desirable end state. In a commitment representation of goals, a person perceives the pursuit of congruent actions as a signal that goal commitment is high. Commitment is defined as a subjective sense that the goal is valuable and that the expectancy of success is high (Atkinson, 1964; Atkinson & Raynor, 1978; Bem, 1972; Cialdini, Trost, & Newsom, 1995; Feather, 1990). This representation of goals is less concerned with the reduction of discrepancy between the current state and the desired end state; that is, this representation is less concerned with the partial attainment of the goal that is being pursued. For

example, the student studying a textbook may experience greater commitment to study the book or, in general, master the particular body of knowledge, after partially completing the book. In this situation, the student feels that the goal is more valuable and attainable following initial successful pursuit. For example, she feels that learning to speak Hebrew is an important part of her identity. The representation of goals in terms of making progress versus expressing commitment then determines the pattern of self-regulation a person follows when he or she simultaneously holds multiple goals.

### ***Progressed-Based Balancing***

In a progress representation, an initial goal-congruent action is experienced as partial attainment of the end state. As a result, a person feels justified in relaxing his or her efforts toward this particular end state and, instead, attends to other, relatively neglected goals. This pattern of self-regulation reflects balancing, a dynamic in which the pursuit of one goal motivates a person to relax his or her efforts at the next opportunity whereas failure to pursue a goal motivates a person to increase his or her efforts at the next opportunity.

As an example of balancing, consider research on variety seeking, which has documented people's tendency to switch between consumption goals (McAlister & Pessemier, 1982; Ratner, Kahn, & Kahneman, 1999), or moral licensing research (Monin & Miller, 2001), which has documented people's tendency to switch between expressing egalitarian values and relying on intuitive (stereotypical) judgments. There are further social organizations that advocate balancing as a prevailing self-regulatory principle. For example, Weight Watchers recommends a "point system" in which dieters can trade off eating and exercising (see <http://www.weightwatchers.com/plan/eat/plans.aspx>), and Catholicism, as a religious philosophy, advocates balancing between (few) sins and (much) good works.

### ***Commitment-Based Highlighting***

In a commitment representation, an initial action that is congruent with a goal is indicative of a strong commitment to that goal. Thus, it signals that the goal is valuable and the likelihood of

attainment is high. Such interpretation of commitment increases a person's motivation to take similar, complementary actions and to inhibit any competing goals (Shah, Friedman, & Kruglanski, 2003) to ensure the pursuit of the goal to which he or she is highly committed. The subsequent self-regulatory process is highlighting, a dynamic of self-regulation in which the pursuit of one action motivates a person to pursue other, congruent actions that facilitate the same goal because the person is prioritizing this particular goal over others.

Research on the goal gradient hypothesis, or the "goal-looms-larger" effect, demonstrates a pattern of highlighting, such that people allocate more efforts to a goal after experiencing some initial accomplishment (Forster, Higgins, & Idson, 1998; Forster & Liberman, this volume; Hull, 1934; Kivetz, Urminsky, & Zheng, 2006; Losco & Epstein, 1977). In addition, there are social organizations that advocate highlighting. For example, Alcoholics Anonymous ([www.alcoholics-anonymous.org](http://www.alcoholics-anonymous.org)) is an organization that advocates complete sobriety rather than establishing drinking habits that balance the amount of alcohol consumed. Similarly, Calvinism, as a religious philosophy, preaches a life of good works exclusively rather than balancing sins with the pursuit of good works.

Figure 1 summarizes our model. The representation of goals in terms of progress toward a desirable end state increases the tendency to move away from that goal after initial pursuit and to attend to competing motives through a dynamic of balancing. The representation of goals in terms of commitment to a desirable end state increases the tendency to highlight the goal by selecting congruent actions that pursue the same goal after the initial pursuit. As a result, the same action can have opposite consequences. For example, applying sunscreen decreases the likelihood of wearing a sunhat when it signals that progress has been made toward the overall goal of preventing sun damage, but the same action can increase the likelihood of wearing a sunhat when it signals greater commitment to preventing sun damage.

In addition, after failing to pursue an initial goal action, inferences of low progress increase people's interest in similar, complementary actions, whereas inferences of low commitment decrease people's interest in such actions. For example, failing to apply sunscreen increases the likelihood of wearing a sunhat when it signals low progress toward the health goal, but it decreases the likelihood of wearing a sunhat when it signals low commitment to that goal. Notably, then, a progress frame results in substitution between actions through balancing, whereas a commitment frame results in consistency between actions through highlighting.

In summary, two factors increase people's motivation to work on a goal: the perception of a lack of goal progress, which is based on lack of goal actions, and the perception of goal commitment, which is based on completed goal actions. In addition, two factors undermine people's motivation to work on a goal: the perception of low commitment, which is based on lack of goal actions, and the perception of sufficient progress, which is based on completed goal actions.

### ***Empirical Support***

Fishbach and Dhar (2005) conducted a series of studies to test whether the same action can both increase and decrease the motivation to choose another goal-congruent action, depending on whether a person infers goal commitment or goal progress. In one study, they manipulated the representation of goal actions by asking participants questions that focused their attention on the commitment to or progress toward pursuit of their goals. Participants then indicated their motivation to balance between the focal goal and another, competing goal, or highlight the focal goal across successive actions. For example, with regard to academic goals, student participants indicated whether they felt committed to academic tasks whenever they studied versus whether they believed that they made progress on their academic tasks whenever they studied. Participants who viewed their sense of commitment as a result of their actions further indicated that they would be unlikely to socialize at night (an incongruent activity with studying) given that they studied during the day, whereas those who

viewed their sense of progress as a result of their actions indicated that they would be interested in socializing at night if they studied during the day. These effects were replicated across several goal domains, such as saving money and preventing sun damage (Fishbach & Dhar, 2005, Study 3), suggesting that the focus on commitment versus progress promoted a subsequent choice of actions that highlighted the focal goal versus balanced between that goal and alternative ones.

Other studies documented the effect of planned, future goal actions on the choice of present actions as a function of the dynamic of self-regulation. Specifically, Zhang et al. (2007) hypothesized that planned actions should have a similar effect as completed actions; that is, they can either signal greater commitment or competence (Atkinson, 1964; Bandura, 1997; Taylor & Brown, 1988; Weiner, 1979), which promotes similar goal pursuits in the present, or they can signal progress and substitute for present actions (Oettingen & Mayer, 2002). Moreover, because the effect of planned actions is in direct proportion to the amount of goal pursuit considered, when people are overly optimistic and believe that they will achieve more in the future than in the past (Buehler, Griffin, & Ross, 1994; Weinstein, 1989; Zauberman & Lynch, 2005), future plans should have greater impact on immediate goal pursuits than retrospection on actual past actions.

In a study that supports these predictions, Zhang et al. (2007, Study 1) assessed gym users' interest in a healthful drink (i.e., a bottle of water) over an unhealthy drink (i.e., a can of sugared soda), after considering past versus future workouts. The researchers find that, in general, gym users are optimistic and believe that they will work out more in the future than they did during a comparable period in the past. As a result, gym users who considered their commitment to exercise based on future plans expressed more interest in a healthful drink than those who considered their commitment based on exercising habits in the past. Conversely, gym users who considered their progress based on future plans expressed less interest in a healthful drink than those who focused on their progress based on exercising in the past (see Figure 2).

### **What Determines the Dynamics of Self-Regulation?**

The previous section identified two dynamics of self-regulation: commitment-based balancing and progress-based highlighting. In these dynamics, people make present choices to pursue a goal on the basis of either past or future goal pursuits. In this section, I ask what makes people represent goals in terms of commitment or progress in the first place? I propose that the representation of goals and the resultant dynamic of self-regulation depend on (a) the information the person seeks – whether it concerns commitment or ensuring that sufficient progress is being made and (b) the information that is in the presentation of action alternatives—whether it suggests that the alternatives substitute for or complement each other.

#### ***The Information the Perceiver Seeks***

Research on the dynamics of self-regulation has often used framing questions to direct people's attention to the progress versus commitment from their goal actions. For example, in prior studies, to induce a progress frame of the health goal, my colleagues and I asked gym users to indicate whether they were getting healthier, and to induce a commitment frame of that goal, we asked them to indicate whether exercising was important to them (Fishbach & Dhar, 2005; Zhang et al., 2007). But how do these framing questions work? We assume that people ask themselves these questions; that is “Am I making progress?” or “Is it important to me?” To provide an answer, they need to focus on a certain aspect of their goal pursuits—namely, either progress or commitment.

However, there are other variables that determine whether people will ask about commitment or progress and the resultant dynamic of self-regulation. These include the type of the goal (i.e., whether it is typically represented in terms of commitment or progress) and the person's experience pursuing it.

Specifically, people ask about goal commitment when their commitment is somewhat ambiguous—that is, uncertain or relatively low. When people feel unsure about their level of goal

commitment, their primary concern is to evaluate whether the goal is important to them and worth pursuing further, and they infer greater commitment on the basis of accomplished goal actions. For example, whether people perceive goal commitment would influence their decision to donate money to a novel (vs. familiar) charity or to study for a moderately (vs. highly) important course. When commitment is under consideration, in such situations, accomplished actions increase the motivation to work on a goal through a dynamic of highlighting. For example, emphasizing the amount of money that has been donated to date or the amount of completed coursework would be more motivating than emphasizing the amount of money that is still missing or the amount of remaining coursework.

In contrast, people ask about goal progress when they are relatively certain about their commitment to a goal. When a goal is unambiguously important and expectancy of attainment is known, a person's motivation is based on inferences of need for progress (see Brunstein & Gollwitzer, 1996; Wicklund & Gollwitzer, 1982). As such, emphasizing unaccomplished goal actions or actions that pursue a competing goal would be more motivating through a dynamic of balancing. For example, a need for progress should be motivating when people are deciding whether to donate money to a familiar and valuable charity or when they are studying for a highly (vs. moderately) important course. In these situations, the focus on the amount of money that is needed to reach a campaign goal and the remaining work to complete a course will be more motivating than information about accomplishments.

Koo and Fishbach (2008) tested for these ideas in a series of studies that manipulated the level of initial commitment and the focus on what had already been accomplished (to date) versus what remained to be accomplished (to go). Their studies used goals with a clear end state, and thus any accomplishment (e.g., 50% to date) could be framed as a required accomplishment (e.g., 50% to go) without altering the objective information. The question was which emphasis is more motivating. Koo and Fishbach predicted that the relative impact of to-date versus to-go information would depend on a person's commitment certainty. That is, a 50% to-date frame signals commitment and will increase

motivation when people are not certain about their commitment to their goal and ponder the value of the goal and expectancy of success. In contrast, a 50% to-go frame signals a need for progress and will be more motivating when people ask whether more progress is needed to attain their goal.

In an experiment that tested these predictions (Koo & Fishbach, 2008, Study 1), undergraduate student participants assigned study time and effort to a core-course exam, to which their commitment was certain and relatively high, or to an elective-course exam, to which their commitment was uncertain and relatively low. These students further focused their attention on either the 50% exam materials that they had covered to date versus the exam materials they had not yet covered. It was found that for an elective-course exam, to which commitment was uncertain, emphasizing the accomplishment to date (vs. to go) increased students' motivation to study, as assessed by the time and effort that participants were willing to put into studying. However, for a core-course exam, emphasizing the actions to go (vs. to date) increased the motivation to study (Figure 3). Apparently, emphasizing completed (vs. remaining) actions increased the motivation to adhere to a goal when commitment was uncertain by signaling that the goal was important. These uncommitted students followed a dynamic of highlighting and chose to study because they had completed some coursework. In contrast, emphasizing remaining (vs. completed) actions increased the motivation to adhere to a goal when commitment was certain by signaling a need for progress. These committed participants followed a dynamic of balancing and chose to study because they had remaining coursework that they had not yet completed.

Goal research often focuses on self-regulation toward personal goals, such as pursuing academic and health goals. However, similar processes should affect the regulation of group goals, which require a group of people to invest their resources toward a common goal—for example, when raising contributions for a charity. In such situations, a person's motivation to invest resources can depend on others' contributions or lack of contributions and what is missing to complete the goal. In addition, social agents choose to emphasize contributions or a lack of contributions as part of their persuasive

appeal. For example, fundraisers present information about the amount of donations they have received thus far (i.e., seed money) or money that is still required to complete the fundraising goal. People's motivation to invest resources in a social goal should follow the same basic dynamics as the motivation to work on a personal goal. That is, if they ask about their level of commitment, they are more likely to invest resource if they consider others' contributions versus the lack of contributions because current contributions signify that the goal is important. However, if people ask about the level of progress toward the social goal, they are more likely to invest resources if they consider the lack of contribution because it signifies that more progress is required to achieve the goal.

To demonstrate effects on a group goal, Koo and Fishbach (2008, Study 4) conducted a field study with the collaboration of Compassion Korea, a charity organization dedicated to helping children in developing countries. As part of their study, Compassion initiated a campaign to help AIDS orphans in Africa. The solicited population included regular donors, who were making monthly donations of \$35 to this charity ("hot list"), and new donors, who indicated their interest but had not yet made any contribution ("cold list"). The two groups varied in terms of their commitment certainty, which was higher for those on the hot list. The solicitation letter indicated that Compassion set a goal to raise 10 million won (approximately US\$10,000) to help AIDS orphans in Africa and that approximately half of the money had already been raised through various channels. Depending on the experimental condition, half of the participants received a solicitation letter that emphasized the contributions to date (50%), and the other half received a letter that emphasized the required contributions to complete the campaign goal (again, 50%).

The results showed that among first-time donors, whose commitment was uncertain, an emphasis on accomplished contributions (50% to date) increased the frequency and the average amount of donations more than an emphasis on required contributions (50% to go). This pattern reflects a dynamic of highlighting because a person's contribution increased if others contributed. In contrast,

among regular donors, whose commitment was certain, an emphasis on unaccomplished actions (50% to go) increased frequency and the average amount of donations more than an emphasis on accomplished actions (50% to date). This pattern reflects a dynamic of balancing because a person's contribution increased if others did not contribute (see Figure 4 for the frequency data).

In summary, research on the information that the perceiver seeks shows that a person's commitment certainty determines his or her dynamic of self-regulation. When commitment is uncertain, people ask about commitment and follow a dynamic of highlighting the focal goal. As a result, the focus on completed actions to date increases self-regulatory effort more than the focus on remaining actions to go. When, however, commitment is certain, people ask about progress and follow a dynamic of balancing between progress toward the focal goal and attending to other goals. Then, the focus on remaining actions to go increases self-regulatory effort more than the focus on completed actions to date.

### ***The Information in the Goal Actions***

The information that the perceiver seeks influences the dynamic of self-regulation. In addition, the characteristics of the situation influence the dynamic of self-regulation that people choose to follow. One such characteristic is the relative saliency of a concrete goal action versus the abstract, overall goal. Some choice situations emphasize the concrete actions, whereas others emphasize the overall goals (Trope & Liberman, 2003; Vallacher & Wegner, 1987). This emphasis influences the representation of goals and the resultant dynamic of self-regulation. Specifically, when an overall goal is salient, people tend to represent goal actions in terms of commitment to the overall goal and highlight that goal, but when the overall goal is not salient, people tend to represent goal actions in terms of progress on a specific action and balance between the overall goal and other ones.

In a study that tested this idea, Fishbach et al. (2006, Study 3) assessed participants' motivation to work on an academic achievement task after successfully completing, or not, a similar task.

Participants completed two independent scrambled-sentence tasks that represented two subgoals toward an academic achievement goal. After completing the first task, they received bogus feedback on their low or high success; then, their persistence on a second, similar task was assessed. Notably, unlike the first task, the second task had no correct solutions, and thus task motivation could be inferred by the time participants persisted on this frustrating task (Muraven, Tice, & Baumeister, 1998). This study found that when the focus was on the concrete action itself, success on the first task signaled progress and substituted for exerting effort on the second task, such that participants quit earlier after high (vs. low) success. However, when the overall achievement goal was primed during the first task (Bargh & Chartrand, 2000; Srull & Wyer, 1979), success on the first task signaled commitment and reinforced participants' motivation to exert more effort on the second task, and indeed participants persisted longer after high (vs. low) success (see Figure 5). Further studies found that in addition to the accessibility of an overall goal, merely considering goal pursuits that are temporally distant, and therefore are represented in terms of more abstract goals (e.g., Trope & Liberman, 2003), resulted in a commitment (vs. progress) representation of goal actions and highlighting the same goal in successive choices (Fishbach et al. 2006; Study 4; see also Zhang et al. 2007, Study 4).

### ***Complementing Versus Competing Actions***

In addition to the relative accessibility of the overall goal, another factor that influences the dynamic of self-regulation refers to the presentation of choice alternatives that pertain to different underlying goals as either complementing each other or competing with each other. Whereas people balance between complementing choice alternatives, they highlight the better alternative among competing choice alternatives.

Specifically, when alternatives pertaining to different goals coexist, they can be included either in one unified choice set or in two separate choice sets. These presentation formats—together or apart—convey the impression that the items included either complement each other or compete with

each other. When items appear together they seem to complement each other, and the resultant dynamic is one of balancing, whereas when items appear apart they seem to compete with each other, the resultant dynamic is one of highlighting (e.g., fruits and candies). For example, the presentation of healthful and unhealthful food items together on the same plate activates the perception that these items complement each other, and balancing is desirable. The presentation of these items in two separate plates activates the perception that these items compete with each other, and highlighting is desirable.

The perception of choice items as competing with or complementing each other has unique consequences for self-control conflicts and the pattern of self-regulation among goals and temptations. In a self-control conflict, one goal is high order and offers delayed but larger benefits, and the other, “temptation goal” is low order and offers immediate but smaller benefits (Ainslie, 1992; Baumeister, Heatherton, & Tice, 1994; Kivetz & Simonson, 2002; Loewenstein, 1996; Metcalfe & Mischel, 1999; Rachlin, 2000; Thaler, 1991; Trope & Fishbach, 2000). For example, studying offers delayed benefits and procrastinating offers immediate, yet smaller benefits. In this conflict, highlighting entails that a person persistently chooses goal items and expresses a positive evaluation of them because the goal is more valuable in the long run. Balancing produces the opposite pattern of evaluation and choice, such that the immediate choice and value of tempting options increase relative to the goal. The reason is that under a balancing dynamic, the sequence of “first temptation, then goal” offers greater total benefits than “first goal, then temptation.” That is, people can expect to maximize what they attain from both by expressing an immediate preference for a tempting option and an intention to choose a goal option at the next opportunity. As such, they capture the value of the temptation in the present and expect to obtain the value of the goal in the future.

Fishbach and Zhang (2008) conducted a series of studies to test whether goal and temptation items that are presented apart (i.e., in two sets) compete with each other and thus lead to a dynamic of

highlighting, such that people express a preference for and positive evaluation of goal items. They also tested whether goal and temptation items that are presented together in the same choice set complement each other and thus lead to a dynamic of balancing between the underlying motivations, such that people express a preference for and positive evaluation of tempting items. In one study, Fishbach and Zhang (2008, Study 3) asked participants to evaluate healthful and unhealthful courses on a restaurant menu (e.g., edamame beans and fruit plate vs. bacon cheeseburger and chocolate mousse). The menu either included all courses together in one section or separated the healthful and unhealthful courses, which were presented apart in two different sections. In another (single) condition, participants evaluated only half of the menu items—either healthful or unhealthful—and they came back to the lab to evaluate the other half a few days later. The results showed that the relative value of the healthful and unhealthful menu courses depended on presentation format. Although the value of these items was similar when they were evaluated on separate days, presenting the two types of courses together, so that they seemed to complement each other, increased the value of unhealthful courses. Conversely, presenting the two types of courses apart, so that they seemed to compete with each other, increased the value of healthful courses (see Figure 6).

In another study, Fishbach and Zhang (2008, Study 5) measured people's choice of menu courses as a function of the presentation format. In this study, they found that when the options were presented together, the majority of the participants were balancing: they expressed a preference for a tempting, unhealthful entrée for an immediate consumption, and a more healthful dessert for a delayed consumption. However, when the options were presented apart, the majority of the participants were highlighting: they expressed a preference for healthful menu courses for both an immediate entrée and a delayed dessert. Thus, participants balanced between items that seemed to complement each other, and they highlighted goal items when they competed with tempting items. Further studies documented similar patterns on evaluation and choice when participants were evaluating academic versus leisure

stimuli (e.g., study book vs. DVDs) or high-brow versus low-brow magazines (e.g., *The Economist* vs. *Cosmopolitan*); thus, these findings are not unique to food items.

The aforementioned studies illustrate that the presentation of choice alternatives can influence a person's tendency to balance between the underlying goals and temptations or to highlight the most important goal over successive choices that unfold over time. Importantly, in self-control situations, balancing may imply that a person resolves the conflict in favor of the temptation on each opportunity, while repeatedly postponing selection of goal items to the future. For example, a student can decide to procrastinate today and work on a paper tomorrow and repeat this choice every day, or a smoker can decide to smoke now and forgo smoking in the future and repeat this decision at each opportunity. In such situations, balancing results in self-control relapses.

What is special about these self-control failures is that people engage in a dynamic of balancing, in which they do not perceive a conflict between goals and temptations. Rather, they perceive an opportunity to give in to temptations in the present and capture the value of the goal in the future. Therefore, these self-control failures are the result of people's failure to recognize a self-control problem. They are different from failures to exercise one's will, because people do not try to restraint and therefore do not incur the sense of failure (cf., ego depletion effects; Baumeister, this volume; Baumeister, Bratslavsky, Muraven, & Tice, 1998; Vohs, Baumeister, & Ciarocco, 2005; Vohs, LaSalleta and Fennis, this volume).

### **Summary and Conclusions**

The theory and research on the dynamics of self-regulation (Fishbach & Dhar, 2005; Fishbach et al., 2006; Fishbach & Zhang, 2008; Koo & Fishbach, 2008; Zhang et al., 2007) identify two basic patterns of self-regulation that people follow when they hold multiple goals: a dynamic of highlighting a single goal, which is based on a commitment representation of goals, and a dynamic of balancing among multiple goals, which is based on a progress representation of goals. First, when goal actions signal that

commitment to the goal is high, they reinforce similar choice of actions. Correspondingly, people are less likely to adhere to the goal to the extent that they have not selected goal actions before and infer low commitment. Second, when goal actions signal that progress has been made toward the goal and the discrepancy to goal attainment has been reduced, people relax their efforts. Correspondingly, they are also more likely to adhere to the focal goal if they have not selected other goal actions and experience need to progress. One conclusion is that both acting on a goal and failing to do so can potentially motivate further actions in pursuit of the goal, depending on the dynamic of self-regulation (i.e., highlighting vs. balancing).

The research reviewed here supports the operation of two dynamics of self-regulation. This research finds that when an action is indicative of commitment, it promotes similar choices and inhibits competing goals (Shah et al., 2002), but when the same action is indicative of progress, it liberates a person to disengage with the goal and attend to other goals (Khan & Dhar, 2006; Monin & Miller, 2001). Notably, not only do completed actions affect present choice, but future plans also exert similar influences. Thus, in a choice sequence, people choose to adhere to goals in the present after considering completed or planned goal actions, or both.

There are several variables that determine the dynamic of self-regulation that people follow, and they reflect either the information the perceiver seeks or the information that is in the choice situation. First, whether people ask about their level of commitment to the goal versus progress needed for goal attainment, determines the interpretation of goal-congruent actions as signaling one of the two. When commitment is uncertain, people ask about commitment and they highlight, but when commitment is certain, people ask whether progress has been made and they balance. Second, the dynamic of self-regulation depends on the information that is in the choice alternatives. When the overall goal is salient, any specific goal action is more likely to signal commitment to the goal than progress toward the goal, and people highlight. But when the specific action is salient, its completion is

more likely to signal progress or attainment than commitment, leading people to balance. Moreover, even in the absence of an initial goal action, the presentation of choice alternatives that cue different goals (or goals and temptations) can influence the representation of the underlying goals and the dynamic of self-regulation. When choice alternatives appear together in a unified choice set, they seem to complement each other and people balance between the underlying goals. In self-control situations, this dynamic increases the preference for tempting alternatives. When choice alternatives are presented apart in separate choice sets that are organized by the underlying goals, they seem to compete against each other and people highlight the more important goal. This dynamic increases the preference for alternatives that serve high-order goals.

There are some remaining issues that my colleagues and I address in our ongoing study of the dynamics of self-regulation. First, this theoretical framework has implications for the already-classic question of what determines people's level of aspiration (Kruglanski, 1975; Lewin, Dembo, Festinger, & Sears, 1944). Koo and Fishbach (2008) provide some new insights into this classic problem by proposing that in a commitment representation of goals, people adhere to their goal because they derive value from the actual engagement, whereas in a progress representation of goals, people adhere to their goal because they derive value from goal completion and moving on to a more advanced level. For example, in a commitment frame, college students study because they derive satisfaction from expanding their knowledge, whereas in a progress frame, students derive satisfaction from completing their academic requirements, which is a step in developing their professional career. It follows that a progress frame is associated with a higher level of aspiration. Moreover, there should be a trade-off between the satisfaction from pursuing the goal in a commitment frame and the satisfaction from completing a goal in the progress frame. A progress frame is ultimately associated with a higher level of aspiration, but it should also be associated with extrinsic motivation, focus on goal completion, and receiving the benefits from completing the goal. Conversely, a commitment frame is associated with a lower level of aspiration

but greater intrinsic value of the goal itself (Deci & Ryan, 1985; Sansone & Harackiewicz, 2000; Sansone, this volume; Shah & Kruglanski, 2000).

This theoretical framework has further implications for mood and self-regulation and, in particular, when do positive versus negative moods increase the motivation to adhere to a goal. Eyal, Fishbach and Labroo (2008) found that when people attribute their mood to progress toward a goal, positive mood signals that progress has been made more than negative mood, and happy individuals relax their efforts. However, when, people attribute their mood to an unrelated source, mood has the opposite effect. That is, positive mood signals goal commitment more than negative mood, and happy individuals invest more efforts on the goal (see also Fishbach & Labroo, 2007).

This theoretical framework is not limited to personal goals. It has implications for group phenomena and what motivates people to join forces with other group members to pursue goals that are subscribed by society, such as environmental issues or helping the poor. Recently, Koo, Fishbach and Henderson (2008) found that people's motivation to adhere to group goals depends on their level of identification with the group. When people have high levels of identification, they monitor goal progress and therefore, an emphasis on other group members' lack of (vs. existing) contributions, increases their own contributions through balancing. Conversely, when people have low levels of group identification, they evaluate the commitment to the goal and an emphasis of others' existing (vs. lack of) contributions signals commitment, thus it increases contributions through highlighting. In general then, this framework has implications for the pursuit of group goals and phenomena such as social loafing and social facilitation.

## References

- Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality & Social Psychology, 78*, 53–63.
- Aarts, H., Gollwitzer, P. M., & Hassin, R. R. (2004). Goal contagion: Perceiving is for pursuing. *Journal of Personality and Social Psychology, 87*(1), 23–37.
- Ainslie, G. (1992). *Picoeconomics: The strategic interaction of successive motivational states within the person*. Cambridge, England: Cambridge University Press.
- Atkinson, J. W. (1964). *An introduction to motivation*. Oxford: Van Nostrand.
- Atkinson, J. W., & Raynor, J. O. (1978). *Personality, motivation, and achievement*. New York: Halsted Press.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Henry Holt & Co.
- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–285). New York: Cambridge University Press.
- Bargh, J. A., Gollwitzer, P. M., Lee-Chai, A., Barndollar, K., & Troetschel, R. (2001). The automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology, 81*, 1014–1027.
- Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1994). *Losing control: How and why people fail at self-regulation*. San Diego: Academic Press.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*(5), 1252–1265.
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press.

- Brunstein, J. C., & Gollwitzer, P. M. (1996). Effects of failure on subsequent performance: The importance of self-defining goals. *Journal of Personality & Social Psychology, 70*, 395–407.
- Buehler, R., Griffin, D., & Ross, M. (1994). Exploring the “planning fallacy”: Why people underestimate their task completion times. *Journal of Personality & Social Psychology, 67*, 366–381.
- Cantor, N. and C. A. Langston (1989). Ups and downs of life tasks in a life transition. In L. A. Pervin. *Goal concepts in personality and social psychology*, (pp. 127-167). Hillsdale, Erlbaum.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces the effects of explicit task instructions. *Journal of Personality and Social Psychology, 71*, 464–478.
- Cialdini, R. B., Trost, M. R., & Newsom, J. T. (1995). Preference for consistency: The development of a valid measure and the discovery of surprising behavioral implications. *Journal of Personality and Social Psychology, 69*, 318–328.
- Deci, E. L., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. New-York: Plenum.
- Emmons, R. A., & King, L. A. (1988). Conflict among personal strivings: Immediate and long-term implications for psychological and physical well-being. *Journal of Personality & Social Psychology, 54*, 1040–1048.
- Eyal, T., Fishbach, A., & Labroo A. L. (2008), *When mood cues goal progress versus goal adoption: A matter of (mis)attribution*, Unpublished Manuscript, University of Chicago.
- Feather, N. T. (1990). Bridging the gap between values and actions: Recent applications of the expectancy-value model. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 151–192). New York: Guilford Press.

- Ferguson, M. J., & Bargh, J. A. (2004). Liking is for doing: The effects of goal pursuit on automatic evaluation. *Journal of Personality & Social Psychology, 87*, 557–572.
- Fishbach, A., & Dhar, R. (2005). Goals as excuses or guides: The liberating effect of perceived goal progress on choice. *Journal of Consumer Research, 32*, 370–377.
- Fishbach, A., Dhar, R., & Zhang, Y. (2006). Subgoals as substitutes or complements: The role of goal accessibility. *Journal of Personality and Social Psychology, 91*, 232–242.
- Fishbach, A., & Ferguson, M. F. (2007). The goal construct in social psychology. In A. W. Kruglanski & T. E. Higgins (Eds.), *Social psychology: Handbook of basic principles* (pp. 490–515). New York: Guilford Press.
- Fishbach, A., & Labroo, A. (2007). Be better or be merry: How mood affects self-control. *Journal of Personality and Social Psychology, 93*, 158–173.
- Fishbach, A., & Zhang, Y. (2008). Together or apart: When goals and temptations complement versus compete. *Journal of Personality and Social Psychology, 94*, 547–559.
- Forster, J., Higgins, E., & Idson, L. C. (1998). Approach and avoidance strength during goal attainment: Regulatory focus and the “goal looms larger” effect. *Journal of Personality and Social Psychology, 75*(5), 1115–1131.
- Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 53–92). New York: Guilford Press.
- Higgins, T. E. (1997). Beyond pleasure and pain. *American Psychologist, 52*, 1280–1300.
- Hull, C. L. (1934). *The rat's speed-of-locomotion gradient in the approach to food. Journal of comparative psychology 17*, 393–422.
- Khan, U., & Dhar, R. (2006). Licensing effect in consumer choice. *Journal of Marketing Research, 43*, 259–266

- Kivetz, R. and I. Simonson (2002). Self-control for the righteous: Toward a theory of precommitment to indulgence. *Journal of Consumer Research*, 29, 199-217.
- Kivetz, R., Urminsky, O., & Zheng, Y. (2006). The goal-gradient hypothesis resurrected: Purchase acceleration, illusory goal progress, and customer retention. *Journal of Marketing Research*, 43, 39–58.
- Koo, M., & Fishbach, A. (2008). Dynamics of self-regulation: How (un)accomplished goal actions affect motivation. *Journal of Personality and Social Psychology*, 94, 183-195.
- Koo, M., & Fishbach, A. (2008). The tradeoff between level of aspiration and value. Unpublished Manuscript, University of Chicago
- Koo, M., & Fishbach, A., & Henderson (2008). *How group identification influences the motivation for goal pursuit*. Unpublished Manuscript, University of Chicago.
- Kruglanski, A. W. (1975). The endogenous-exogenous partition in attribution theory. *Psychological Review*, 82(6), 387–406.
- Kruglanski, A. W. (1996). Goals as knowledge structures. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 599–618). New York: Guilford Press.
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 331–378), San Diego, Academic Press.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. S. (1944). Level of aspiration. In J. M. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp. 333–378). New York: Ronald Press.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Upper Saddle River, NJ: Prentice Hall.

- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior & Human Decision Processes*, *65*, 272–292.
- Losco, J., & Epstein, S. (1977). Relative steepness of approach and avoidance gradients as a function of magnitude and valence of incentive. *Journal of abnormal psychology*, *86*, 360–368.
- Markus, H., & Ruvolo, A. (1989). Possible selves: Personalized representations of goals. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 211–241). Hillsdale, NJ: Lawrence Erlbaum.
- McAlister, L., & Pessemier, E. (1982). Variety seeking behavior: An interdisciplinary review. *Journal of Consumer Research*, *9*(3), 311–322.
- Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, *106*, 3–19.
- Miller, G. A., Galanter, E., & Pribram, K. H. (1960). *Plans and the structure of behavior*. New York: Henry Holt.
- Mischel, W., Cantor, N., & Feldman, S. (1996). Principles of self-regulation: The nature of willpower and self-control. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 329–360). New York: Guilford Press.
- Monin, B., & Miller, D. T. (2001). Moral credentials and the expression of prejudice. *Journal of Personality and Social Psychology*, *81*, 33–43.
- Moskowitz, G. B. (2002). Preconscious effects of temporary goals on attention. *Journal of Experimental Social Psychology*, *38*, 397–404.
- Muraven, M., Tice, D. M., & Baumeister, R. F. (1998). Self-control as a limited resource: Regulatory depletion patterns. *Journal of Personality and Social Psychology*, *74*, 774–789.
- Oettingen, G., & Mayer, D. (2002). The motivating function of thinking about the future: Expectations versus fantasies. *Journal of Personality & Social Psychology*, *83*, 1198–1212.

- Powers, W. T. (1973). *Behavior: The control of perception*. Oxford: Aldine.
- Read, D., Loewenstein, G., & Rabin, M. (1999). Choice bracketing. *Journal of Risk and Uncertainty*, 19, 171–197.
- Rachlin, H. (1997). Self and self-control. In J. G. Snodgrass & R. L. Thompson (Eds.), *The self across psychology: Self-recognition, self-awareness, and the self concept*. *Annals of the New York Academy of Sciences* (Vol. 818, pp. 85–97). New York: New York Academy of Sciences.
- Ratner, R. K., Kahn, B. E., & Kahneman, D. (1999). Choosing less-preferred experiences for the sake of variety. *Journal of Consumer Research*, 26(1), 1–15.
- Sansone, C. and J. M. Harackiewicz, Eds. (2000). *Intrinsic and extrinsic motivation: The search for optimal motivation and performance*. New York, Academic Press.
- Shah, J. Y., Friedman, R., & Kruglanski, A. W. (2002). Forgetting all else: On the antecedents and consequences of goal shielding. *Journal of Personality & Social Psychology*, 83, 1261–1280.
- Shah, J. Y., & Kruglanski, A. W. (2000). The structure and substance of intrinsic motivation. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 105–127). New York: Academic Press.
- Shah, J. Y., & Kruglanski, A. W. (2003). When opportunity knocks: Bottom-up priming of goals by means and its effects on self-regulation. *Journal of Personality and Social Psychology*, 84(6), 1109–1122.
- Simonson, I. (1990). The effect of purchase quantity and timing on variety-seeking behavior. *Journal of Marketing Research*, 27(2), 150–162.
- Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology*, 37, 1660–1672.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193–210.

- Thaler, R. H. (1991). *Quasi rational economics*. New York: Russel Sage Foundation.
- Trope, Y., & Fishbach, A. (2000). Counteractive self-control in overcoming temptation. *Journal of Personality and Social Psychology*, *79*, 493–506.
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, *110*, 403–421.
- Vallacher, R. R., & Wegner, D. M. (1987). *A theory of action identification*. Hillsdale, NJ: Erlbaum.
- Vohs, K. D., Baumeister, R. F., & Ciarocco, N. J. (2005). Self-regulation and self-presentation: Regulatory resource depletion impairs impression management and effortful self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*, *88*(4), 632–657.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology*, *71*, 3–25.
- Weinstein, N. D. (1989). Optimistic biases about personal risks. *Science*, *246*, 1232–1233.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale, NJ: Erlbaum.
- Zauberman, G., & Lynch, J. G., Jr. (2005). Resource slack and propensity to discount delayed investments of time versus money. *Journal of Experimental Psychology: General*, *134*, 23–37.
- Zhang, Y., Fishbach, A., & Dhar, R. (2007). When thinking beats doing: The role of optimistic expectations in goal-based choice. *Journal of Consumer Research*, *34*, 567–578.

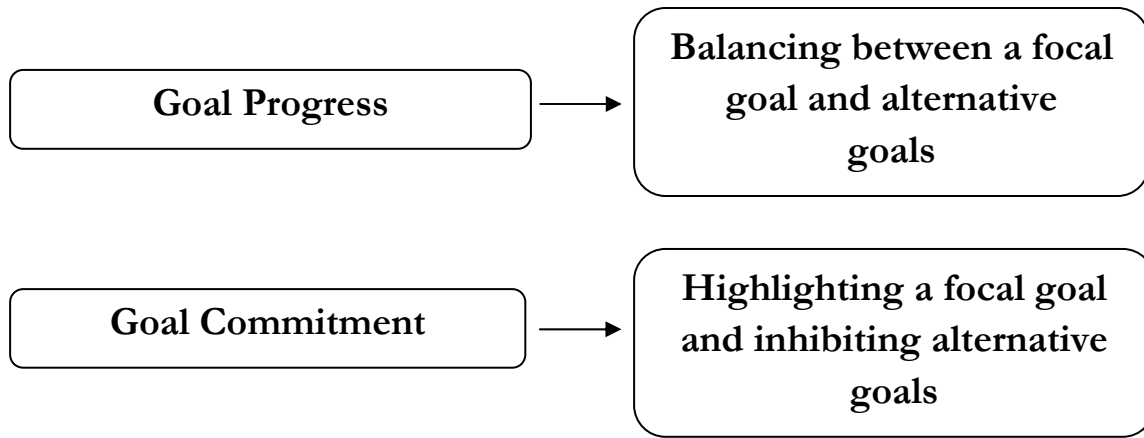


Figure 1: The dynamics of self-regulation

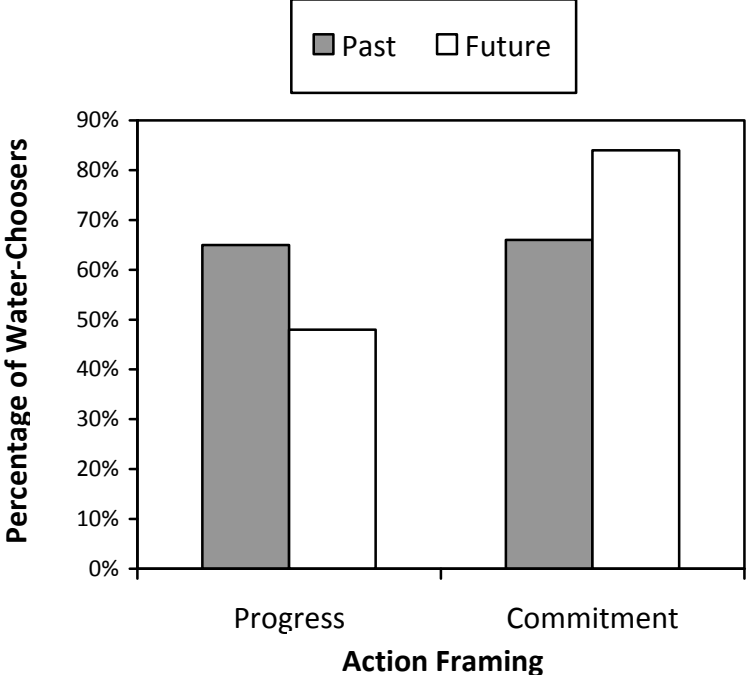


Figure 2: Choice of drinks (spring water vs. sugar soda) as a function of time focus and action framing

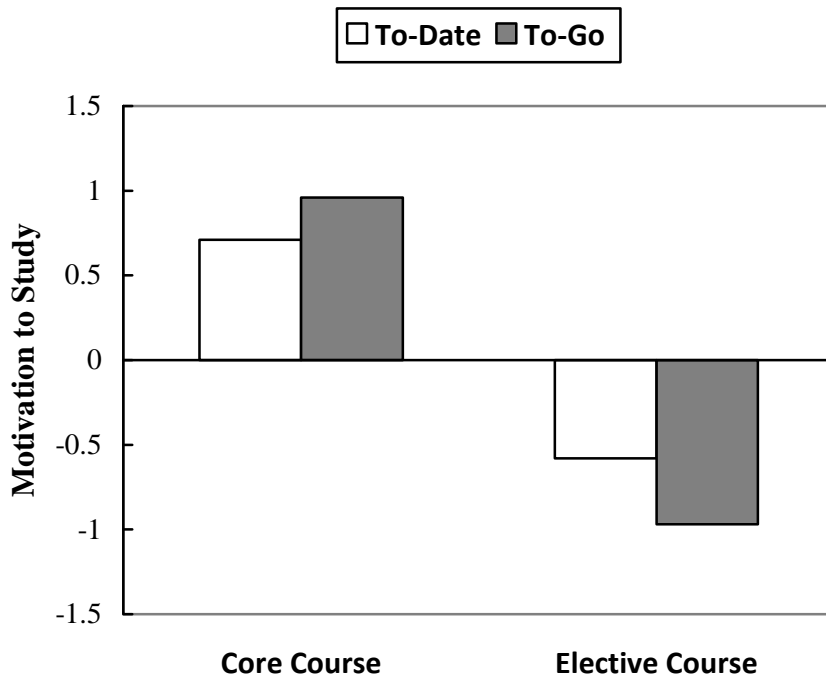


Figure 3: Motivation to study (time and effort Z-score) as a function of commitment (certain: core; uncertain: elective) and focus on to-date versus to-go information

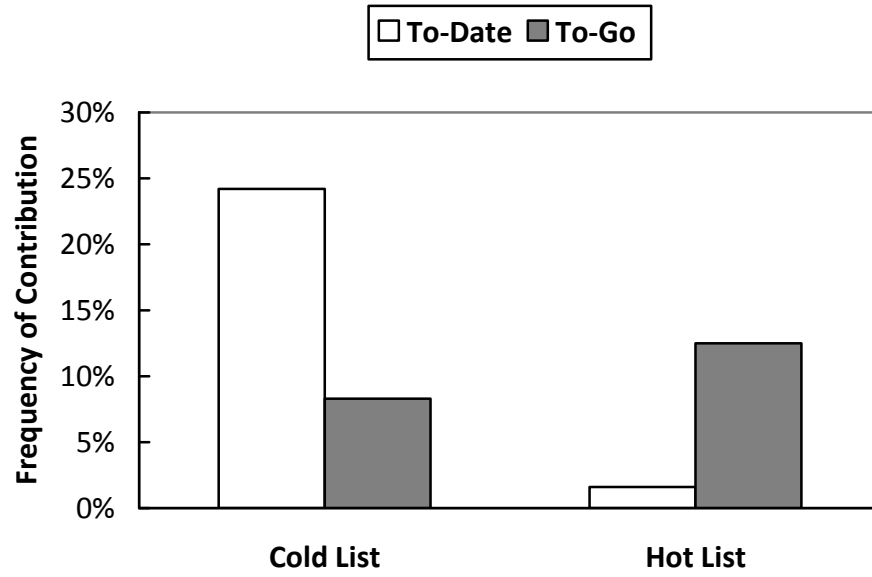


Figure 4: Charity contribution as a function of commitment certainty (cold list vs. hot list) and focus on to-date versus to-go information

Note. 100% of hot-list participants continued their monthly donations during the campaign period

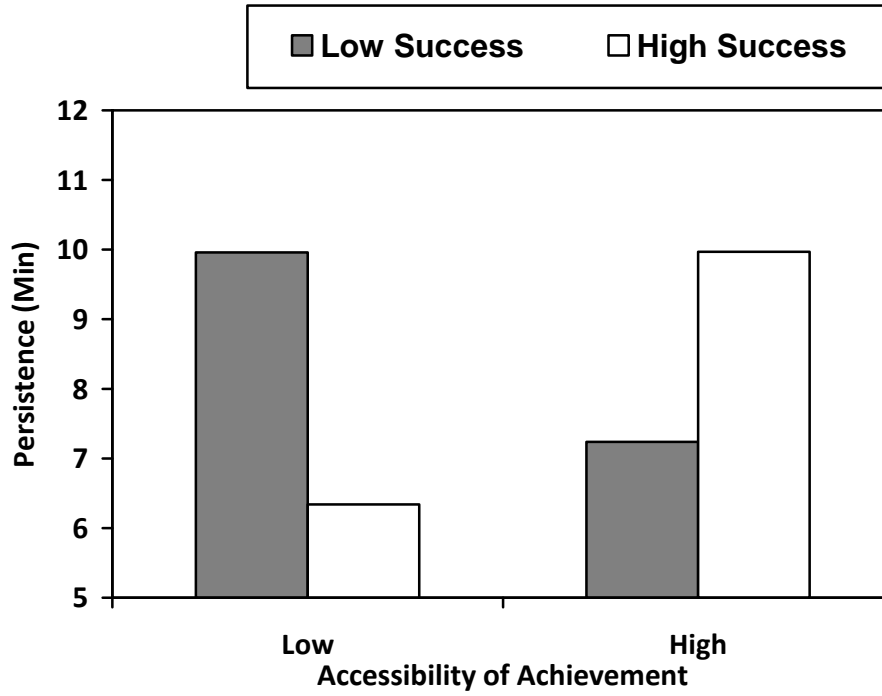


Figure 5: Persistence on unsolvable test as a function of success on an initial test and accessibility of overall achievement goal

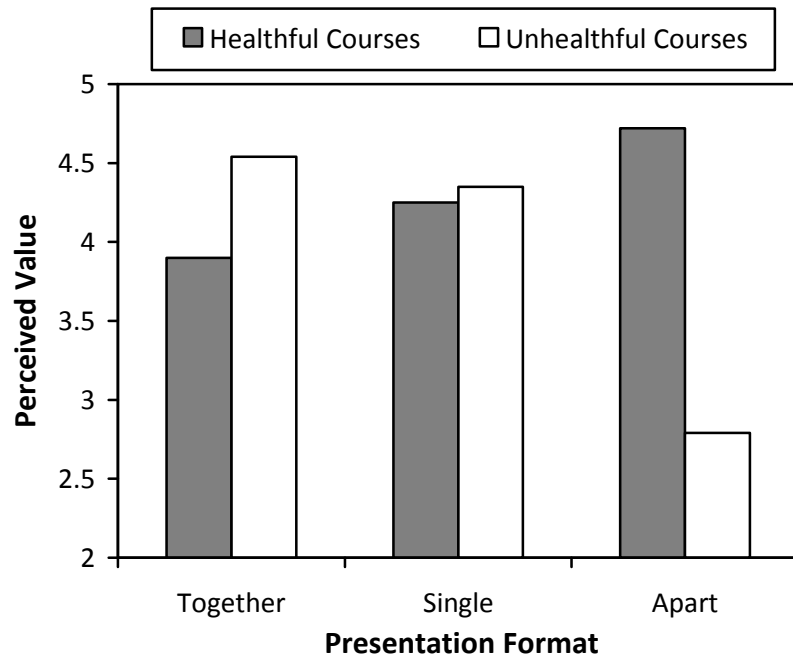


Figure 6: Perceived value of healthful and unhealthful menu courses as a function of presentation format