

Essay 5.2

Two Routes to the Self-Regulation of Motivation and Goals

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There are many ways we can take control over our motivation and goals. Note that in this essay we distinguish between motivation and goals. “Motivation” refers to the readiness of a person to set or adopt a certain goal. The term “goal” is used in contrast to refer to the readiness to engage in activities that promote the realization of the chosen outcome. For both controlling one’s motivation and one’s goal attainment, people can take the following two routes: the first route pertains to respecting what motivation science has discovered about the determinants of high motivation and effective goal attainment and then establishing these determinants for ourselves or others; as a consequence, our motivation and rate of goal attainment is heightened. The second route pertains to the psychological processes that motivation science has discovered to facilitate the installment of these determinants as well as their beneficial effects. Turning these insights into skillful self-regulation strategies that are then used on a daily basis changes us into individuals who no longer suffer from a lack of motivation or ineffective goal attainment.

The Determinants of Motivation

Based on the learning theory advanced by early animal psychologists (e.g., Hull, 1943), the strength of the tendency to perform a certain response was understood as a function of the following determinants: an organism’s skills, its needs, and the incentive value of the desired outcome. How fast an animal runs toward a box containing food was found to depend on the animal’s knowledge of how to get there, its need for food as expressed in hunger, and the quality and quantity of the food. Over time these determinants of motivation were more cognitively elaborated. Humans apparently weigh the incentive value of the desired outcome (e.g., receiving a good grade in an upcoming math exam at high school) with the expectancy that it would actually occur (i.e., the likelihood of receiving a good grade). Moreover, whether one is confident in successfully performing the actions required to achieve the desired outcome (e.g., learning the assigned materials) is

also factored in (so-called *self-efficacy beliefs*; Bandura, 1997). What also matters is the belief that performing the required actions will indeed lead to the desired outcome (so-called *action-outcome expectations*) and whether achieving the desired outcome will be instrumental to accruing further positive consequences down the road (e.g., being admitted to a prestigious college).

Considering these various expectancy-related variables helps to explicate the *can*-aspect, also referred to as the *feasibility aspect*, of one's motivation: *Can* the desired outcome be brought about (e.g., can I do well on the upcoming exam)? But there is also a *want*-aspect (or *desirability aspect*) of motivation: Do I really want the desired outcome (e.g., how important is it for me to do well on the upcoming exam)? In animal motivation, this desirability issue is captured by both the concept of need and the concept of incentive. With respect to need, the cognitively inspired psychology of motivation ventured into the concept of motives (McClelland, 1985), defined as the class of incentives that a person finds particularly attractive (e.g., achievement, power, affiliation, intimacy). Incentives are more effective in motivating a person when they pertain to a strong motive for that person. With respect to the example of doing well on an upcoming math exam, achievement-motivated students have an advantage because it will be easy for them to come up with strong feelings of anticipated pride; they may more readily anticipate positive self-evaluations (e.g., "I will be proud of myself!") or positive evaluations by others (e.g., praise by one's friends).

The Determinants of Successful Goal Attainment

Given this evolving differentiation in thinking about the determinants of motivation regarding needs, expectancies, and incentives, one may wonder whether the concept of goals is needed at all. But think of a person who is highly motivated to become an artist because the perceived desirability and feasibility are very high. Still, the person may not act on this high motivation as other already existing goals might already take up much time and thus reduce resources in terms of effort, attention, and passion. Accordingly, in order to predict whether people act on their motivations, it seems important to know whether or not they have turned their motivations into goals and how strongly they are committed to realizing these goals. Mischel (1973) suggested early on that goals should thus be assessed in terms of the strength of a person's intention to attain aspired-to outcomes (i.e., in terms of goal commitment).

Extensive research has shown that people more strongly commit to and pursue their goals when both the respective perceived desirability and the perceived feasibility are high (i.e., the underlying motivation is strong). However, goal commitment and goal attainment are determined by further variables. Ryan and Deci (2017) report that when people's goals are related to certain needs such as autonomy, competence, and social integration, then their creativity, cognitive

flexibility, deep processing of relevant information, and effective coping with failure are heightened, which in turn facilitates attaining their goals (i.e., the rate of goal attainment increases). The framing of one's goal also has an enormous impact on goal attainment rates. A host of different types of framings have been found to be relevant. For instance, Locke and Latham (2019) point out that people are more likely to attain challenging goals when they are spelled out in specific terms; goal attainment rates of moderately specific goals or challenging but vague goals (so-called *do your best goals*) are much lower. Also, the framing of one's goals in terms of *approach* versus *avoidance* clearly affects their attainment: striving for the goal of making new friends versus striving for the goal of not being lonely produces satisfaction with one's social bonds versus loneliness.

Dweck (1996) suggested a framing distinction between *performance goals* and *learning goals*. Goals in the academic achievement domain, for example, may focus either on finding out how capable one is (performance goals) or on learning from the task at hand (learning goals). Learning goals lead to better achievement than do performance goals as they allow for a more effective coping with failure feedback than do performance goals. Finally, a person who frames a given task goal in terms of its *identity-relatedness* also has an advantage when it comes to dealing with failure (Gollwitzer & Kirchhof, 1998). For instance, the task of solving a certain math problem can be approached with the goal of solving it effectively or attaining the identity goal of becoming a mathematician. Research shows that people who are committed to identity goals can more easily cope with failing to perform an identity-relevant activity such as solving a given math problem for an aspiring mathematician, because they can always compensate by pointing to alternative indicators of success (e.g., having given a stunning presentation at a math conference). This allows people to hold on to their identity goals in the face of shortcomings, which is very important when it comes to long-term goals such as becoming a great scientist, parent, or artist—pursuing such identity goals requires one to persist and “stay in the field” for many years.

The Self-Regulation of Motivation and Goals

The research discussed so far has unveiled the determinants of high motivation as well as the determinants of goal attainment. On the basis of these findings, the question of how people can take control over their motivation and goals finds an easy answer: people simply need to establish these determinants by themselves or through the help of others (e.g., teachers, parents), and, once these are in place, their benefits can be reaped. For instance, a person who wants to increase her motivation to get a college education might want to focus on a school that is highly attractive (e.g., offers the type of education that aligns with her likes and values) but also feasible (e.g., one for which she has the required skills). And with respect to goal attainment, this person might want to frame the goal of successfully graduating from

this college in terms of learning the needed skills rather than achieving a certain outcome (e.g., graduating with a 4.0 grade point average).

But there is a second type of control available for our motivation and goals: using self-regulation strategies that help to translate one's motivation into binding goals as well as translating one's goals into successful action. Respective effective self-regulation strategies have been developed in extensive experimental research: mentally contrasting the desired future with the obstacles of present reality (Oettingen, 2012, 2014) for translating motivation into goals and forming implementation intentions (also referred to as *making if-then plans*) that specify when, where, and how one wants to act on one's goals for translating goals into action (Gollwitzer, 1999, 2014).

Engaging in Mental Contrasting

A powerful strategy to create strong goal commitments and thus facilitate goal attainment is mental contrasting. When engaging in mental contrasting, people first explicate an important wish (e.g., making new friends, learning to play a musical instrument, graduating from college) and then envision the fulfilment of a respective desired outcome (i.e., being friends with a certain admired person, playing Mozart on the piano, obtaining a high GPA). Then, the most important personal obstacle that stands in the way of attaining this outcome has to be detected—such as being shy to start a conversation, failing to show the needed persistence in practicing an instrument, investing efforts only in those school subjects one finds the most interesting). Mental contrasting thus qualifies as a problem-solving strategy that makes people recognize that they have not yet fulfilled an existing wish and that they need to take further action to achieve the desired future outcome. Such reasoning activates the person's expectations of actually attaining the desired future outcome, and this expectation will determine whether one will turn the wish into a binding goal. When the expectation of success is high, people will want to actively pursue realizing the desired future (i.e., commit and strive for it); when it is low, however, they will take it off their agenda so that they can venture on to alternative wishes and desired future outcomes.

The results of a host of studies in different domains (i.e., academic, health, interpersonal) support these claims. For instance, mental contrasting was found to help students to translate their motivation into strong goal commitments; students with high expectations to learn a foreign language and to engage in vocational training turned out to invest more effort and show a better performance. It also helped people with high expectations to cope effectively with stress in everyday life, reduce or stop smoking, stick to a healthy diet, increase physical exercise in overweight men of low socioeconomic status, and constructively deal with the challenges of everyday life as faced by patients with type 2 diabetes. Mental contrasting also fostered interpersonal relations by leading to more effective reconciliations, engaging in getting to

know interesting people, and heightening one's tolerance toward unusual behaviors of others; it also promoted help-seeking in college students and help-giving in emergency care nurses.

All of these studies evidenced the same pattern of results: given high expectations of success, participants who engaged in mental contrasting showed the strongest goal commitment as assessed in terms of intentions to engage in goal pursuit and actual engagement; given low expectations, mental contrasting participants showed the least goal commitment. In comparison, participants who were instructed to merely indulge in positive images about the future or merely dwell on negative aspects of the present reality showed medium levels of goal commitment and respective pursuit, no matter whether expectations of success were high or low. Extensive experimental research suggests that the mechanisms underlying mental contrasting effects pertain to both cognitive (e.g., strengthened associative links between the desired future and present reality and between the present reality and instrumental means to overcome it) and affective processes (e.g., heightened energization levels) (summary by Oettingen & Cachia, 2016). Importantly, people do not need to be consciously aware of the operation of these mechanisms; they unfold their beneficial effects outside of conscious awareness.

Making If-Then Plans

A high commitment to one's goals commonly facilitates goal attainment, but, very often, striking goal-behavior gaps remain. A powerful strategy to overcome these gaps is planning out in advance how one wants to strive for one's set goals. Goals only specify that one wants to show a certain response or reach a certain outcome ("I want to perform response X!" or "I want to attain outcome X!"). In contrast, implementation intentions—also referred to as "if-then plans"—have the structure of "If critical situation X is encountered, then I will perform the goal-directed response Y!" The critical situation specified can be a great opportunity to act that one does not want to miss or an obstacle that needs to be overcome. Whereas goal intentions merely specify desired end states ("I want to achieve goal X!"), the if-component of an implementation intention specifies when and where one wants to act on this goal, and the then-component spells out how this should be done.

Implementation intentions thus delegate control over the initiation of a goal-directed response (i.e., an instrumental thought, feeling, or action) to a specified opportunity or obstacle by creating a strong link between the critical situational cue and a goal-directed response. For instance, a person who has the goal to reduce alcohol consumption might make the following if-then plan: "If my colleagues invite me to join them for a drink on Friday afternoon, I will answer: Not this week but maybe next week!"

An early meta-analysis (Gollwitzer & Sheeran, 2006) involving close to a hundred independent studies revealed a medium-to-large effect size ($d = .65$) of

implementation intentions on goal attainment in a variety of domains (e.g., interpersonal, environmental, health), and this on top of the effects of mere goal intentions. A recent meta-analysis of meta-analyses on implementation intentions (such as meta-analyses focusing exclusively on goals of eating a healthy diet, engaging in physical activity, emotion regulation, etc.) also revealed a medium effect size of forming implementation intentions on goal attainment (Keller et al., 2020).

Research on the underlying mechanisms discovered that forming implementation intentions facilitates detecting the presence of the critical situation and focusing one's attention on it. This happens because implementation intentions create a strong associative link between the specified critical situation in the if-part of the plan and the goal-directed response specified in the then-part. These strong associative links also allow for automatically performing the specified goal-directed response in the presence of the critical cue; the planned response is now enacted immediately, efficiently (i.e., even when the person is distracted with other things), and without requiring a further conscious intent. Making an if-then plan thus strategically automates goal striving by delegating the control of goal-directed responses to anticipated critical situational cues, with the explicit purpose of serving a set goal (Martiny-Huenger et al., 2015). Note that this kind of automaticity is different from the one we describe in our essay on "The Unconscious Sources of Motivation and Goals" (Essay 5.1, by Bargh and Gollwitzer). There, we discuss phenomena related to the unconscious activation of goals (i.e., outside of a person's awareness). With strategic automaticity, we have a different phenomenon in mind: the person is conscious about the goal at hand as well as the if-then plan that is made to facilitate goal attainment. What is automated is the enactment of the if-then plan; it is delegated to critical situational cues specified in the if-part of these plans.

Brain studies, as well as studies with individuals with poor self-regulatory abilities (e.g., children with attention-deficit hyperactivity disorder [ADHD]), further support this strategic automaticity hypothesis, as do studies demonstrating that if-then plans can effectively block antagonistic automatic responses (such as unwanted habitual or primed behaviors; e.g., Adriaanse & Verhoeven, 2018; Gollwitzer et al., 2017). Gollwitzer et al. (2011) experimentally demonstrated that priming the goal of being fast increased a person's car driving speed and driving mistakes, and this was true even for participants with the explicit goal of driving carefully. However, when the goal to drive carefully was furnished with an if-then plan (i.e., "If I enter a curve, then I will slow down immediately!"), the effect of the primed goal of being fast was curbed. This finding suggests that people who are worried about being primed outside of awareness into behaving in an unwanted manner (e.g., speeding up as a response to being overtaken by a competitive fellow driver on the highway) can protect themselves from such unwanted automatic responses. They only have to make an if-then plan that strategically automates a response to the anticipated

critical situation that is antagonistic to the unwanted response (e.g., staying calm when being overtaken).

Other research on the facilitating effects of forming implementation intentions on goal attainment observed that if-then plans can be used to effectively deal with getting started with goal-directed activities or staying on track once these actions have been initiated. Also, goal pursuits that require the delay of gratification to arrive at positive outcomes (see the marshmallow task paradigm developed by Walter Mischel) seem to benefit from forming respective implementation intentions, as do goal pursuits that challenge a person's knowledge and skills. Also, if-then plans to think carefully have been found to help people with respect to reaching the goal of making better decisions.

Combining Mental Contrasting with Forming Implementation Intentions

Mental contrasting and forming implementation intentions complement each other. Via identifying one's wishes and imagining desired future outcomes, mental contrasting clarifies in which direction one wants to act. Via identifying and imagining the obstacles of present reality, it provides associative links between the desired future, obstacles, and instrumental responses as well as the energy to effectively overcome the critical obstacles and attain the desired future. However, when the obstacles are particularly hard to overcome (e.g., if these are antagonistic habits), the additional forming of implementation intentions will further benefit attaining the desired future.

In various intervention studies, teaching participants to combine mental contrasting (MC) with forming implementation intentions (II) into a conjoint self-regulation strategy (MCII) was found to be highly effective at inducing critical behavior change (Oettingen, 2014). This was found to be true for becoming more physically active and eating healthy, in nonclinical as well as clinical samples (e.g., schizophrenic patients, stroke patients, children with ADHD). MCII also helped students to study for their exams and standardized tests and to enhance the quantity and quality of their homework. When applied to the domain of interpersonal relationships, MCII increased people's commitment to their relationships and decreased insecurity-related behaviors (e.g., to avoid talking about sensitive topics). When testing the additive value of combining mental contrasting with implementation intentions, in comparison to only using the single strategies by themselves, it was observed that MCII benefits negotiation outcomes (i.e., finding integrative solutions) and getting rid of bad snacking habits more so than mental contrasting or implementation intentions used alone. By creating insights into their wishes, outcomes, and obstacles, mental contrasting apparently prepares people to generate more personally relevant if-then plans.

People can deploy MCII in everyday life by taking four simple steps: focus on an important *wish*, then imagine the respective desired *outcome*, find the critical personal *obstacle* standing in its way, and, finally, make an if-then *plan* to overcome it. (MCII has been disseminated under the acronym *WOOP*, which stands for *Wish, Outcome, Obstacle, Plan*—for the dissemination of MCII or WOOP, see www.woopmylife.org and the WOOP app.) Once learned, this self-regulation tool can be applied on one's own without guidance from others, making it a self-sustainable practical strategy to help people take control of their motivation and goals.

So the next time you are thinking of attending an international scientific conference, you might want to engage in mental contrasting with implementation intentions. You start with reflecting on your wish (e.g., bringing your new data to the attention of your colleagues) and imagining the desired positive outcome (e.g., soliciting helpful feedback for your future research). Then you contrast the desired positive outcome with your personal obstacle (e.g., feeling uncertain about whether traveling to that country is risky or not). In order to deal with this obstacle, you might then make the following if-then plan: “And if I feel unsure whether traveling to that country is safe or not, then I will ask informed experts what the actual risks are!”