

The Dynamics of Self-Regulation

Ayelet Fishbach

University of Chicago

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Goal research has documented the significant role of goals in people's choice of action, 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 typically assumed 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, this chapter asks what increases the motivation to work on a focal goal—the absence of another action that pursues this goal (i.e., the pursuit of another goal), which reinforces present action through balancing, or the presence of another action that pursues the focal goal, which reinforces congruent present action through highlighting?

To address these questions, my colleges and I have conducted a program of research on “the dynamics of self-regulation” (Fishbach & Dhar, 2005; Fishbach, Dhar, & Zhang, 2006; Fishbach & Zhang, in press; Koo & Fishbach, in press; Zhang, Fishbach, & Dhar, 2007). 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 progress toward a desired end state or commitment to a desirable end state. 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 propose 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; 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.

Second, people can represent goal actions in terms of 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 attainment 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. 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 may feel justified in relaxing his or her efforts toward this particular end state and, instead, attend 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 sins and 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 attainment 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 goal 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; 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 normal 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 the dynamics of self-regulation. 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 adhere to other goals through a dynamic of balancing. The representation of goals in terms of commitment to a desirable end state increases the tendency to select other actions that pursue the same goal after initial success through a dynamic of highlighting. 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: a lack of goal progress, which is based on low performance, and the presence of goal commitment, which is based on high performance. In addition, two factors undermine people's motivation to work on a goal: low commitment, which is based on low performance, and sufficient progress, which is based on high performance.

### ***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) hypothesize 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 focused on commitment based on their future exercise intentions expressed more interest in a healthful drink than those who focused on commitment based on their exercising habits in the past. Conversely, gym users who focused on progress based on their future exercise intentions expressed less interest in a healthful drink than those who focused on the progress based on their exercising habits 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? It is assumed 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 tendency to focus on either aspect of that goal.

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, perceived goal commitment influences the decision to donate money to a novel (vs. familiar)

charity or to study for a moderately (vs. highly) important course. Because commitment is at stake, 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 lack of 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, lack of 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 (in press) 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 lack of 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 will increase motivation when people are not certain about their commitment to their goal and ponder the value of the goal and attainment expectancy, whereas a 50% to-go frame 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, in press, 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 that the goal had not yet been accomplished. 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 social 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 social goal, Koo and Fishbach (in press, 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, and the other half received a letter that emphasized the required contributions to complete the campaign goal.

As Figure 4 shows, 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.

In summary, research on the information that the perceiver seeks shows that a person's commitment certainty determines the relative impact of accomplished and unaccomplished actions on his or her motivation to adhere to the goal. When goal commitment is under consideration, accomplished actions signal high commitment, and unaccomplished actions signal low commitment, but when goal commitment is certain and the pace of progress toward the goal is under consideration, unaccomplished actions signal a lack of sufficient progress, and accomplished actions signal sufficient progress. As a result, when commitment is uncertain, people follow a dynamic of highlighting a focal goal, whereas when commitment is certain, they follow a dynamic of balancing between progress toward a focal goal and attending to other goals.

### ***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 succeeding or failing on 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. The arrangement of choice alternatives can prime these complementary versus competitive relationships, which then elicits the dynamics of highlighting versus balancing, respectively.

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

complement each other, the resultant dynamic is one of balancing, whereas when items appear apart and seem to compete with each other, the resultant dynamic is one of highlighting. 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). 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 (in press) conducted a series of studies to test whether goal and temptation items compete with each other when they are presented apart and thus lead to a dynamic of highlighting, such that people express a preference for and positive evaluation of goal items. Conversely, they also tested whether goal and temptation items complement each other when they are presented

together in the same choice set 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 (in press, Study 3) asked participants to evaluate healthful and unhealthy 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 or separated the healthful and unhealthy courses, which were presented apart in two different sections. In another (single) condition, participants evaluated only half of the menu items—either healthful or unhealthy—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 unhealthy 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 unhealthy 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 (in press, 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 expressed a greater immediate preference for the tempting, unhealthy entrées and a delayed preference for the unhealthy desserts. However, when the options were presented apart, participants expressed a greater preference for healthful menu courses for both an immediate entrée choice and a delayed dessert choice. 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 socialize 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 failures.

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 adhering to the goal in the future. Therefore, these self-control failures are the result of people's failure to recognize a self-control problem, and they are different from failures to exercise self-control because people do not incur the sense of failure (cf., ego depletion effects; Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven & Baumeister, 2000; Vohs, Baumeister, & Ciarocco, 2005).

### **Summary and Conclusions**

The theory and research on the dynamics of self-regulation (Fishbach & Dhar, 2005; Fishbach et al., 2006; Fishbach & Zhang, in press; Koo & Fishbach, in press; 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 and a discrepancy representation of goals. When goal actions signal that the goal is important and expectancy of attainment is high, people infer commitment, and they are more likely to adhere to the goal following successful pursuit. Correspondingly, they are less likely to adhere to the goal to the extent that they have not selected goal actions before. However,

when goal actions signal that progress has been made toward the goal and the discrepancy to goal attainment has been reduced, people infer that their progress is satisfying, and they are more likely to relax their efforts and attend to other goals following successful pursuit. Correspondingly, they are also more likely to adhere to the focal goal if they have not selected other goal actions and the discrepancy is high. It follows that both acting on a goal and failing to do so can potentially either motivate further actions in pursuit of the goal or undermine this motivation, depending on the dynamic of self-regulation.

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, goal actions signal commitment, but when commitment is certain, goal actions signal that progress has been made. Second, the dynamic of self-regulation depends on the information that is in the choice alternatives. Thus, when the overall goal is salient, any specific goal action is more likely to signal commitment to the goal than progress toward the goal, but when the specific action is salient, its completion is more likely to signal progress or attainment than commitment. 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 prime a dynamic of balancing 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 prime a dynamic of highlighting 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 it, whereas in a progress frame, students derive satisfaction from completing their academic requirements, which is the first step in developing a 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 interest in the goal itself (Deci & Ryan, 1985; Sansone & Harackiewicz, 2000; Shah & Kruglanski, 2000).

This theoretical framework has further implications for mood and self-regulation and, in particular, when do positive versus negative moods provide feedback that increases the motivation to

adhere to a goal (Eyal, Fishbach, & Labroo, 2008). When people attribute their mood to progress toward a goal, positive mood signals that progress has been made and that a person can relax his or her efforts, and negative mood signals a lack of progress and that a person should invest more on the goal.

However, when people attribute their mood to an unrelated source, mood should have the opposite effect. That is, positive mood signals a person to approach a goal and thus increases goal commitment, whereas negative mood signals a person to reject a goal and thus decreases goal commitment (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. People's motivation to adhere to these social goals should depend on their level of identification with the group (Koo, Fishbach, & Henderson, 2008). When people have high levels of identification with their social group, they monitor goal progress and therefore are more likely to contribute to a social goal if they focus on other group members' lack of (vs. existing) contributions. Conversely, when people have low levels of group identification, they evaluate the commitment to the goal and therefore are more likely to contribute if they focus on others' existing (vs. lack of) contributions. In general then, this framework has implications for the pursuit of social goals and phenomena such as social loafing and social facilitation.

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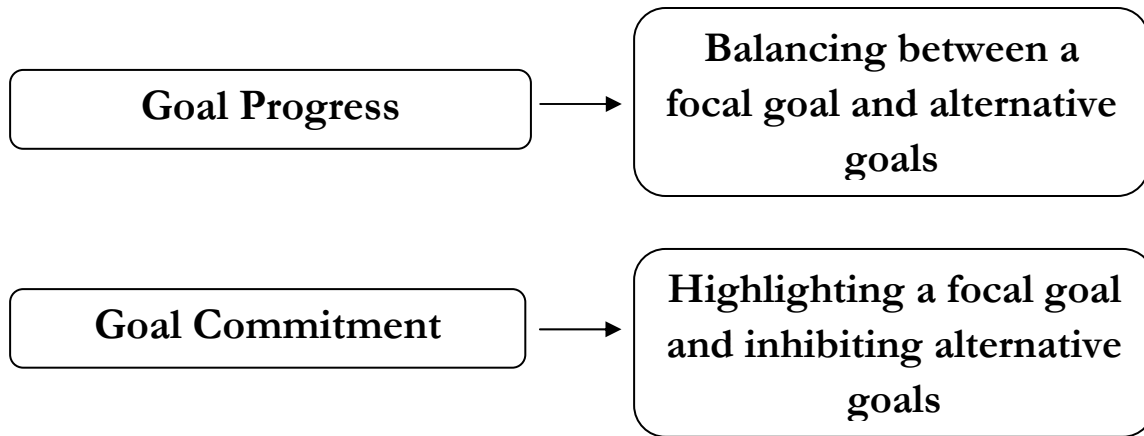


Figure 1: The dynamics of self-regulation

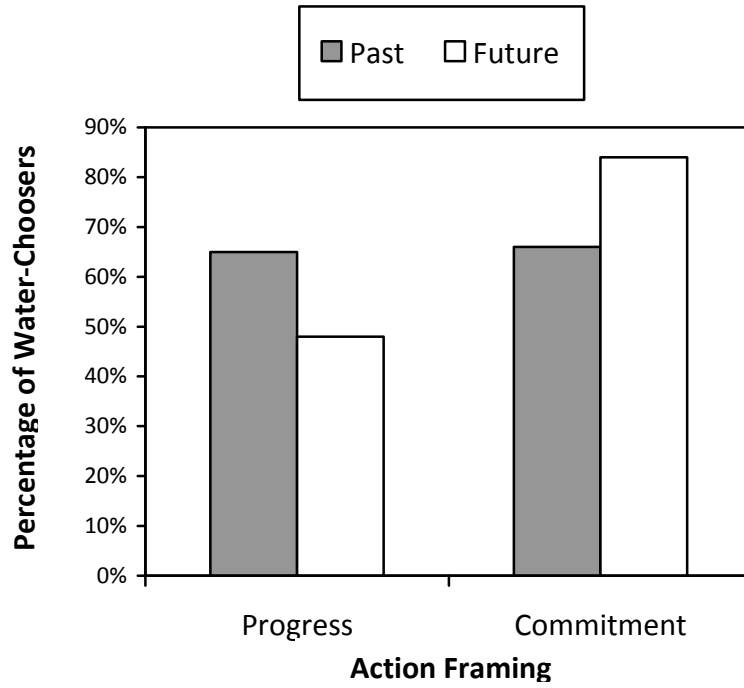


Figure 2: Choice of drinks (spring water vs. sugar soda) as a function of time focus and action framing

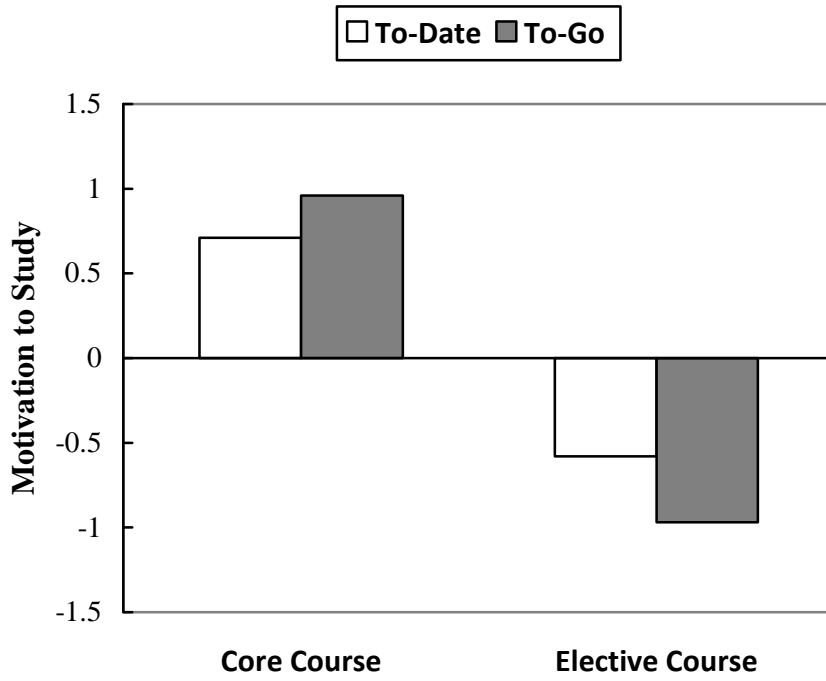


Figure 3: Motivation to study (time and effort Z-score) as a function of commitment (certain: core; uncertain: elective) and focus on to-date versus to-go information

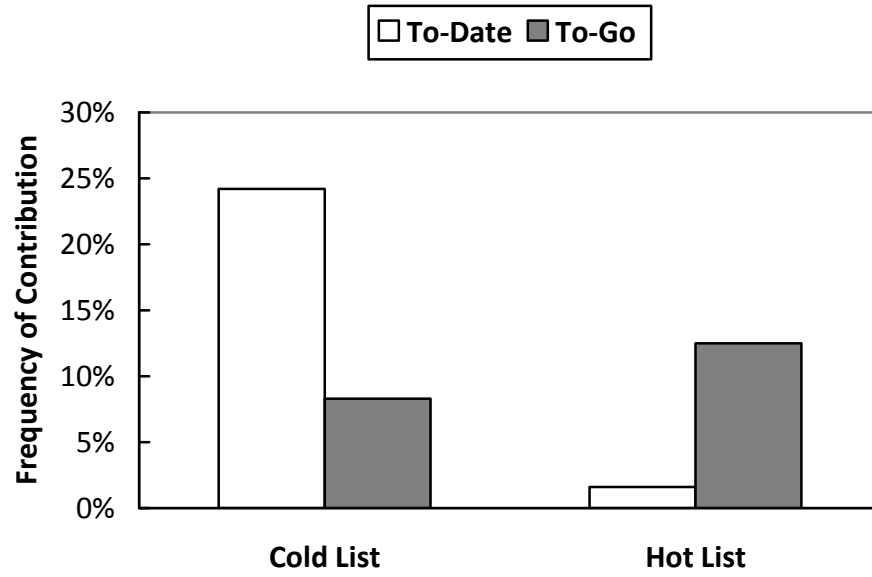


Figure 4: Charity contribution as a function of commitment certainty (cold list vs. hot list) and focus on to-date versus to-go information

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

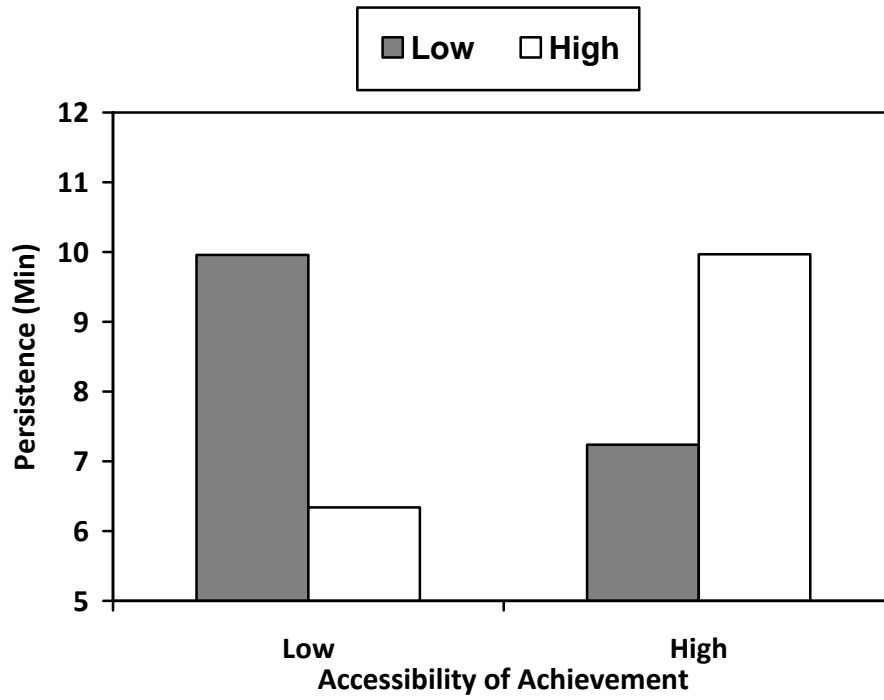


Figure 5: Persistence on unsolvable test as a function of success on an initial test and accessibility of overall achievement goal



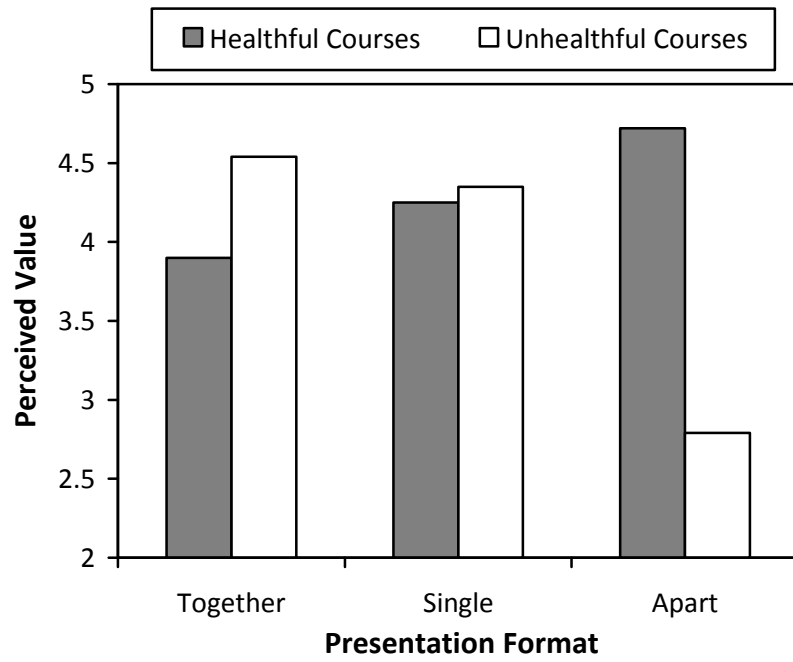


Figure 6: Perceived value of healthful and unhealthful menu courses as a function of presentation format