

The Dynamics of Self-Regulation: When Goals Commit Versus Liberate

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Goals are considered the building blocks of human motivation, and over the last century research in the social sciences has used the concept of goals to account for people's motivational responses, including evaluations, emotions and behaviors (e.g., Ach, 1935; Atkinson, 1964; Austin & Vancouver, 1996; Bandura, 1986; Bargh, 1990; Carver & Scheier, 1998; Deci & Ryan, 1985; Fishbach & Ferguson, 2007; Gollwitzer, 1990; Higgins, 1997; James, 1890; Kruglanski, 1996; Lewin, 1926; Locke & Latham, 1990; Mischel, Cantor, & Feldman, 1996). Beginning with classic goal research, some of the field's important insights include identifying the criteria for goal selection (e.g., the expectancy–value model, Atkinson, 1974; Tolman, 1932), the motivational force of unfulfilled goals (Atkinson & Birch, 1970; Lewin, 1926; Zeigarnik, 1927), and the influence of goals on evaluation (James, 1890; Lewin, 1926, 1935) and information processing (Bruner, 1957). More recent goal research provides insights into the processes of goal setting and goal striving (Carver & Scheier, 1998; Forster, Liberman & Higgins, 2005; Higgins, 1987, 1997; Gollwitzer, 1999; Kruglanski, 1996; Locke & Latham, 1990). And in line with the general theme of social psychology as the study of the situation, a large proportion of recent goal research concerns the situational variables that activate goals and govern goal pursuit, often outside of conscious awareness (e.g., Aarts & Dijksterhuis, 2000; Ferguson & Bargh, 2004; Chartrand & Bargh, 1996; Moskowitz, 2002; Shah, 2003).

A common theme running through both classic and recent goal research is the focus on a single goal and the initiation of a single goal-congruent action. That is, the unit of observation has usually been a single action or evaluation that was made with regard to a single activated goal. For example, research on goal priming has shown that the elicitation of goal states such as “achievement,” “cooperation,” and “seeking intimacy” (e.g., as a result of reading these words) increased people's likelihood of engaging in actions that pursue them. Thus, people primed with

achievement invested more effort on a test, those primed with cooperation claimed less for themselves in a social dilemma game, and those primed with seeking intimacy expressed greater interest in an opposite-sex experimenter (Aarts, Gollwitzer, & Hassin, 2004; Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001; Shah & Kruglanski, 2003).

Our own research diverges from previous goal research in two ways. First, we assume that in many real-life situations, people hold more than one goal at a time. For example, in a social dilemma people may wish to achieve and cooperate at the same time. Our research aims to address the simultaneous consideration of multiple and frequently inconsistent goals (see also Cantor & Langston, 1989; Emmons & King, 1988; Higgins, 1997; Kruglanski et al., 2002; Markus & Ruvolo, 1989). Second, we assume that goal-directed actions are rarely chosen and pursued in isolation. Therefore, our research aims to address the influence of prior as well as planned future actions on people's choice of actions in the present (see also, Read, Loewenstein, & Rabin, 1999; Simonson, 1990). For example, walking into a restaurant simultaneously evokes multiple goals if a person wishes to select food items that are tasty, healthful, and inexpensive. In addition, the person usually makes successive choices from the menu (e.g., choice of an appetizer, an entrée, and a dessert), and these successive choices can potentially create a balance among the simultaneously activated goals, or they can emphasize one goal over the others. Similarly, students may hold simultaneous goals when selecting courses for the upcoming term, hoping to find classes that are interesting, easy and useful. They can then select a schedule of classes that balances these goals, or that highlights the most important one.

In general, when several goals are at stake and people see an opportunity to select several goal-related actions in a sequence, their choice pattern can either balance among the underlying goals or highlight the most important one. Our research addresses the question: what determines

whether people highlight a single goal or balance among several goals across actions? A related question is what increases the motivation to work on a focal goal: the accomplishment of other goal actions, which reinforces congruent present action through highlighting, or the lack of accomplishment of other goal actions, which reinforces present action through balancing?

To address these questions, we conducted a research program on the Dynamics of Self-Regulation (Fishbach & Dhar, 2005; Fishbach & Zhang, in press; Fishbach, Dhar, & Zhang, 2006; Koo & Fishbach, in press; Zhang, Fishbach, & Dhar, 2007). This research addresses the simultaneous pursuit of multiple goals via a sequence of actions that evolves over time and that can either balance among these multiple underlying goals or highlight the single most important one. Our basic premise is that people represent goal actions either in terms of progress toward a desired end state or in terms of commitment to a desirable end state. People then either balance among goals toward which they experience progress, or highlight goals to which they feel committed.

In what follows, we discuss our theoretical framework in more detail. We divide our discussion into three parts. The first part addresses the self-regulatory process in each of the two dynamics: progress-based balancing versus commitment-based highlighting. The second part addresses the sources of feedback that affect self-regulation and promote one dynamic or the other. Finally, the third part addresses the determinants of the specific dynamic that individuals choose to follow.

The Dynamics of Self-Regulation

We propose that goal actions can be represented in terms of either progress toward a desirable end state or commitment to this end state. In a *progress* representation of goals, people feel motivated to choose actions that reduce the discrepancy between the existing undesirable

state and a desirable end state. This framing of goals is assumed in the cybernetic models of self-regulation (Carver & Scheier, 1998; Locke & Latham, 1990; Miller, Galanter, & Pribram, 1960; Powers, 1973). According to these models, progress toward the end state elicits a sense of partial goal attainment, signaling that less effort is needed to accomplish the goal. For example, a dieter may set a goal to lose some weight, or a student may plan to earn an “A” in class. These goals direct the dieter’s and the student’s respective action choices, such as ordering a light dinner and studying on weekends. In turn, pursuing these actions signals that progress is being made and the goal is being partially attained.

Alternatively, people can represent goal actions in terms of commitment to the desirable end state. In a *commitment* representation of goals, people interpret their pursuit of congruent actions as signaling commitment to the goal, including an increased sense that the goal is valuable and that the expectancy of attainment is high (Atkinson, 1970; Atkinson & Raynor, 1978; Bem, 1972; Cialdini, Trost, & Newsom, 1995; Feather, 1990). This representation of goals is less concerned with the reduction of discrepancy between current state and desired end state, or the partial attainment of the goal that is being pursued. For example, a dieter may experience greater commitment to healthful eating when he or she has a light meal, and a student may experience greater commitment to academic success when he or she studies on the weekend. In these cases, the dieter and the student feel that their goals are more valuable and attainable following their pursuit.

These two mental representations of goals—progress versus commitment—have opposite consequences for the pattern of self-regulation when people simultaneously hold multiple goals that they want to pursue. In what follows, we address these behavioral patterns.

Progressed-based balancing. The representation of goals in terms of progress implies that an initial goal-congruent action reduces the discrepancy between the present state and the attainment of the desirable end state (Carver & Scheier, 1998; Miller et al., 1960; Powers, 1973). As a result, a person may feel justified in relaxing and may consequently withdraw his or her efforts toward this particular end state and instead attend to other goals that are assumed to be neglected in a multiple goal environment. A progress representation of goals could thus result in balancing: a dynamic of self-regulation in which pursuing one goal motivates a person to pursue other goals at the next opportunity because he or she feels it is justified to disengage temporarily from a goal toward which progress has been made.

Previous goal research has documented a balancing dynamic in situations where people infer progress has been made toward a goal. For example, research on moral licensing (Monin & Miller, 2001) found less egalitarian behavior after participants were given an opportunity to express their egalitarian attitudes, compared with when participants were not given this opportunity. In this and similar studies, the perception of progress on the egalitarian goal liberated participants to temporarily abandon it to pursue other goals such as forming a quick and intuitive judgment of a target person. The result of the perceived progress was a pattern of balancing between being egalitarian and relying on intuitive judgment.

Commitment-based highlighting. The representation of goals in terms of commitment implies that an initial action that is congruent with a goal is indicative of a strong commitment to that goal. We define commitment as an increased sense that the goal is valuable and likelihood of attainment is high. A commitment interpretation increases a person's motivation to take similar, complementary actions and to inhibit any competing goals (Shah et al., 2002), to ensure the attainment of this highly committed goal. The subsequent self-regulatory process would be

highlighting: a dynamic of self-regulation in which pursuing 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.

Previous goal research documented highlighting when people held a single focal goal and worked harder toward that goal after experiencing some initial goal accomplishment (Dreze & Nunes 2005; Kivetz et al. 2006). For example, Kivetz and his colleagues found that shoppers were more likely to use a frequent-buyer card if the card endowed them with some illusionary accomplishment. In their study, shoppers that received a card that included 2 of 12 stamps required for a free coffee gift were more likely to use the coffee card than others, for whom 10 stamps were required for a free coffee gift and none was included. Although the objective effort that was needed to accomplish the goal was identical across conditions (10 purchases for a free coffee), the perception of initial accomplishment motivated shoppers to use the coffee card by increasing their sense of goal commitment.

Figure 1 illustrates these basic dynamics of self-regulation. The representation of goals in terms of progress toward a desirable end state increases the tendency to “juggle” between that goal and other simultaneously activated goals through balancing. Conversely, the representation of goals in terms of commitment to a desirable end state leads people to emphasize one goal over others through highlighting. It follows that in successive choice situations, after a person pursues an initial action, inferences of progress decrease his or her interest in similar, complementary actions, whereas inferences of commitment increase his or her interest in such actions.

Fishbach and Dhar (2005) conducted a series of studies to test whether the same action can both decrease and increase the motivation to choose another goal-congruent action depending on the representation of goals. In one study, these researchers manipulated the

representation of goals by asking participants questions that focused their attention on the commitment to or progress toward a particular goal after they pursued congruent actions. Participants then indicated their motivation to choose actions that serve alternative, competing goals. For example, with regard to academic goals, student participants indicated whether, whenever they studied, they felt committed to academic tasks or whether they felt they made progress on their academic tasks. Those who considered their sense of commitment as a result of their actions indicated that they would be unlikely to socialize at night (an incongruent activity with studying) if they had studied during the day, whereas those who considered their sense of progress as a result of their actions indicated that they would be interested in socializing at night if they had studied during the day. These effects were replicated across several goal domains (Fishbach & Dhar, 2005, Study 3). It appears that the focus on commitment versus progress promoted a subsequent choice of actions that either highlighted the focal goal or balanced between that goal and an alternative one.

The model illustrated in Figure 1 has further implications for the behavioral consequences of failing to pursue a goal. After people fail to act on a goal, a progress frame motivates them to choose goal-congruent actions because they infer a lack of goal progress and thus feel that more actions are necessary to make up for the failure (Carver & Scheier, 1998). Alternatively, a commitment frame undermines the motivation to choose congruent actions after an initial failure because people infer low commitment and thus tend to disengage from the goal completely (Soman & Cheema, 2004).

In summary, we propose two factors that 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. We also propose two factors that 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. Goal progress and goal commitment are competing representations of goals; therefore, an action that signals progress toward a goal is less likely to signal goal commitment, and vice versa.

Sources of Feedback for Self-Regulation

One source of feedback for self-regulation is completed goal actions. Completed goal actions and past successes can provide feedback on goal progress or commitment, which affects subsequent self-regulation. However, there are other sources of feedback for self-regulation, which we explore in this section. We propose that plans for future actions provide a similar type of feedback, to the extent that people believe that their plans will materialize and consider them to be accomplished actions. In this case, future plans can signal commitment or progress, and can affect subsequent self-regulation. In addition, people's feelings and moods can provide feedback on their level of goal progress or commitment, which then affects self-regulation.

Future Plans as Feedback for Self-Regulation

There is some evidence in previous goal research that people infer either goal commitment or goal progress on the basis of actions they plan to pursue in the future. In this regard, research on self-efficacy (Bandura, 1997) and positive illusions (Taylor & Brown, 1988) finds that beliefs about future actions increase one's confidence in one's ability to pursue the related goals in the present; hence, it is possible these expectations increase goal commitment (see also Atkinson, 1964; Weiner, 1979). As an example, Oettingen and Mayer (2002) found that positive career expectations increased graduating students' motivation to search for a job. As a result of their favorable expectations, these students received more job offers and higher salaries. But future plans can also signal goal progress. For instance, Oettingen and Mayer (2002) also

found that fantasies (unlike expectations) about the transition into professional life decreased the motivation to work toward that goal in the present and were associated with fewer job offers and lower salaries. Based on these findings, it is possible that fantasies, unlike expectations, are experienced as goal progress, and therefore they substitute for actual goal actions.

In a recent series of studies, Zhang, Fishbach & Dhar (2007) tested for the effect of future plans on present actions, as a function of whether expectations were being indicative of goal progress or goal commitment. These researchers hypothesized that the direction of the impact of future plans depends on the representation of goal actions (commitment or progress), whereas the magnitude of the impact depends on people's degree of optimism about their future achievements. That is, more optimistic individuals expect more goal pursuit will take place in the future, and they subsequently show a stronger tendency to either highlight or balance in the present, depending on whether they frame goal pursuits as goal commitment or goal progress. It further follows that the impact of plans is in direct proportion to the amount of goal pursuit considered, when people are optimistic 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 an even greater impact on immediate goal pursuits than retrospection of actual past goal pursuits.

To support this prediction, Zhang et al. (2007, Study 1) approached gym members at the beginning of the year—a time when people typically make New Year's resolutions – and asked them to estimate either the frequency of their workouts in the coming year or the frequency of their actual workouts in the previous year. Not surprisingly, around the New Year, gym members planned to exercise more frequently in the upcoming year than they did in the past year; that is, those in the future condition of the study were optimistic. Further, the researchers asked all the

gym members to rate their agreement with one of two sets of statements, which emphasized either their progress toward the goal of being healthy (e.g., do they feel that they are getting closer to their workout objectives), or their commitment to this goal (e.g., do they feel committed to their workout objectives). Finally, to measure their interest in another goal-congruent activity, the gym members were asked to choose between a healthful and an unhealthful drink—bottled water or sugared soda—as a parting gift. The researchers found that those who rated the extent to which they expressed their commitment to the health goal by exercising, were more likely to select a healthful drink if they envisioned a future workout than a past workout. Conversely, those who rated the extent to which they were progressing toward their health goal by exercising, were less likely to choose healthful drinks if they envisioned a future workout than a past workout. These findings suggest that future exercise plans impact present choice of goal-congruent actions as a function of goal framing, and even more so than past actions.

Another study of the impact of future plans found that the degree of optimism in future goal attainment moderated the effect of expectations on present self-regulation, again, as a function of the representation of goals as expressions of commitment rather than as an accumulation of progress (Zhang et al., 2007, Study 2). That study manipulated the degree of optimism by asking gym members to describe the process of working out (low optimism) versus the completion of a workout (high optimism; see Taylor, Pham, Rivkin, & Armor, 1998) before predicting their amount of future working out. Inducing high (vs. low) optimism about the amount of future working out had opposite effects on gym users' interest in congruent action—healthful eating—in the present: those who focused on the progress made from exercising became less interested in healthful eating, whereas those who focused on goal commitment on the basis of exercising became more interested.

Mood as Feedback for Self-Regulation

Feelings and moods provide feedback about the progress toward a goal and the size of the discrepancy between the present state and goal attainment (Bandura, 1991; Carver & Scheier, 1998; Clore, 1994; Frijda, 1996; Higgins, 1997). But in addition, feelings and moods also signal whether a person should adopt or reject a goal and, this way, they provide feedback on goal commitment (Fishbach & Labroo, 2007; Gray, 1994; Schwarz & Clore, 1984; 1996).

Specifically, a positive mood can signal to people that progress has been made or, alternatively, that they are committed to a goal, whereas a negative mood can signal a lack of goal progress or, alternatively, that goal commitment is relatively low. Whether one's mood provides feedback on progress or commitment can then depend on the representation of goal actions in terms of progress or commitment. In addition, the signal from mood depends on the attribution of the mood to the goal as opposed to an unrelated source.

In terms of attribution, people can attribute their mood either to goal performance or to an alternative source. When a positive mood is attributed to goal performance, it signals that progress is satisfactory, whereas a negative mood that is attributed to goal performance signals a lack of goal progress. As a result, a negative mood motivates goal adherence more than a positive mood because it signals a larger discrepancy (Carver & Scheier, 1998). When, however, mood is attributed to an unrelated source rather than performance on a goal, a positive mood signals adoption of the goal and a negative mood signals rejection of the goal. By signaling the adoption of a goal, or goal commitment, a positive mood motivates goal adherence more than a negative mood (Fishbach & Labroo, 2007; see also Gray, 1994).

In a study that supports this analysis, Eyal, Fishbach and Labroo (2007) first induced a positive or negative mood by asking participants to generate creative associations for positive

versus negative words (e.g., “healthy,” “beautiful” vs. “ugly,” “vomit”); see Isen, Johnson, Mertz, & Robinson, 1985), supposedly to assess their creativity. Then, half of the participants in a mood-related condition were (mis)informed that their feelings after completing the creativity task were indicative of their level of task performance, which was unknown to them. These participants interpreted their positive or negative feelings as indicative of high versus low performance, respectively. As a result of the misattribution, those who experienced a positive mood exhibited lower performance on a subsequent, related word-generation task than those who experienced a negative mood. This pattern is congruent with a progress representation of goals, because negative feelings suggested a large discrepancy between the current state and the desirable end state, and thus increased the motivation to adhere to the goal. In contrast, the participants in the mood-unrelated condition had no reason to associate their mood with task performance and, among them, those who experienced a positive mood worked harder on the word-generation task than those who experienced a negative mood. This pattern is congruent with a commitment representation of goals, in which positive feelings signal commitment to a goal more than negative feelings, thus increasing adherence to the goal. This and other studies demonstrate that both a negative mood that is attributed to goal performance and a positive mood that is attributed to an alternative source increase goal adherence by signaling either low goal progress or high goal commitment. But a negative mood that is attributed to an alternative source and a positive mood that is attributed to goal performance decrease goal adherence.

The Determinant of the Dynamic of Self-Regulation

In the previous section we reviewed several sources of feedback for self-regulation, including past achievements, future plans and moods. The feedback on goal pursuit influences people’s motivation for choosing actions that highlight a single goal under a commitment frame,

and for choosing actions that balance between different goals under a progress frame. In what follows we address the question of what makes people represent goals in terms of commitment or progress, which promotes the dynamics of highlighting or balancing, respectively. We propose that the representation of goals and the resultant dynamic of self-regulation can depend on the information the person seeks, either in terms of establishing commitment or ensuring sufficient progress is being made, as well as on the information that is in the presentation of action alternatives. For example, if a person asks about his or her level of commitment, and as a result follows a pattern of highlighting, the information that the perceiver seeks determines the self-regulatory dynamic. If however, two goal actions, such as eating healthy or unhealthy food, appear in competition against each other, and, consequently, a person makes a sequence of choices that highlights the pursuit of the highly committed goal, the information that is in the choice context determines the self-regulatory dynamic.

The Information That the Perceiver Seeks

Framing cues. The tendency to represent goals in terms of commitment or progress is partially determined by framing cues, which direct a person to ask about the commitment or progress that results from his or her actions. For example, asking gym members whether they were getting healthier as a result of exercising induced a progress representation of working out, which decreased their subsequent interest in congruent actions (e.g., healthful eating). Asking gym members whether they were expressing their commitment to being healthy by exercising induced a commitment representation of working out, which increased their subsequent interest in congruent actions (Fishbach & Dhar, 2005; Zhang et al., 2007). In this and other studies, the framing questions led participants to ask themselves about commitment or progress. They then inferred either goal commitment or goal progress from their successful actions and,

correspondingly, inferred either low commitment or lack of progress from unsuccessful actions. In other words, the questions that participants were led to ask themselves and then answer influenced the dynamic of self-regulation that they follow.

Committed versus uncommitted individuals. People vary in whether they seek information about their level of commitment or about the remaining progress needed for goal attainment. In particular, when the commitment to a goal is uncertain, people ask themselves whether the goal is important, attainable, or worth pursuing further. For example, a person's assessment of his or her commitment level influences the decision to make a first-time contribution to a charity or to study for a relatively unimportant course. In such situations, a person's assessment of whether the cause of the charity is valuable or whether it is worth studying for a course determines his or her motivation to work on these goals. In contrast, when commitment is certain and known to be high, people are less concerned with evaluating the commitment to the goal and instead focus on evaluating the level of progress toward the goal and the remaining efforts to accomplish the goal. For example, estimates of progress toward goal completion increase a person's motivation to make a repeated contribution to a familiar and valuable charity or to study for a highly important course. In such situations, where goal commitment is already high, people are more likely to donate or to study if they experience a lack of progress on the goal.

We have proposed that accomplished actions increase motivation to adhere to a goal when they signal commitment and unaccomplished actions increase motivation to adhere to a goal when they signal lack of goal progress. It follows that when commitment is uncertain and people ask whether the goal is important, they will adhere to a goal if they consider their accomplished actions (vs. unaccomplished actions), which suggest higher commitment to the

goal. But committed self-regulators, who ask about their level of progress, will be more likely to adhere to a goal if they consider their unaccomplished actions (vs. accomplished actions), which suggest more distance to goal attainment.

In studies that tested these predictions, Koo and Fishbach (in press) used goals with a clear end states and examined how the focus on either the accumulated amount of progress to date, or the remaining amount of progress to go, influences goal adherence. In one study, participants rated their motivation to study for a core course, to which their commitment was certain, or an elective course, to which their commitment was uncertain, as a function of the information they received: either that they had accomplished 50% of the coursework to date, or they had another 50% of their coursework to go. Although the objective level of accomplishment was identical (50%), emphasizing the amount of completed (vs. remaining) coursework increased students' motivation to study for an elective course because it implied that studying for the exam was valuable. Conversely, emphasizing the remaining coursework to be completed (vs. completed coursework) increased students' motivation to study for a core class because it implied lack of progress (Koo & Fishbach, in press, Study 1).

Individuals regulate not only their own personal goals, but at time, they jointly invest efforts with other members of their social group toward a common, social goal, such as when making contributions to a charity. The pursuit of social goals may then follow dynamics similar to those at work in the pursuit of personal goals; that is, a person may want to evaluate either whether the social goal is worth supporting (i.e., commitment) or whether additional efforts are needed to accomplish the goal (i.e., lack of progress). People infer goal commitment on the basis of others' accomplished actions or present contributions, which increase goal adherence through

highlighting; and they infer lack of goal progress on the basis of others' unaccomplished actions or lack of contributions, which increase goal adherence through balancing.

A field study that demonstrated these effects used an actual fundraising campaign conducted by Compassion Korea, a charity organization dedicated to helping children in developing countries. With the cooperation of the South Korean office of Compassion International, Koo and Fishbach (in press; Study 4) created a campaign to support AIDS orphans in Africa. The solicited population included people who had never made contributions to Compassion (uncertain commitment) and regular donors who were making monthly donations of \$35 to this charity (certain commitment). All those solicited learned that the campaign goal was to raise 10 million won (about US\$10,000) to help AIDS orphans in Africa and that approximately half the money had already been raised through various channels. Half of the participants received a solicitation letter that emphasized accomplished actions, that is, how much had been donated, and the other half received a letter that emphasized unaccomplished actions, that is, how much was still required to achieve the campaign goal. As predicted, among first-time donors (uncertain commitment), an emphasis on accomplished actions (50% to date) increased the frequency and the average amount of donations more than an emphasis on unaccomplished actions (50% to go). However, among regular donors (certain commitment), an emphasis on unaccomplished actions (50% to go) increased the frequency and the average amount of donations more than an emphasis on accomplished actions (50% to date).

It appears that regardless of the goal type, personal or social, whether people's motivation is driven by commitment or by lack of progress depends on the information they seek as a function of their a-priori level of commitment. Those who wish to evaluate their level of commitment are more likely to adhere to a goal if they consider accomplished actions, which

establish goal commitment; thus, they follow a pattern of highlighting the pursuit of the focal goal. Those who wish to evaluate their level of progress are more likely to adhere to a goal if they consider unaccomplished actions, which suggest distance needs to be covered; thus they follow a pattern of balancing between past goal actions and present ones.

The Information in the Goal Actions

The previous section addressed the perceiver's influence on the representation of goals and the resultant dynamic of self-regulation. We proposed that whether people ask about goal commitment or goal progress influences their pattern of self-regulation. This section addresses how the characteristics of choice sets can influence the dynamic of self-regulation that people follow. We propose that the dynamic of self-regulation depends on the relative salience of the overall goal versus that of specific actions, and the presentation of goal actions as either competing with or complementing each other.

Overall goal accessibility. People often break an overall goal into specific actions or subgoals as an adaptive self-regulatory response (Carver & Scheier, 1990; Gollwitzer, 1999; Shah & Kruglanski, 2003). In the course of self-regulation, they can then focus on the abstract, overall goal that initiated the action or on the concrete action that was initiated (Trope & Liberman, 2003; Vallacher & Wegner, 1987; see also chapter by Eyal, Liberman & Trope). When people focus on attainment of the concrete action itself, they experience some of the benefits associated with goal fulfillment, which elicits a sense of progress or partial goal attainment. This can motivate them to move temporarily away from the goal and to attend to other neglected goals that have not progressed as much, through the dynamic of balancing. However, when the focus is on a more abstract, overall goal, this same level of successful attainment does not elicit the same sense of partial fulfillment but instead indicates a person's

higher commitment to the goal that initiated the action, and thus promotes reinforcement of this goal through the dynamic of highlighting.

Fishbach et al. (2006, Study 3) tested this idea by giving participants an opportunity to work on two independent scrambled-sentence tasks that represented two subgoals toward an academic achievement goal. After completing the first task, participants received bogus feedback on their low or high success and were then asked to complete a second task, which had no correct solutions. Participants' persistence on the second task indicated their performance motivation on this unsolvable task (Muraven, Tice, & Baumeister, 1998). In itself, high-success (vs. low-success) feedback on one task reduced the motivation to persist on a similar task. Quitting earlier after high (vs. low) success reflects the dynamic of balancing; a pattern that further replicates previous findings on means substitution (e.g., Shah & Kruglanski, 2002). However, in another experimental condition, the first scrambled-sentence task activated participants' abstract achievement goal outside their conscious awareness by including words such as "succeed," "master," and "accomplished" (see Bargh & Chartrand, 2000; Srull & Wyer, 1979). For these participants, high-success (vs. low-success) feedback on the first task elicited greater motivation to persist on the second, unsolvable task, a pattern that reflects the dynamic of highlighting.

In addition to the accessibility of an overall goal, any other variable that influences the relative focus on concrete goal-related actions versus abstract overall goals could influence the dynamic of self-regulation. For example, because actions that are temporally distant are represented in terms of more abstract goals than actions that are temporally proximal (e.g., Trope & Liberman, 2003), temporal distance could determine the relative focus on goal progress, for proximal actions, versus goal commitment, for distant actions. Accordingly, Fishbach et al.

(2006; Study 4; see also Zhang et al. 2007, Study 4) found that actions scheduled for the near future signaled partial attainment, thus leading to more goal-incongruent actions in the present. Conversely, the same actions, when scheduled for the distant future, signaled commitment to an overall goal, thus leading to more goal-congruent actions in the present. For example, students represented studying for an exam in the near future (tomorrow) as accomplishment of an academic task, but studying for an exam in the distant future (next month) as commitment to an academic goal. In turn, thinking about studying in the distant future (vs. near future) increased the amount of time participants intended to spend studying for another exam, which is another means to the same overall goal of academic success.

Recall that, whereas initial success motivates a choice of similar actions when it signals goal commitment, when a failure to pursue certain goals is indicative of low goal commitment, it decreases the motivation to work on a goal. In addition, whereas initial success undermines one's motivation when it signals progress, when failure signals lack of progress, it increases the motivation to work harder toward the goal to make it up. It follows that success motivates more goal-congruent actions if a person focuses on the abstract goal, whereas failure motivates more goal-congruent actions if a person focuses on concrete actions. In support of this hypothesis, Fishbach et al. (2006, Study 2) gave gym users positive versus negative feedback on their workout frequency and then measured their interest in the congruent action of healthful eating. The feedback was manipulated by asking gym users to list the amount of time they exercised over the previous week on a survey form that had been previously filled out (presumably by another participant) and partially erased, but still legible. In this partially completed survey (e.g., Simonson et al., 1993), a fictitious gym user listed either a small or a large amount of time he or she had exercised, which made participants feel that they were doing relatively well or not so

well, compared with that person. In addition, half of the participants were primed with the abstract goal of keeping in shape—they were given a hardcover book on health to use as their clipboard to complete the survey. The rest of the participants used a phonebook as their clipboard (control condition). This study found that positive (vs. negative) feedback increased participants' interest in healthful eating when the abstract goal of keeping in shape was primed. However, negative (vs. positive) feedback increased participants' interest in healthful food when they focused on the action itself, in the no-priming, control condition.

In the studies reviewed thus far, initial actions (or expected actions) influenced people's subsequent choices of actions that pursued the same goal. We now turn to research that illustrates these dynamics of self-regulation in situations in which there is no initial action. In this case, the representation of goals in terms of commitment or progress and the resultant tendency to highlight versus balance are influenced by the arrangement of the action alternatives and do not require an initial action and action framing.

When goal actions complement versus compete. People often make selections from choice sets that include options that serve multiple underlying goals. For example, people browse a television guide that includes educational shows and funny sitcoms, they go through high-brow news magazines and low-brow fashion magazines on a newsstand, and they order dinner from a menu that has both healthful and unhealthful courses. In such situations, the presence of the choice alternatives simultaneously activates multiple goals (Shah & Kruglanski, 2003), and the arrangement of the choice alternatives influences the dynamics of self-regulation (Fishbach & Zhang, in press). Specifically, choice alternatives that are presented together, as part of a unified choice set, seem to complement each other and promote the dynamic of balancing among the underlying goals. Choice alternatives that are presented apart, in two separate choice sets that are

organized by the underlying goals, seem to compete against each other and promote the dynamic of highlighting the more important goal.

The perception of goals as complementing or competing has unique implications for how people resolve self-control conflicts between high-order goals and low-order temptations (Baumeister, Heatherton, & Tice, 1994; Kuhl & Beckmann, 1985; Loewenstein, 1996; Metcalfe & Mischel, 1999; Rachlin, 1997; Trope & Fishbach, 2000). When choice alternatives that represent goals and temptations appear together and seem to complement each other, a person favors the immediately gratifying temptation, because the complementary relationship promotes the dynamic of balancing both pursuits. In such a sequence, a person could maximize the attainment by showing an immediate preference for the tempting option, which has higher value in the present, while holding an intention to choose a goal item with the delayed value at the next opportunity. As a result of this balancing pattern—first temptation, then goal—people assign a greater value to tempting alternatives than to goal alternatives and prefer these tempting alternatives for immediate consumption. For example, in this situation, people would prefer watching sitcoms or reading low-brow fashion magazines.

But if the choice alternatives that represent goals and temptations are presented separately and against each other, they foster a sense of competition and promote the dynamic of highlighting of the more important goal. In these situations, people believe that one goal will only be attained at the cost of the other, and they expect to maximize the attainment by highlighting the higher order goal across several choices. As a result, people assign a greater value to goal alternatives than to tempting alternatives and prefer these goal alternatives for immediate consumption. For example, in this situation, people would prefer watching educational shows, or reading news magazines.

In support of these predictions, Fishbach and Zhang (in press, Study 1) found that when healthful and unhealthy (yet tasty) food items appeared together in one image (e.g., a photo of a burger among tomatoes; a can of Coke among berries), they seemed to complement each other and primed balancing. As a result, participants evaluated the unhealthy items (e.g., burger, Coke) more positively than the healthful items (tomatoes, berries). However, when the same items were shown apart, in two separate images next to each other, they seemed to compete against each other and primed highlighting. As a result, participants evaluated the healthful items more positively than the unhealthy items. Follow-up studies assessed people's choices among these alternatives, which were depicted either together in one set or apart in two sets. These studies found that when healthful and unhealthy menu courses were presented together on a menu, the majority of the participants preferred to order an unhealthy entrée for immediate consumption and a more healthful dessert for delayed consumption; this choice sequence represents balancing. However, when the same food options were depicted in two separate parts of the menu—one exclusively for healthful and the other exclusively for unhealthy courses—the majority of the participants preferred to order the healthful entrée and dessert, thus choosing to highlight the more important health goal (Fishbach & Zhang, in press, Study 4).

It appears that the presentation of choice alternatives can directly prime a tendency to balance among underlying goals or to highlight the most important one over successive choices. Notably, in self-control situations, balancing may imply that a person is more likely to resolve the conflict in favor of the temptation in the present. Then, to the extent that a person's choices for the future are not binding, the dynamic of balancing may potentially result in a repeated choice of tempting alternatives while repeatedly postponing of the goal alternatives to the future. For example, a dieter may plan to balance between weight loss and food enjoyment but end up

always planning to start the diet tomorrow. As this example illustrates, balancing can be less adaptive in self-control dilemmas, since individuals might not actually balance but rather postpone the goal. In these situations, a dynamic of highlighting of the overall goal would be more adaptive since it requires exercising self-control in the present and adhering to the goal across successive choice.

Conclusions

This chapter considered the theory and research on the dynamics of self-regulation (e.g., Fishbach & Dhar, 2005; Fishbach et al., 2006; Fishbach & Zhang, in press; Koo & Fishbach, in press; Zhang et al., 2007). We explored two basic dynamics of self-regulation when people hold multiple goals: the dynamic of highlighting a single goal, which is based on a commitment representation of goals, and the dynamic of balancing among multiple goals, which is based on a progress representation of goals. We further identified two distinct factors that increase the motivation to adhere to a goal: a motivation that is based on the experience of goal commitment and a motivation that is based on the experience of lack of goal progress or a discrepancy between the present and desired states.

Several predictions follow from our theory, and goal research has consistently supported them. First, perceiving an initial action as indicative of commitment promotes the choice of similar subsequent actions and inhibits the choice of actions that serve other goals (e.g., Shah, et al., 2003). Perceiving the same initial action as being indicative of progress promotes the subsequent choice of actions that pursue other goals (e.g., Monin & Miller, 2001; Kahn & Dhar, 2006). These different representations of goals can account for the discrepancy in the literature between goal pursuits that commit one to pursue congruent actions and goal pursuits that liberate one to pursue incongruent actions. Second, planned actions for the future (e.g., planned

workouts) exert a similar impact as accomplished actions (e.g., past workouts), and both of them influence present actions that either emphasize the same focal goal or balance between this focal goal and alternative ones. Moreover, because the amount of the goal pursuit under consideration determines the magnitude of its impact on the motivation to pursue the goal in the present, optimistic plans for future can have a greater impact than less optimistic plans or recollection of past accomplishments. Third, people's feelings provide information for self-regulation. Negative feelings motivate goal adherence when they signal a lack of progress, whereas positive feelings motivate goal-congruent actions when they signal high commitment.

We further proposed several variables that influence whether initial goal-congruent actions increase the commitment to or liberate from the overall goal. First, the dynamic of self-regulation depends on the information that the perceiver seeks: whether he or she asks about commitment to the goal or progress needed for goal attainment. Accomplished actions or successes motivate people who seek information on goal commitment (see also, Bem, 1972; Cialdini, Trost, & Newsom, 1995), but they undermine the motivation of people who seek information on their level of progress. Unaccomplished actions or failures motivate committed people who seek information on goal progress (e.g., Bandura, 1991; Carver & Scheier, 1998; Higgins, 1987, 1997; Locke & Latham, 1990; Miller, Galanter, & Pribram, 1960), but they undermine the motivation of those who seek information on their level of commitment. Therefore, the degree of certainty in one's commitment determines whether accomplished or unaccomplished actions are more effective in motivating more actions.

Second, the dynamics of self-regulation depend on the information that is in the choice alternatives. Thus, when people focus on the abstract goal, completed actions signal commitment and increase the likelihood of choosing complementary actions that serve the same goal. When

people focus on the specific action, completed actions signal progress; thus, they decrease the likelihood of choosing complementary actions. One conclusion is that setting specific action plans or subgoals may secure the attainment of these subgoals (see also, implementation intentions; Gollwitzer, 1999) but can potentially hinder other subgoals that serve the same overall goal. This undermining effect is more likely if people focus too much on their specific plans and substitute their initial accomplishment for overall goal attainment (e.g., Byrne & Bovair, 1997).

In addition, the dynamic of self-regulation depends on the representation of choice alternatives that serve different goals (e.g., healthful and unhealthful menu courses) as competing against each other or complementing each other. Presenting choice alternatives together in a unified choice set fosters the perception that these options complement each other and thus promotes the dynamic of balancing among the underlying goals. In self-control situations, this dynamic increases the preference for tempting alternatives. Presenting choice alternatives apart, in separate sets that are organized by the underlying goals, elicits the perception that these options compete against each other and thus promotes the dynamic of highlighting the more important goal. This dynamic increases the preference for alternatives that serve high-order goals.

There are likely to be other variables that influence the representation of goals and the dynamic of self-regulation. For example, it is possible that people's implicit theories (Schwarz, 2004; Wyer, 2004) influence the chronic activation of certain goal representations. As initial support for this idea, a recent study has found that gym users vary in the extent to which they represent working out as expressing commitment to or making progress toward a health goal (Zhang et al., 2007). Moreover, these dynamics of self-regulation have implications for variables

beyond the current scope of this chapter. For example, the relative focus on commitment versus progress may have implications for people's levels of aspiration with regard to a single goal (Lewin, Dembo, Festinger, & Sears, 1944). People who focus on the progress that results from their actions and view goal pursuit as a continuous movement are more likely to set high aspiration levels and continue to escalate them than are those who focus on the commitment that results from their actions and view goals as a state of preference or value.

It is further possible that, whereas a commitment representation of goals dominates the initiation of goal-related actions, a progress representation of goals dominates its subsequent pursuit. The result is that for many goals, the initial pursuit is motivated by accomplished actions and inferences of commitment, whereas subsequent pursuits are motivated by unaccomplished actions and inferences of a lack of progress. For example, an amateur pianist may practice piano because he or she has already mastered a particular musical piece, and the initial success establishes commitment to this skill. However, an experienced pianist may practice mainly because he or she has not yet mastered a particular piece and would like to continue to improve.

Finally, social agents, such as educators, managers and marketers, may benefit from considering the information that people derive from goal-related actions—commitment or progress—and the implications of goal representations for subsequent self-regulation. For example, it is possible that mandatory goal pursuits or imposed choice, such as banning unhealthy products, signals to people that they have made progress toward a goal without them experiencing the corresponding boost in goal commitment because the goal actions were not voluntarily selected. In such situations, imposed choices may be effective in the short run but will promote balancing between the goal that was progressed toward and alternative goals and eventually may decrease the likelihood of making complementary, voluntary choices. This may

undermine the pursuit of the intended goal by promoting unhealthy behaviors. On the other hand, when people work on a goal without making any progress, for example, when they invest effort in a futile cause, in sunk-cost situations (Arkes & Ayton, 1999; Arkes & Blumer, 1985), they may experience commitment without progress. Such an experience should be effective in increasing commitment and motivating the voluntary choice of similar complementary actions that pursue the same goal.

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Figure 1: Dynamics of Self-Regulation

