Society for the science of Motivation Presidential Address:

Can we Harness Motivation Science to Motivate Ourselves?

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Abstract

This article explores self-motivation. I ask how people can strategically manipulate their circumstances to motivate themselves to reach their own goals. I first identify four areas of motivation research, including (a) setting a goal, (b) sustaining motivation through progress feedback, (c) managing multiple, competing goals, and (d) leveraging social support. I then describe some of the main principles that govern motivation under each of these areas and how people can use these principles to motivate themselves to reach their own goals. I discuss the implications of discoveries in motivation science on how to motivate others to the study of self-motivation and how people motivate themselves.
Motivation science has a long history as the study of how to motivate others. From rats running a maze (Skinner, 1965) to children drawing pictures (Lepper, Greene, Nisbett, 1973) to employees meeting deadlines (Locke & Latham, 1990; 2019), the question we usually asked, as a field, was how to motivate them. They may have endorsed the goal, as in motivating people to adhere to their workout regimen or encouraging college students to complete their degree. Other times, they were never asked and had no say about the intervention. For example, children or, alternatively, employees, do not usually opt into interventions meant to increase their productivity. Whether the subject of the intervention wants to change their behavior was considered a nonessential, ethical debate (e.g., Thaler & Sunstein, 2003’s discussion of libertarian paternalism).

Despite the history of motivation science focusing on motivating others (with notable exceptions), many of the insights we have gleaned can be used to motivate oneself (i.e., self-motivation). On the one hand, self-motivation seems like an oxymoron. If a person wishes to perform a behavior, they should go ahead. The “planner” should not be more motivated than the “doer” (Thaler & Shefrin, 1981); they are one and the same. Further, a person should not stand in their own way. While external circumstances can certainly undermine a person’s ability to exercise this afternoon, they themselves should not be that obstacle. Yet, people often are their own obstacle.

A prime example comes from the study of self-control. When exercising self-control, people motivate themselves to adhere to what they believe they ought to do (e.g., healthy eating, saving, working, safe sex) and forgo what they desire to do instead (e.g., eat, drink, sleep, smoke, use social media, spend money, have sex; Hofmann et al., 2012). Beyond self-control, self-motivation plays a role in goal setting, striving toward a goal, navigating multiple goals, and in securing social support for a goal. This article accordingly reviews some insights from research in motivation by my team and others and explores their implications for self-motivation.

The four elements of motivation

Behavioral change requires modifying the situation or the representation of the situation in which the behavior occurs. This basic principle—changing behavior by modifying the situation—runs through the social sciences (e.g., psychology, economics, sociology, and anthropology). In motivation science, this principle implies that certain situations make adhering to a goal more likely. To motivate people, including oneself, all interventions therefore start with either changing the situation or changing the mental representation of the situation. Setting an alarm clock changes the situation once it goes off. Setting a goal target to walk 10,000 steps changes the meaning of walking 9,900 versus 10,100 steps in a single day.

The specific change to the situation depends on the challenge a person is facing. Motivational interventions can be broken into four areas which correspond to the four challenges in successful goal pursuit. I refer to these as the four elements of motivation. First, there is goal setting. People might broadly want to prosper, pursue mental and physical health, but these vague motivations are less likely to guide behavior unless they are associated with a specific goal (e.g., get a job, start exercising). A goal marks a destination: avoiding an undesirable state, maintaining the current state, or advancing toward a desirable state.

Second, there is goal striving. To achieve their goals, people need to monitor their progress, knowing when to increase (or decrease) their efforts. They further rely on progress

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1 Self-regulation is a concept related to self-motivation. It refers to the ability to regulate one’s own responses to the situation (e.g., controlling one’s emotional response or shooting a ball to the basket) but does not capture the process of strategically manipulating one’s own motivations.
feedback, both positive and negative. The third element is goal juggling, managing priorities between multiple goals (e.g., career and family). The challenge is to resolve goal conflicts and, when the conflict poses a self-control dilemma, to resolve it in favor of the more important goals. The fourth element is leveraging social support. Given most goals require help from others and are easier in the presence of others, working with others and soliciting their support as observers are critical for success.

In what follows, I describe some of the principles that my and others’ research revealed, which guide motivation within each of these elements and discuss the implications for self-motivation (for a summary, see Table 1).

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Table 1: The four elements of motivation and the principles that guide motivation within each element

A. Goal setting

Setting a goal; not a chore. Several principles govern successful goal setting. The first involves setting a goal that is not a chore. Pursuing a goal successfully has positive value (e.g., it feels exciting or relieving). Yet when setting proxies or means to another goal, pursuing the goal would feel like a chore and be less motivating. This is the reason people dislike paying shipping costs or, alternatively, parking. Both are means to a goal.

In an experiment we conducted with MBA students (Shaddy & Fishbach, 2018), we explored nonnormative consequences of the preference to invest in goals over means. In one condition, we auctioned an autographed book. The average bid for the book was $23. In another condition, we auctioned a university branded tote bag, which contained the same autographed book. Although students were technically bidding on the bag, their overall deal was economically superior (a book and a bag). Yet, the average bidder was willing to pay only $12
(in economic terms, this implies that the value of the bag was $-11). The reason? People do not want to invest in means (a bag’s purpose is to carry a book).

The desire to invest in goals, not chores, is also one reason why abstract goals are often more motivating than concrete goals (Trope & Liberman, 2010; though too abstract goals can undermine motivation, Freund & Hennecke, 2015), and why avoidance goals are notoriously hard to pursue. Trying not to think about one’s ex is harder than trying to think about one’s current partner (Wegner, 1994). With the exception of prevention goals, for which avoiding a negative state is a better fit than approaching the opposite state (Higgins, 2005), approach goals seem less like a chore.

Applying this understanding to self-motivation, people could set their goal in terms of the ultimate destination rather than the means to get there. For example, it is better to think of a goal as “making a discovery” rather than “collecting data.” Though these are two descriptions of the same goal, making a discovery is the desirable outcome while collecting the data is only the means.

**Numerical targets.** Much of the work on goal setting involves the numbers people put on their goals when deciding how much or how quickly. I refer to this number as the goal “target.”

Work on goal setting theory has explored several criteria for successful target setting. Locke and Latham (1990; 2019) discovered that targets are more effective when they are specific, measurable, attainable, relevant, and time-bound (also captured in the acronym, SMART). Atkinson’s achievement theory (Atkinson, 1957) argued that intermediate but difficult tasks result in stronger motivation than very easy and very difficult tasks. It follows that goal targets should be challenging—attainable but not guaranteed. And work on energization theory (Brehm & Self, 1989) confirms that a difficult target evokes more physiological arousal and readiness to act compared with either easy or impossible targets, and as long as the effort seems justifiable.

But why are numerical targets beneficial in the first place? One reason is that they make it easier to monitor progress toward closing a discrepancy with a desirable state (consistent with the TOTE model, Miller, Galanter, & Pribram, 1960). Another reason is that once a target is set, people care deeply to reach it. If a person set a deadline to complete a project at work for the end of the month, she will be disappointed if she finishes the project one day too late but not much happier if she finishes one day too early (Health, Larrick & Wu, 1999). Her emotional response corresponds to Kahneman and Tversky’s loss-aversion principle (1979). By this principle, people care to avoid falling behind (not meeting a target) more than they care to fall to exceed their expectations (not going above the target).

Goal targets are often self-set. An illustrative study (Allen et al. 2016) analyzed finishing times from around 10 million marathon runners. The (largely normal) distribution of finishing times spiked just before the hour and half an hour marks. That is, more runners finish just below these times than just after them. For example, many runners finished just below 4 hours and relatively few finished just above 4 hours. The reason? 4 hours is many runners’ target and they do not want to miss it. These targets are self-set and they motivate runners by the same principle that managers’ targets motivate employees or teachers’ targets motivate students.

Students also use self-set targets (e.g., deadlines) for themselves to motivate academic pursuits (Ariely & Wertenbroch, 2002). But rather than setting inflexible targets (e.g., harsh deadlines), students often state optimistic expectations. By stating an intention to do more or do it quickly, they motivate themselves to work while not risking too much if they fail to do so.
To study such strategic optimism, Ying Zhang and I (2010) asked students to complete a take home assignment. Half of them learned the assignment was difficult while the other half learned it was easy. As we predicted, those expecting a difficult assignment said they would finish it earlier than those expecting an easy assignment. Expecting a challenging task, students set a goal to finish it earlier. This way, they could motivate themselves to start working sooner.

We referred to this pattern as counteractive optimism. Interestingly, we only observed such optimism when the cost of failing to meet a self-imposed deadline was minimal. When we emphasized to participants that they ought to be accurate, those who expected a more difficult homework set later deadlines for themselves. This provides further evidence that setting earlier deadlines for more difficult tasks was intended to motivate the self. Once meeting the deadline became a goal in its own right, students were no longer using deadlines to motivate themselves.

When comparing self-set to externally imposed targets, self-set targets have a clear advantage. While externally imposed goals tend to invoke psychological reactance (Brehm, 1966; Rosenberg & Siegel, 2018), people are less likely to rebel against the targets they have set for themselves. Moreover, the experience of free choice when setting goals for the self satisfies the need for autonomy (Ryan & Deci, 2006) and further enhances effort investment, task performance, and intrinsic motivation more broadly (Patall, Cooper & Robinson, 2008).

Incentives. A third principle involves setting incentives. Incentives were researched extensively. Behaviorists study incentives using rats and mazes to model the processes involved in learning. Economists and organizational psychologists study incentives in order to increase people’s productivity. Social and developmental psychologists study incentives in order to understand motivation. And while much of the work on incentives is in the context of motivating others, it still has implications for motivating the self.

Incentives act like goals. At times, the incentive is the only goal for performing an activity (e.g., an unpleasant, paid work). Yet most incentives are mini-goals—they provide an extra reason for pursuing an activity. For example, while a main reason not to park in a space reserved for disabled people is out of kindness or respect to the law, an additional reason is to avoid paying the fine.

Incentives can undermine or obscure the original purpose for pursuing an activity. According to the dilution effect, when an activity serves more than one goal, the mental association between the activity and each of the goals that it serves gets diluted. As a result, the activity seems less instrumental for each of these goals (Zhang et al., 2007). So, for example, research on the over-justification effect (Lepper et al., 1973) revealed that rewarding children for drawing decreased their interest in drawing once the reward was removed.

Adding in incentives also dilutes the original goal for pursuing an activity while the incentives are still in place. Indeed, telling young children (3-5 year olds) that carrots or crackers deliver benefits beyond good state (e.g., help them to read or count) reduced consumption of these foods (Maimaran & Fishbach, 2014). A similar effect was observed with college students, who were less interested in eating healthy cafeteria foods when the health benefits were emphasized (Turnwald et al., 2019). But notably, these effects of incentives can be short-lived (Goswami & Urminsky, 2017) and they are more likely for those who are unsure about the original goal for pursuing the activity (e.g., young children who are unsure whether they like drawing or some foods).

There is some (limited) evidence that self-set incentives are effective for meaningfully changing behavior (Brown et al., 2018). Though people often intuitively set incentives when they promise themselves small rewards for completing their daily tasks (e.g., a latte after a workout,
or a glass of wine by the end of a productive workday), the effectiveness of these rewards might be hard to evaluate in research. Perhaps, it is more common to opt into an existing incentive system.

Research on incentives further revealed that uncertain incentives are more motivating than certain ones. Intermittent reinforcement is effective because it makes it harder to realize that the reward is no longer there. Uncertain rewards can also signal a challenge and increase achievement motivation. Moreover, uncertain incentives are exciting; they encourage most people to work harder (Goldsmith & Amir, 2010; Shen, Fishbach, & Hsee, 2015). For example, in one study, we offered students a monetary prize if they could drink 1.4 liters (about 1.48 quarts) of water in 2 minutes or less. More people met the challenge when the reward was uncertain (either $2 or $1, to be determined randomly) than when it was certain ($2 fixed), even though the expected value of the uncertain reward was lower. But, while uncertain incentives increase motivation, people value certainty. Therefore, when motivating themselves, people often opt for a certain incentive system, not realizing that uncertain incentives are more effective.

**Intrinsic motivation.** The fourth principle of goal setting involves recruiting intrinsic motivation. When setting a goal, the extent to which it is intrinsically motivated will predict engagement and ultimately, achievement (Cerasoli, Nicklin & Ford, 2014). Yet, what does it mean to be intrinsically motivated? People are intrinsically motivated when pursuing an activity as an end in itself (Deci & Ryan 1985; Fishbach, Shah, & Kruglanski, 2004; Fishbach & Woolley, working paper; Kruglanski et al., 2018). They cannot separate pursuing the activity from receiving its benefits. When a person loves her job or finds her exercise regimen calming, she is intrinsically motivated. She goes to work or exercises because she wants to; not because she wishes to satisfy some ulterior motive. In contrast, if her job helps her make ends meet and exercising satisfies her physician’s request, her intrinsic motivation is low.

Goals vary by the extent to which they are intrinsically motivating. Further, according to the **means-end fusion model (MEF)**, the pursuit of both innate motives (e.g., relatedness, competence and autonomy, Deci & Ryan, 2004) and learned ones (e.g., pursuit of money) can become more intrinsic. For example, gamblers are intrinsically motivated to pursue monetary rewards. Further, the same activity can become more or less intrinsically motivating, depending on whether the person is focused on what they achieve while as opposed to by pursuing it.

The degree of instrinsicity, in turn, predicts engagement. Woolley and I (2017) found evidence for this across a variety of goal domains. Immediate pleasure from pursuing a goal predicted time spent studying in the library, time spent exercising in the gym, consumption of healthy food, and persistence with New Year’s resolutions three months after these resolutions were set, to name just a few. Interestingly, the degree to which these activities were rated as important had little effect on engagement. While people initiate activities that seem important, they persist only if they can make these activities enjoyable.

To set intrinsic goals, people need to be aware of the power of intrinsic motivation. Yet, they underestimate it. In one experiment, we asked participants to choose between listening to the song “Hey Jude” by the Beatles and listening to a loud alarm. The alarm sound paid 10% more, and so the majority of participants chose to listen to the alarm. Yet, while at the task, those who listened to the noise were also more likely to regret their decision than those who chose to listen to the lower-paying song. People underpredict how much they will care to be intrinsically motivated and further underpredict how much others care to be intrinsically motivated (Woolley & Fishbach, 2018). These underpredictions matter for self-motivation, as people do not try to increase their intrinsic motivation if they do not think it matters much in the first place.
B. Sustaining motivation

After setting a goal, the next challenge is sustaining motivation on the way there. Kurt Lewin (1926) was the first to suggest that different psychological processes characterize goal setting and goal striving. Later studies confirmed his view. Setting a goal involves careful deliberation and considering alternatives while goal striving requires an implementation mindset that focuses on directing action toward reaching a goal with minimal distraction (see the Rubicon model of action phases; Gollwitzer, 1990; Heckhausen & Gollwitzer, 1987, and the distinction between “choice motivation” and “control motivation,” Kuhl, 1984).

With progress on pursuing a goal, motivation increases. Research on the goal gradient effect documented that rats run the maze faster the closer they get to the food reward by the end of the maze (Hull, 1932), just as café patrons come back more often the closer they are to completing a loyalty card that earns them a free cup of coffee (Kivetz, Urminsky, & Zheng, 2006).

One reason progress increases motivation is that with progress, each action covers a greater proportion of the remaining distance to completing the goal. So, for example, finishing the freshman year in college completes 25% of a 4-year college degree. But finishing the senior year completes 100% of what is left to achieve a college degree. For the person pursuing an academic degree, the motivation to complete the last year is therefore stronger than any year before. This person feels they get more in return for one-year of effort the more progress they have made.

Notably, this analysis only applies for all-or-nothing goals such as completing a college degree, a reward card, or reaching the food by the end of a maze (or a bakery line). For accumulative goals, such as adhering to a weekly workout regimen or reading academic papers, there is no clear end point and there is generally diminishing utility for continuous effort. Each action contributes less than the one that came before it (e.g., the first workout this week contributes more than the 10th workout for one’s health). Yet, with progress, motivation increases. The reason is that pursuing the goal increases commitment. Whether past actions confirm one’s priorities (e.g., self-perception theory, Bem, 1972; and dissonance theory, Festinger, 1957), or signal that achieving the goal is within reach (i.e., feasible), they increase commitment, and hence, motivation.

Mere attention to progress further increases motivation above and beyond actual progress. For example, when people stand in line, they are more excited about the product they are waiting for when they look back at the people behind them than when they look ahead at those who are ahead of them in the line. We documented this effect in an amusement park in Korea (Koo & Fishbach, 2008). As people were queuing in the long line for the park’s signature ride, we asked half of them to estimate the number of people behind them while the other half estimated the number of people ahead. We found that those who estimated the number of people behind them expected the ride to be more enjoyable. In another study, we found that a queue system that provides information on the number of people behind oneself makes people value the product or service (in this case, it was an experimental task) more than one that provides information on the number of people who are ahead. Specifically, participants received ticket numbers that indicated their position in line. Those who saw the numbers available to newcomers who will join the line had more positive evaluations than those who saw which numbers were currently being served.

Yet, while looking back at the glass-half-full was shown to increase motivation, other research found that looking ahead at the glass-half-empty does even better. According to
discrepancy theories (e.g., Carver & Scheier, 1990; Higgins, 1989; Miller et al., 1960), people’s sense that they are falling behind motivates action. When people fall short of their expectations, as when they consider the work undone, they are motivated to pursue their goals.

**Dynamics of goal motivation.** Our work on the dynamics of goal motivation (or dynamics of self-regulation, Eskries-Winkler & Fishbach, 2020; Fishbach, Zhang & Koo, 2009) identifies when it is best to monitor progress in terms of completed versus missing actions. We distinguish between two dynamics: “commitment promotes consistency” and “progress promotes balancing.” When actions signal commitment, they tend to reinforce similar actions. In this dynamic, the glass half full increases motivation, as people behave consistently. For example, after a successful midterm, a student is more likely to continue working hard to further excel in the final exam (i.e., highlight a goal). When actions signal that sufficient progress has been made, motivation stems from a lack of progress. In this dynamic, the glass half empty increases motivation. People tend to balance between pursuing the goal and slacking off. Realizing one has not been doing well on a midterm may motivate working harder for the final. But after doing well on the midterm, the student concludes she is ahead and may balance her progress with excessive internet use (e.g., Dunbar, Proeve, Roberts, 2018).

Applying this understanding to self-motivation, people can choose how to mentally frame their actions (and lack of action). Thinking of past achievements as a signal of commitment and construing absence of achievements as a signal for lack of progress will both increase motivation. So, for example, when success at work is taken as a signal of commitment to the profession and lack of success is taken as a signal to work harder, motivation at work increases.

Further, novices or people low on commitment (often these categories overlap) tend to ask about commitment. They ask: do I care about this goal? For them, completed actions increase motivation. In contrast, experts or people who are highly committed tend to ask about progress. They ask: do I move quickly enough? For them, missing actions increase motivation. In one study, some students considered studying for a less important, pass/fail exam, to which their commitment was low. These students were more motivated to study when they considered the materials they had already covered (vs. were yet to cover). In contrast, other students considered studying for an important graded exam, to which their commitment was high. They were motivated to study when they considered the materials they had not covered (vs. covered materials; Koo & Fishbach, 2008).

People seem to have an intuitive sense about the best practices of monitoring progress. Novices seek feedback on completed actions and what they got right (further, people give novices more positive feedback). In contrast, experts seek feedback on missing actions and mistakes (and people are more likely to give experts such feedback; Finkelstein & Fishbach, 2012). People spontaneously consider the glass-half-full when looking to boost their commitment and the glass-half-empty once they feel committed and wish to motivate progress. For example, in one study, people were asked to report where the y were standing on a 7-trial experimental task. Half of them were told it was a practice task, to be completed before the main task (they were novices). These participants tended to report their completed actions (e.g., “I’ve done three,” “I’m halfway through”). The other half thought they were completing the main task and they were more likely to reported how much was left for them (e.g., “there’re three more,” “I’ve half left”; Koo & Fishbach, 2010).

**The middle problem.** People wish to both sustain the motivation to do something and sustain the motivation to do it right. And, while at times doing it fast corresponds to doing it right
(as in completing a race), at other times, these motivations are distinct or even negatively correlated (as in preparing a fancy meal or preparing to give a lecture).

Both the motivation to do something and the motivation to do it right are easier to sustain at the beginning of pursuing a goal than later (e.g., the fresh start effect; Dai, Milkman & Riis, 2014). Further, both become easier toward the end of an all-or-nothing goal with a clear end point. That leaves people with a “middle problem:” it is difficult to sustain motivation in the middle of goal pursuit.

Middle actions seem to have less impact on goal achievement regardless of whether the person monitors progress to-date or remaining progress to-go, so the motivation to get it done decreases. As for the motivation to do it right; it is stronger for actions that reflect on the self and people care about how their actions reflect on their identity more at the beginning and end. The reason is that they expect to notice and remember these actions more than middle ones. Due to the primacy and recency memory effects (Greene, 1986), beginning and end actions are more memorable, and, in turn, people care about what these actions say about their identity as ethical, hardworking individuals.

So, Touré-Tillery and I (2012) found that in the middle of pursuing a goal, people literally cut corners. When we handed our participants a pair of scissors and asked them to cut out five identical shapes (a square with arrows coming out all four sides), they did a better job on the first and last shapes than the three in between. Similarly, we found that people who were planning to follow the religious tradition of lighting the menorah for eight successive nights over the Jewish holiday of Hanukah were more likely to do so on the first and last night than the nights in between. The implication for self-motivation is straightforward: keeping middles short. It is better to set a monthly (vs. annual) saving goal, for example.

**Learning from negative feedback.** People rely on feedback to make progress. Yet, feedback often fails to teach (Kluger & DeNisi, 1996). Learning from feedback is easier when it is positive than when it is negative. Though people care to avoid negative feedback even more than missing out on positive feedback (recall loss aversion), there are cognitive and emotional barriers to learning from negative feedback once it is delivered. Further, even when people learn from failure or negative feedback, they often learn the wrong lesson. So, they might learn that they have little control over their outcomes and give up (i.e., learned helplessness, Seligman, 1972).

The first barrier to learning from failure is cognitive. People do not expect to fail, and therefore they might not take notice of the lesson. They are subject to the conformation bias (Wason, 1968). Incoming information receives more attention if it is congruent with expectations than if it is not and, because people do not expect to fail, it is easy to ignore something one never expected in the first place. For example, investors pay less attention to failed investments than successful ones (Sicherman, Loewenstein, Seppi, & Utkus, 2015).

Moreover, failure requires learning by elimination. If one solution fails, another solution might be right and if one answer is wrong, another answer ought to be right. These mental gymnastics can be confusing. Consider a study in which people were selecting one of three boxes, each containing some unknown amount of money (Eskreis-Winkler & Fishbach, 2020). The three rewards were $.80, $.20 and $-0.01 (they would lose $0.01 if they chose that last box). Prior to choosing a box, participants learned they could find out the location of either the small win ($0.20) or the loss ($-0.01). In this paradigm everyone should ask to reveal the losing box. If they learn about the small win, they would get a small win but if they learn about the loss, they would avoid it and get either the small or large win (with 50% chance each). Nonetheless, around
a third of the participants asked to reveal the small win. Noticing the information in the losing box was harder than realizing the information in the winning box.

The second barrier to learning from failure is emotional. Failure stings, so people tune out and end up not learning much. Consider an experiment in which people learned the correct answer to binary questions by guessing and receiving feedback (Eskreis-Winkler & Fishbach, 2019). They were asked a question (e.g., is a given symbol A. an animal, or B. a non-living object?), guessed the answer and received feedback. After a few minutes, they were tested about their knowledge. Because, in this paradigm, each question had only two possible answers, participants could easily learn the right answer to every question—either because they got it right the first time or because they got it wrong. Despite this, they learned more if they guessed the right answer and received positive feedback. When failure bruises the ego, people disengage from the failed experience and stop learning.

How could people self-motivate themselves to learn from feedback? One solution is to develop (or recall) commitment and expertise. Committed individuals and experts are more likely to learn from negative feedback. Another solution involves training that increases learning from failure. People could develop a growth mindset (Dweck, 2008), reminding oneself that failure helps one grow rather than demonstrate one’s lack of growth. Alternatively, they could intentionally make errors and practice learning from them (e.g., error management training; Keith & Frese, 2008). A third solution involves vicarious learning, that is, learning from observing others’ failures which, by definition, do not sting. Finally, in the wake of failure people can motivate themselves by giving advice to another person. While a failure experience can undermine self-confidence, those who extracted a piece of advice they would give another person (e.g., in the aftermath of failing to study or find a job, or after failing to control their weight, finances, or negative emotions), were more motivated to get back to pursuing these goals (Eskreis-Winkler, Fishbach & Duckworth, 2018).

C. Managing Goal conflicts

People rarely want just one thing and, given the frequent competition between goals, it is no wonder that much of the work on self-motivation falls under resolving goal conflict. Some goal conflicts require self-control; these are conflicts between a high order goal (an ought) and a lower order desire. Other goal conflicts involve deciding between several high-order goals (e.g., whether to pursue a career in business or healthcare) or between several low-order goals (e.g., whether to take a beach or a city vacation). A third category involves conflict between avoiding and approaching the same stimulus (i.e., approach-avoidance conflict, Miller, 1944).

Goal systems theory. The main framework for studying the relationships between conflicting and complementing goals, their means of attainment and their superordinate goals, is goal systems theory (Kruglanski et al., 2002). According to this theory, goals are organized hierarchically, such that each superordinate goal is connected to several goals, which are in turn connected to several means of attainment. For example, “be healthy” is connected to “exercise daily” and “see a therapist” and “exercise daily,” in turn, is connected to “bike to work” and “skip the elevator.”

Within a goal system, some means are “multifinal:” they serve several goals simultaneously, as captured by the saying “feeding two birds with one scone” (the animal-friendly version of the famous idiom). Biking, for instance, can serve both the goals to commute and to exercise. Other means are “equifinal,” they all serve the same goal, as captured by the saying "all roads lead to Rome." For example, biking and running can both serve a fitness goal. Equifinal means are interchangeable, even redundant, and people choose between them. Yet, the
mere presence of equifinal means increases goal commitment. Realizing that there are many ways to workout, have a successful career, or prepare eggs increases confidence that there will be an appropriate way to achieve any of these goals (Etkin & Ratner, 2012).

In a goal system, the motivational principle that governs means choice is that of “maximizing attainment.” According to this principle, multifinal means are superior, as they achieve more goals. Yet, by the principle of dilution (i.e., more links = weaker connection), the risk with multifinal means is that each might seem less instrumental for any specific goal. It is the reason people sometimes prefer “unifinal” means, that is, activities that serve only one goal (e.g., an exercise regimen that does not also offer commuting benefits). It is also the reason “counterfinal” means are popular. These activities undermine some goals (e.g., a mouthwash that stings, Schumpe et al., 2018) and therefore appear especially instrumental for the single goal that they serve.

**Compromising versus prioritizing.** There are two opposite approaches for resolving goal conflicts: either finding the compromise between the goals (e.g., by alternative goal pursuit or by identifying a middle ground) or by prioritizing one goal over the other. Whether people seek to compromise between or prioritize goals partially depends on the dynamic of goal motivation they follow.

In a dynamic of progress-promotes-balancing, people seek the middle ground. In a dynamic of commitment-promotes-consistency, they prioritize one goal over another. So, when a career achievement signals progress on the career goal, the successful employee may choose to attend to other goals (e.g., go home early or take a vacation). But if the same career achievement signals greater commitment to her career, she will choose to spend her holiday weekend in the office to further advance her career.

Many documented choice effects represent one of these strategies—compromising versus prioritizing—for managing conflicting goals (Shaddy, Fishbach, & Simonson, 2021). So, the compromise effect (Simonson 1989) represents a preference for the middle ground, as in choosing a meal that is at least somewhat tasty, healthy, and inexpensive (vs. maximizing on one of these criteria). Variety-seeking similarly represents a desire to satisfy several goals or preferences, though across successive decisions (e.g., having a healthy snack today and a tastier one tomorrow; McAlister & Pessemier 1982). In contrast, when making an identity-based choice, people often choose consistently in line with just one goal, so that they do not communicate a mixed identity. For example, they might always make environmental purchases rather than buying an electric car and balance it out with leaving the lights on all night. And when making decisions that involve sacred (vs. secular) values, people resist compromises, so they avoid “taboo tradeoffs” such as putting a price on a human life (Tetlock, Kristel, Elson, Green, & Lerner 2000).

**Self-control.** The study of self-control provides a straightforward example of how people motivate themselves. There are two steps for success at self-control. First, people need to identify a conflict. And given most temptations pose no risk if exercised in moderation (e.g., a single glass of wine, skipping the gym once), identification is hardly ever trivial. To identify a problem, one should consider a behavioral pattern (Rachlin, 2000) or apply a broad decision frame (i.e., wide bracket, Read et al., 1999). For example, a person who considers overspending on multiple occasions instead of only today might find it easier to realize that overspending is a temptation she needs to resist, just as a person considering overdrinking each night instead of only tonight might be more likely to recognize that alcohol should be consumed in moderation.
A broad decision frame also makes it easier to recognize an ethical conflict. In one study, employees reported lower likelihood of engaging in various questionable work-related behaviors, like calling in sick in order to take the day off or taking office supplies for personal use, if they considered all the times they would be tempted to do so over a course of a year than if they considered only doing it once (Sheldon & Fishbach, 2015).

Considering one’s future self also facilitates conflict identification. Considering one’s future self not only increases caring for that person’s welfare (Bartels & Rips, 2010; Hershfield et al., 2011), but also creates a broad decision frame, which includes every decision between today and the far future. Both effects make it easier to identify temptations in the environment.

Once a conflict has been identified, people respond by exercising self-control. Self-control operations increase the motivational pull of the goal and decrease the motivational pull of temptation. In this way, self-control operations increase the appeal of pursuing the goal (e.g., working out, keeping calm) relative to giving in to temptation (e.g., staying in bed, expressing anger).

Self-control operations either modify the situation or its mental representation. So, for example, a pre-commitment strategy modifies the situation. When shoppers at the grocery store overload their shopping cart with veggies and buy only one pint of ice cream, they pre-commit themselves to eat healthily for the rest of the week. And when students choose a dorm room that is close to the library, and smokers impose fines on themselves for lighting a cigarette (e.g., bet with a friend they will quit smoking), they make it easier to adhere to the goal and harder to give in to temptation.

Strategies that modify the mental representation of the situation involve bolstering the value of the goal and downplaying the value of temptation (Fishbach & Converse, 2010). So, a person may exaggerate the importance of an upcoming exam, or the appeal of her current relationship while downplaying the appeal of a day off or going to a party. Other times, people associate self-conscious positive emotions such as pride with adhering to the goal and self-conscious negative emotions such as guilt and shame with giving in to temptation (Tangney, 1999).

These strategies counteract the negative impact of temptation. According to research on counteractive control, the self-control response is proportional to the strength of an anticipated temptation (Trope & Fishbach, 2000). Consider a person preparing to lift a piece of furniture; knowing it is heavy (vs. light) helps her prepare to approach it with more force. Similarly, knowing the strength of a temptation helps one resist it by exercising self-control. In one study with people who watch their weight, reminders of food temptations (e.g., chocolate) led to more positive evaluation of healthy behaviors (e.g., fitness) while reminders of healthy behaviors led to a more negative evaluation of food temptations (Fishbach, Zhang, & Trope, 2010).

Self-control is often an implicit process. Reminders of temptations bring to mind the goal that overrides them, while reminders of goals suppress the temptation. Thus, one study had participants first list their goal-temptation conflicts (they listed for example “study-basketball,” “faithful-sex”). Next, in a lexical decision task, participants were faster to read their goal-words after the temptation-words were briefly flashed in the same location on the computer screen. They were further slower to recognize temptations when these words followed goal-words (Fishbach, Friedman & Kruglanski, 2003).

Patience. Many goal conflicts involve choosing between a larger-later outcome and a smaller-sooner one (e.g., saving for retirement or a house vs. consuming one’s income in the present). These conflicts require patience (Frederick, Loewenstein, & O’Donoghue, 2002).
Moreover, patience enables emotion self-regulation, as patient people are able to stay calm while waiting (whether in traffic, at the doctor office, or at the DMV; Roberts & Fishbach, 2020).

Patience is both an ability and a preference. People with strong willpower are better able to wait. Indeed, patience in Walter Mischel’s marshmallow test (Mischel, Shoda, & Rodriguez, 1989) was associated with strong willpower (Duckworth, Tsukayama, & Kirby, 2013). But notably, patience is also a preference and more recent research suggests children’s preference to wait might have accounted for their patience in the marshmallow’s test (Watts, Duncan, & Quan, 2018). The preference to wait might result from one’s belief that waiting is worth it. For example, children who trusted that the experimenter will eventually come back with more marshmallows were more likely to wait (Ma, Chen, Xu, Lee, & Heyman, 2018; Michaelson & Munakata, 2016) and adults who trust that good things happen to those who wait are more patient.

Other factors that influence the ability to wait include the objective ease of waiting, including the presence of distractors (e.g., social media for those waiting in line) and how far people are from reaching their goal. Because the desire to complete a goal increases closer to goal attainment, people become less patient the closer they get to the finish line (Roberts & Fishbach, working paper).

In contrast, the preference to wait may also depend on how much people care about the object they are waiting for. If they like something, they might decide to wait for a better version of it. Love, after all, is patient. Indeed, one experiment presented participants with several T-shirt designs and asked them to select and rank their five favorites. Next, participants in a high-liking condition indicated whether they would rather receive their favorite T-shirt in one size too large this week or the correct size in six months. Participants in the low-liking group answered the same question, but regarding the shirt they’d rated as their fifth-favorite. People in the high-liking condition were significantly more willing to wait for the correct size; they were more patient (Roberts, Shaddy, & Fishbach, 2020).

To increase their patience, people may actively try to distract themselves or remind themselves how much they like the object they are waiting for. Alternatively, people may put the decision off for a while, as waiting to choose tends to increase patience (Dai & Fishbach 2013). In one study, conducted in a small neighborhood grocery store in the Democratic Republic of Congo (DRC), participants could redeem a coupon for a bag of flour right now or wait and redeem it for five bags in five days. Those who learned about the promotion a day before their coupon could be redeemed were more likely to decide to wait a few extra days for more bags of flour than those who could immediately redeem their coupon (Imas, Kuhn, & Vera Mironova, 2016). While in this study the wait period was externally imposed, people can motivate themselves to wait by postponing the decision. Such a delay will help them forgo the immediate option and wait for a better, delayed one.

D. Social support

Whether a person wishes to find a cure to cancer or start a family, others will be involved. Important goals require both learning from others and sharing the workload with them. Other people in turn, both influence the person’s motivation to achieve certain goals and actively participate in pursuing these goals.

The principle that guides social support is self-other overlap (Aron, Aron, & Smollan 1992). It suggests that the boundaries between the self and others are not clear cut. It explains why it is natural to experience another person’s emotions and why people often use the pronoun “we” to refer to group actions to which they contributed very little personally (e.g., “we won the
game"). The principle of self-other overlap has implications for both pursuing goals in the presence of others and with others.

**Others support the individual’s goals.** When pursuing goals in the presence of others, conformity is expected. By the principle of self-other overlap, when people conform, it is not only because they seek social approval from others (normative conformity) or believe others have figured out the best path or goal to follow (informational conformity; Deutsch & Gerard, 1955). Conformity often stems from the perception that other people’s stated goals and actions are the same as the self’s stated goals and actions. If people believe they hold a goal because others hold it, they will pursue that goal for themselves. For example, if others believe a new diet or fashion is right, a person who is part of their social group will adopt the diet or fashion because she thinks she too believes it is right.

One implication of this analysis is that people will conform to other group members’ stated goals more than others’ actions. In the former case, the person feels as if she stated the goal and wishes to follow it with action. In the latter case, the person feels as if she pursued the goal and can now relax her efforts and attend to other goals, at least temporarily. So, for example, if one’s family member expressed that giving to charity is important, the person will be more likely to give. But if the family member has donated to that charity, the target person might feel that “we” as a family, have already given and feel less urgency to give more. This is one reason people tend to follow others’ online reviews more than online purchases. They would rather watch the clip many liked or buy a highly rated product over watching the clip everybody already watched or buy a product everyone already owns (Tu & Fishbach, 2015).

Recognizing that conformity is greater for stated goals than actions, to self-motivate, people should seek role models who want them to succeed more than role models who are successful. Watching an athlete on television hardly motivates exercising. Watching a trainer who wants people to work out does.

Another way in which others influence motivation is when they observe goal pursuit. The presence of observers can make people work harder (social facilitation), though at times it can also make them choke under pressure (Zajonc, 1965). Moreover, the presence of others magnifies action. Whatever people do in the presence of others would seem to have greater impact. So, for example, in one study, people felt the amount of food they ate in public was larger than how much they ate alone, though the portions were the same. In another study, badminton players believed they had a bigger impact on their team’s success and failure the more people were in the audience (Steinmetz, et al., 2016).

There are other ways people influence each other’s goals. They may set an expectation, as when parents expect their child to do well in school. They may provide resources, as when these parents provide financial support to their child who pursues education. They may also pursue the goal together, as in friends joining a book club. Recognizing the multiple ways people support each other’s goals (Fitzsimons, Finkel, & Vandellen, 2015), people self-motivate by moving toward those who support their goals and away from those who hinder these goals (Fitzsimons & Fishbach, 2010).

**Pursuing group goals.** When group pursue goals together, a main challenge is combating social loafing and free riding. From group projects to paying taxes, groups struggle to keep members motivated to contribute their share (i.e., social loafing). Further, some group members are tempted to take advantage of others’ work without contributing anything at all (i.e., free riding). One solution is making individual contributions public (vs. anonymous). Other
solutions involve increasing group identification and allowing people to inspire other group members with their effort contributions.

The pattern of coordination between group members also matters. Group members often follow a division of labor. For example, married couples divide household responsibilities (e.g., financial responsibilities; Ward & Lynch, 2019, and general knowledge, Wegner, Erber & Raymond, 1991). And in dividing resources, group members often choose to maximize the total benefits for the group rather than dividing equally between group members (Tu, Shaw, & Fishbach, 2016). It is one reason why married couples often choose to advance one person’s career while compromising their spouse’s career. If the total income for the couple is higher when one person accepts a relocation that causes the other person to experience a setback in their career, many couples will prefer this solution over a more equal partnership where both people stay in their current positions and make less money overall. Even friends often prefer an allocation that benefits one person a lot while hurting the other a little because the total for the group is higher. And policy makers often worry about the economic growth in their country in total more than the fair allocation of wealth within their country.

Finally, in pursuing group goals, people again follow one of two dynamics of goal motivation, although this time their actions either follow or complement other group members’ actions. So, when deciding how much to contribute to a charity or a group project, individuals can either give because others are giving or because others are not. They would be more persuaded by learning that others are giving if they take it as a signal that the goal is important and within reach (commitment promotes consistency). They would be more persuaded by missing actions if they take it as evidence that the group is falling behind (lack of progress promotes balancing). Indeed, in a charity campaign to help orphans of the HIV epidemic in Uganda, we found that a message emphasizing existing contributions (“to this point, we have successfully raised $4,920 through various channels”) was more effective than a message emphasizing missing contributions (“we have successfully raised money through various channels and need another $5,080”) among new donors. Those low on commitment gave because they thought others were giving, and hence, that the goal seemed important. In contrast, for regular donors the pattern reversed; they were giving more if they considered how much money was still missing, which made them want to make progress.

Applying this understanding to self-motivation, people seem to follow a sophisticated set of considerations when coordinating efforts with group members. To motivate themselves, they consider what others are doing, as well as what they are not.

**Conclusion**

With an exponential growth in the behavioral science, the work in motivation science has mainly focused on how to motivate others. With notable exceptions, we, as a field, have studies how to influence them.

Do people apply similar tactics and interventions to motivate themselves? Recent research on meta-motivation suggests that they do (Miele, Scholer, & Fujita, 2020). People possess the knowledge on how to motivate themselves and their intuitive tactics largely overlap with scientific knowledge on how to motivate others. Further, research on self-control and self-regulation has identified that motivating the self—just like motivating others—involves changing the situation or the meaning of the situation in which the behavior occurs. Given the fast developments in motivation science, people may be assisted by findings from motivation science, which they can apply to motivate themselves.
A remaining question is whether and in what ways self-motivation is distinct from motivating others. Are there strategies that work better when applied to the self versus others? For example, are external incentives more motivating when applied to others while self-control operations work best when applied to the self?

Possibly, there are systematic differences in the effectiveness of motivational strategies for different targets. Some strategies may benefit from lack of awareness on behalf of the target and they might be more effective for motivating others. For example, reframing strategies might be easier to implement when motivating others. For other interventions, awareness might be a benefit as it could reduce resistance or reactance; these might work better for motivating the self. For example, self-set targets, which are largely aware, were shown to be more effective than targets set by others (Locke & Latham, 2019).

While future research should explore the differences between self- and other-motivation, we already know that the insights from motivation science, including about motivating others, can inform insights into self-motivation. This research tells us how people set goals, help themselves monitor progress and learn from failure. It also tells us how people manage multiple goals and utilize social support to increase their chances as success. The next generation of motivation research can accordingly focus on self-motivation, so that we do not only give people a fish (or a nudge); we also teach them how to fish (or motivate themselves).
References


