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The Self-Regulation of Goal Pursuit

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Goal pursuit starts with setting goals for oneself or with adopting goals assigned by others. Most theories of motivation (Ajzen, 1991; Atkinson, 1957; Bandura, 1997; Brehm & Self, 1989; Carver & Scheier, 1998; Gollwitzer, 1990; Locke & Latham, 1990; Sheeran, 2002; Vroom, 1964) suggest that people prefer to choose and adopt goals that are desirable and feasible. Desirability is determined by the estimated attractiveness of likely short-term and long-term consequences of goal attainment. Such consequences may pertain to anticipated self-evaluations, evaluations of significant others, progress toward some higher order goal, external rewards of having attained the goal, and the joy/pain associated with moving toward the goal (Heckhausen, 1977). Feasibility depends on people's judgments of their capabilities to perform relevant goal-directed behaviors (i.e., self-efficacy expectations; Bandura, 1997), their beliefs that these goal-directed behaviors will lead to the desired outcome (i.e., outcome expectations; Bandura, 1997; instrumentality beliefs, Vroom, 1964), the judged likelihood of attaining the desired outcome (i.e., general expectations; Oettingen, 1996) or desired outcomes in general (optimism; Scheier & Carver, 1987).

It is implicitly assumed that perceived feasibility and desirability not only affect goal setting, but also the intensity of subsequent goal striving, and a person's readiness to relinquish a set goal. More specifically, the intensity of goal striving is assumed to be higher the higher the respective feasibility and desirability beliefs. Finally, people are thought to give up

on those goals that turn out to be much harder to achieve than originally anticipated (i.e., feasibility beliefs had to be corrected downward) or much less attractive than originally thought (i.e., desirability beliefs had to be corrected downward).

Recent research on goals has demonstrated that variables other than feasibility and desirability also affect goal setting and goal striving. For instance, people who hold incremental rather than entity theories of human capabilities set for themselves quite different types of goals (i.e., learning goals rather than performance goals; Dweck, 1999). Learning goals in turn lead to better achievements than performance goals as the former allow people to view setbacks as cues to acquire and use new strategies of goal attainment. People who construe their self as an ideal show a predilection for setting goals that focus on gain and achievement (i.e., promotion goals), whereas construing the self as an ought is associated with a predilection for setting goals that focus on safety and security (i.e., prevention goals; Higgins, 1997). These different types of goals in turn affect people's achievements. For instance, promotion goals lead to task performance that is strongest when both expectations of success and incentive value of success are high; if people have formed prevention goals, however, this effect is not observed.

But recent research has not only discovered that variables other than feasibility and desirability affect goal setting and goal striving, it has also ventured into exploring the psychological processes on which goal setting and goal striving are based (Oettingen & Gollwitzer, 2001). Process-focused research on goal setting discovered that the way people commit to goals (i.e., setting oneself binding goals) makes a difference. More specifically, whether a goal-setting determinant such as feasibility will take effect depends on the mode of self-regulatory thought with which the task of setting a goal is approached (Oettingen, 1996, 1999).

Process-focused research on goal implementation discovered that strong goal commitments formed on the basis of high feasibility and high desirability do not guarantee successful goal striving and goal attainment. A host of problems may be encountered on the way to the goal (e.g., failing to get started, becoming derailed by distractions) and thus thwart goal attainment. Whether these problems will be ameliorated depends on people's efforts to plan out goal pursuit ahead of time (Gollwitzer, 1999). Apparently, people's self-regulatory thoughts play an important role with respect to whether goal setting and goal implementation run off effectively.

Research on the self-regulation of relinquishing goals is still at its beginnings. We made first steps in this direction, and discovered that reflective and reflexive self-regulatory strategies can be used to facilitate the relinquishment of goal pursuits that have become unfeasible or unattractive. In this chapter, we first present our past research on the self-

regulation of goal setting and goal striving, and then turn to recent research on goal relinquishment.

SELF-REGULATION OF GOAL SETTING

Oettingen (1996) analyzed goal setting by focusing on how expectations and fantasies about the future can be turned into binding goals. First, the differences between these two forms of thinking about the future were highlighted. Expectations were recognized as judgments of the likelihood that a certain future behavior or outcome will occur. Free fantasies about the future, in contrast, were understood as thoughts and images of future behaviors or outcomes in the mind's eyes, independent of the likelihood that these events will actually occur. For example, despite perceiving low chances of successfully resolving a conflict with another person, people can enjoy positive fantasies of harmony (Oettingen & Mayer, 2002).

Oettingen specified three routes to goal setting that result from how people deal with their fantasies about the future. One route is expectancy based, whereas the other two are independent of expectations. The expectancy-based route rests on mentally contrasting positive fantasies about the future with negative aspects of impeding reality. This mental contrast ties free fantasies about the future to the here and now, by making the future and reality simultaneously accessible, and by activating the relational construct of reality standing in the way of realizing the desired future (Oettingen, Pak, & Schnetter, 2001). Consequently, the desired future appears as something to be achieved and the present reality as something to be changed. The resulting necessity to act raises the question: Can reality be changed to match fantasy? The answer is derived from one's expectations of successfully implementing fantasy in reality. Accordingly, mentally contrasting positive fantasies about the future with negative aspects of impeding reality causes expectations of success (i.e., perceived feasibility) to become activated and used. If expectations are high, a person will commit herself to fantasy attainment; if expectations of success are low, the person should refrain from doing so.

The second route to goal setting relates to indulging in positive fantasies about the desired future, thereby disregarding impeding reality. This indulgence seduces the individual to mentally enjoy the desired future envisioned in the mind's eye, and thus fails to make reality appear as standing in the way of the desired future. Accordingly, no necessity to act emerges and relevant expectations of success are not activated and used. Goal commitment to act toward fantasy fulfillment solely reflects the pull of the desired events imagined in one's fantasies. It is moderate and independent of a person's expectations or perceived chances of success (i.e., feasibility).

The third route to goal setting relates to dwelling on the negative aspects of present reality, thereby disregarding positive fantasies about the future. Again, reality is not perceived as impeding the desired future and thus no necessity to act emerges. As expectations of success are not activated and used, goal commitment merely reflects the push of the negative events imagined in one's reflections on present reality. Similar to indulgence in positive fantasies about the future, dwelling on the negative reality leads to a moderate, expectancy-independent level of commitment.

This mental-contrasting theory is supported by various experimental studies (Oettingen, 2000; Oettingen et al., 2001; Oettingen, Hönig, & Gollwitzer, 2000, Study 1). In one such study, participants were confronted with an interpersonal opportunity: getting to know an attractive person. Female participants first judged the probability of successfully getting to know an attractive male doctoral student whose picture they saw. Participants then generated positive aspects of getting to know the attractive man (e.g., love, friendship) and negative aspects of impeding reality (e.g., being shy, his potential disinterest). Finally, they were divided into three groups for elaboration of these aspects.

In the fantasy–reality contrast or mental contrast group, participants mentally elaborated positive aspects of getting to know the man and negative aspects of reality standing in its way in alternating order beginning with a positive aspect. In the positive fantasy or indulging group, participants mentally elaborated only the positive aspects of getting to know this man; and in the negative reality or dwelling group, participants mentally elaborated only the negative aspects of impeding reality. When participants' commitment to the goal of getting to know the male doctoral student was assessed (in terms of eagerness to get to know him and anticipated frustration in case of failure), the strength of goal commitment was in line with perceived feasibility in the mental contrast group, whereas in the indulging and dwelling groups, feasibility was not related to strength of goal commitment. No matter whether perceived feasibility was low or high, goal commitment was at a medium level in the latter two groups. Apparently, mental contrasting makes people set binding goals for themselves if expectations of success are high, but refrain from setting binding goals if expectations of success are low, whereas indulging and dwelling cause people to be weakly pulled by the positive future or pushed by the negative reality, respectively.

A series of further experiments using various fantasy themes related to academic achievement, conflict resolution, emotional and financial independence, and occupational success replicated this pattern of results. For instance, in young adults, mental contrasting has been found to create expectancy-dependent goals to combine work and family life, to study abroad, and to stop smoking, whereas indulging and dwelling failed to do so. In school set-

tings, mental contrasting facilitated the expectancy-dependent setting of goals to excel in mathematics and to learn a foreign language. In health care settings, mental contrasting led intensive care nurses to form expectancy-dependent goal commitment to better their relationships to patients' family members (Oettingen, Brinkmann, Mayer, Hagenah, Schmidt, & Bardong, 2003, Study 1). Moreover, health care professionals at the middle management level profited from being trained in mental contrasting in terms of increased decisiveness, better time management, and more effective delegating of authority to others (Oettingen et al., 2003, Study 2).

In all of these studies, cognitive, affective, and behavioral aspects of goal commitment were measured via self-report or observations by independent raters. Mental contrasting created expectancy-dependent goal commitments, no matter whether commitment was measured right after the experiment or weeks later, and no matter whether the desired future was self-set or assigned, and related to short-term or long-term projects. Mental contrasting turned out to be an easy-to-apply self-regulatory strategy, as described effects were obtained even when participants elaborated the desired future and current impeding reality only very briefly (i.e., were asked to imagine only one positive aspect of the desired future and just one respective obstacle; Oettingen et al., 2001, Study 1). In all of these studies, indulging in a positive future or dwelling on the negative reality only created goal commitments of a medium strength that were independent of perceived feasibility.

Taken together, these experimental findings suggest that whether people set themselves goals in a rational (i.e., feasibility based) or irrational (i.e., feasibility independent) manner depends on how people mentally deal with the desired future. Supporting this line of thought, recent laboratory experiments show that mental contrasting (as compared to indulging and dwelling) makes one's future and current reality affectively more distinct (i.e., the desired future is evaluated as positive and the current situation as negative; Scherer, 2001), and that feasibility-related information is processed more effectively as indicated in a superior cued recall performance (Pak, 2002). In other words, high perceived feasibility does not necessarily facilitate the setting of binding goals. Rather, it depends on a person's mode of self-regulatory thought whether the variable of perceived feasibility will play the pivotal role for determining goal commitments that is ascribed to it by most theories of motivation.

SELF-REGULATION OF GOAL STRIVING

From a self-regulatory perspective, forming a strong goal commitment is only a prerequisite for successful goal attainment as there are a host of subsequent implemental problems that need to be solved successfully

(Gollwitzer, 1996). For instance, after having set a goal, people may procrastinate acting on their intentions and thus fail to initiate goal-directed behavior. Moreover, in everyday life, people normally strive for multiple, often even rivalling goals, many of which are not simple short-term but long-term projects that require repeated efforts (e.g., starting a new business). Thus, goal pursuit may come to an early halt because competing projects have temporarily gained priority and the individual fails to successfully resume the original goal project. Getting started with or resuming an interrupted goal is only easy when the necessary steps are well practiced. Often, however, this fails to be the case as when the goal-directed behavior is not part of an everyday routine. Consequently, we have to seek viable opportunities to act on our goals, a task which becomes particularly difficult when attention is directed elsewhere (e.g., one is absorbed by competing goal pursuits, wrapped up in ruminations, or gripped by intense emotional experiences).

Gollwitzer (1993, 1999) suggested that forming a certain type of intention called an implementation intention is a powerful self-regulatory strategy that alleviates such problems and thus promotes the execution of goal-directed behaviors. Implementation intentions take the format of "If Situation X is encountered, then I will perform Behavior Y!" In an implementation intention, a mental link is created between a specified future situation and the anticipated goal-directed response. Holding an implementation intention commits the individual to perform a certain goal-directed behavior once the critical situation is encountered.

Implementation intentions are to be distinguished from goal intentions (goals). Goal intentions have the structure of "I intend to reach Z!" whereby Z may relate to a certain outcome or behavior to which the individual feels committed. Goal intentions are the type of intentions with which the majority of theories of motivation (as cited earlier) are concerned. Implementation intentions, on the other hand, are formed in the service of goal intentions and specify the when, where, and how of goal-directed responses. For instance, a possible implementation intention in the service of the goal intention to eat healthy food would link a suitable situational context (e.g., one's favorite restaurant) to an appropriate behavior (e.g., order a vegetarian meal). In other words, implementation intentions link anticipated opportunities with goal-directed responses and thus commit a person to respond to a certain critical situation in a stipulated manner.

Forming implementation intentions is expected to facilitate goal attainment on the basis of psychological processes that relate to both the anticipated situation and the specified behavior. Because forming implementation intentions implies the selection of a critical future situation (i.e., a viable opportunity), it is assumed that the mental representation of this

situation becomes highly activated and thus more easily accessible (Gollwitzer, 1999). This heightened accessibility should in turn make it easier to detect the critical situation in the surrounding environment and readily attend to it even when one is busy with other things. Moreover, this heightened accessibility should facilitate the recall of the critical situation.

Forming implementation intentions involves first the selection of an effective goal-directed behavior, which is then linked to the selected critical situation. The mental act of linking a critical situation to an intended behavior in the form of an if–then plan leads to automatic action initiation in the sense that action initiation becomes swift, efficient, and does not require conscious intent once the critical situation is encountered. Thus, by forming implementation intentions, people can strategically switch from conscious and effortful action initiation (guided by goal intentions) to having their goal-directed actions directly elicited by the specified situational cues. This postulated automation of action initiation (also described as strategic "delegation of control to situational cues") has been supported by the results of various experiments that tested immediacy, efficiency, and the presence/absence of conscious intent (Brandstätter, Lengfelder, & Gollwitzer, 2001; Gollwitzer & Brandstätter, 1997, Study 1; Lengfelder & Gollwitzer, 2001).

Given that implementation intentions facilitate attending to, detecting, and recalling viable opportunities to act toward goal attainment, and in addition, automate action initiation in the presence of such opportunities, people who form implementation intentions should show higher goal attainment rates as compared to people who do not furnish their goal intentions with implementation intentions. This hypothesis is supported by the results of a host of studies examining the attainment of various different types of goal intentions.

As a general research strategy, goal intentions were selected for analysis that are not easily attained for various reasons (e.g., distractions, unpleasantness). Gollwitzer and Brandstätter (1997, Study 2) analyzed a goal intention that had to be performed at a bad time (e.g., writing a report about Christmas Eve during the subsequent Christmas holiday). Other studies have examined the effects of implementation intentions on goal attainment rates with goal intentions that are somewhat unpleasant to perform. For instance, the goal intentions to perform regular breast examinations (Orbell, Hodginks, & Sheeran, 1997), cervical cancer screenings (Sheeran & Orbell, 2000), resumption of functional activity after joint replacement surgery (Orbell & Sheeran, 2000), and engaging in physical exercise (Milne, Orbell, & Sheeran, 2002), were all more frequently acted on when people had furnished these goals with implementation intentions. Moreover, implementation intentions were found to facilitate the attainment of goal intentions where it is easy to forget to act on them (e.g., regu-

lar intake of vitamin pills, Sheeran & Orbell, 1999; the signing of work sheets with very old people, Chasteen, Park, & Schwarz, 2001). Furthermore, implementation intentions facilitated the attainment of goal intentions in patient populations that are known to have problems with the control of goal-directed behaviors (e.g., heroin addicts during withdrawal, Brandstätter et al., 2001, Study 1; schizophrenic patients, Brandstätter et al., 2001, Study 2; frontal lobe patients, Lengfelder & Gollwitzer, 2001).

The strength of the beneficial effects of implementation intentions depends on the presence or absence of several moderators. Implementation intentions were found to be more effective in completing difficult as compared to easy goals (Gollwitzer & Brandstätter, 1997, Study 1). Moreover, forming implementation intentions was more beneficial to frontal lobe patients, who typically have problems with executive control, than to college students (Lengfelder & Gollwitzer, 2001, Study 2). Also, the strength of commitment to the respective goal intention matters. Orbell et al. (1997) reported that the beneficial effects of implementation intentions on compliance in performing a breast examination were observed only in those women who strongly intended to perform this self-examination. This finding suggests that implementation intentions do not work when the respective goal intention is weak. Finally, Sheeran, Webb, and Gollwitzer (2002) conducted two experiments that tested whether implementation intention effects were dependent on the situational activation of the superordinate goal intention. Experiment 1 showed that assigning a goal and asking participants to form an implementation intention in tandem produced the greatest increase in study behavior, as compared to only assigning the goal or only asking to form an implementation intention, and a control condition. In Experiment 2, goals either related or unrelated to the implementation intention were primed, with the result that implementation intentions only affected the accessibility of a goal-directed behavior (in a lexical decision task) when the related superordinate goal had been activated. These findings suggest that implementation intention effects are moderated by the situational activation of the respective superordinate goal. In support of this hypothesis, a recent experiment (Bayer, Jaudas, & Gollwitzer, 2002) using the Rogers and Monsell (1995) task switch paradigm demonstrated that implementation intentions only affect a person's task performance if the task at hand is relevant to the superordinate goal in the service of which the implementation intention was formed.

Implementation intentions have been shown to be similarly effective for self-report and less subjective behavioral measures, for student and nonstudent samples, and for nonclinical and clinical samples (e.g., schizophrenic patients, drug addicts under withdrawal, frontal lobe patients).

Overall, more than 20 published studies have examined the effects of implementation intentions on the attainment of goals, with most of these studies in the health domain. All but one found statistically significant and meaningful differences in goal completion between participants who formed an implementation intention and control participants (Sheeran & Gollwitzer, 2002). However, these studies not only demonstrate that forming implementation intentions is an effective self-regulatory tool but also that forming implementation intentions qualifies as an easy-to-use technique, because it does not matter whether implementation intentions are assigned or self-set, are formed publicly or privately, are written down or not, or whether people imagined acting on their implementation intentions or not.

Whereas past research on implementation intentions focused almost exclusively on getting started with moving toward a desired goal, recent research analyzes how implementation intentions can be used to control unwanted derailing of an ongoing goal pursuit (summary by Gollwitzer, Bayer, & McCulloch, in press). The latter can be achieved in two different ways. As long as people are in a position to anticipate what could potentially make them stray off course (the relevant hindrances, barriers, distractions, and temptations), they can specify these critical situations in the if-part of an implementation intention and link them to responses that facilitate goal attainment. The response specified in the then-part of an implementation intention can be geared at either ignoring disruptive stimuli, suppressing the impeding responses to them, or blocking obstructions to goal pursuit by engaging in it all the more.

This way of using implementation intentions to protect goal pursuit from straying off course necessitates that people know what kind of obstacles and distractions need to be watched for. Moreover, people need to know what kind of unwanted responses are potentially triggered (so that people can attempt to suppress them), or what kind of goal-directed responses are particularly effective in blocking these unwanted responses (so that people can engage in these goal-directed activities). In other words, using such implementation intentions to control unwanted straying off course requires much cognitive, clinical, and social-psychological knowledge. Otherwise, no effective if-components and then-components can be specified.

However, an easier solution is also available. Instead of concentrating on potential obstacles and various ways of effectively dealing with them, people may exclusively concern themselves with the intricacies of implementing the goal pursuit at hand. People can plan out the goal pursuit by forming implementation intentions that determine how the various steps of goal attainment are to be executed. Such careful planning encapsulates goal pursuit, protecting it from the adverse influence of potential obsta-

cles and distractions, whether internal or external. This use of implementation intentions allows the attainment of goals without having to change a noncooperative self or an unfavorable environment. Crucially, one does *not* need to possess any psychological knowledge on how to effectively deal with adverse self-states or situational contexts. It suffices if the person is aware of the demands of the current goal being pursued.

SELF-REGULATION OF GOAL RELINQUISHMENT

Goal relinquishment is commonly seen as preceded by a decrease in the perceived feasibility of goal attainment (Carver & Scheier, 1998), or by a decrease in perceived desirability (Klinger, 1977). According to Brehm's theory of energization (Brehm & Self, 1989; Wright & Brehm, 1989), however, things are more complicated as perceived feasibility and perceived desirability are said to work together in a complex way in determining when a goal-directed course of action is terminated. Based on energization theory, a person should terminate working on a task or goal if task demand requires such a high amount of effort that the task pursuit is no longer justified in view of the perceived desirability of task attainment (i.e., potential motivation that may stem from respective needs, instrumentality of the task at hand, or incentive value of task attainment). As long as the required amount of effort is still justified, people should not disengage from pursuing the task in the face of an increase in difficulty (i.e., a decrease in perceived feasibility). Rather, energization is predicted to increase linearly with increasing task demand.

The theory specifies a second reason for task or goal relinquishment. If the individual recognizes that the task or goal at hand can no longer be attained, no energization but disengagement is predicted, and this even in the face of high desirability. Various experiments manipulating the level of perceived desirability (e.g., via low/high need, low/high instrumentality, or low/high incentive value) and task demand (easy, difficult, impossible tasks) provide strong support for these predictions of energization theory (Wright, 1996).

On the basis of energization theory, the following self-regulatory problems of relinquishing tasks or goals can be identified: First, people may fail to see that the task or goal at hand is no longer attainable. As a consequence, they hang on to the goal even though disengagement from the goal and engagement to more feasible alternative goals is called for. Indeed, Pyszczynski and Greenberg (1987, 1992), in their self-regulatory perseveration theory of depression, have proposed that such disengagement failures can propel people into a downward spiral culminating in depression. We argue that reflective self-regulatory strategies such as

mental contrasting can sensitize people to feasibilities and thus they can help people to relinquish the original unpromising goal and to commit to promising alternative goals.

Second, in situations where potential motivation (i.e., perceived desirability) is boosted momentarily (e.g., by self-defensive reasons), people may lose sight of the previously held level of potential motivation of the goal at hand. As a consequence, invigoration of effort induced by increased task demand may continue even though the original level of potential motivation has been surpassed. We argue that people can prepare themselves for such critical situations by advance planning that automatically refocuses them on the original potential motivation or purpose of performing the task or goal.

Relinquishing Goals by Reflective Self-Regulatory Strategies

Increasing Sensitivity to Feasibility: Mental Contrasting. Two experiments tested whether mental contrasting increases sensitivity to the feasibility of goal attainment (Oettingen, Mayer, & Losert, 2003, Studies 1 and 2). In the first study, we asked 7- to 12-year-old schoolchildren to name the most important goal that was presently occupying their minds. Participants named goals such as "getting better grades at school," "persuading dad to return home," and "to get violin lessons." They then reported on their expectations or perceived chances that their goal would be attained.

Thereafter, participants had to name two positive things of the future they associated with attaining their goal, and two negative things associated with their present situation lacking goal attainment. In the mental contrast group, participants then had to mentally elaborate the two positive things of a future associated with goal attainment and the two negative things associated with their present reality, in alternating order beginning with a positive thing associated with goal attainment. They had to start with a positive thing of goal attainment, because only then successful goal attainment is taken as a reference point to which the lack of goal attainment in the present situation becomes obvious, and thus only then a necessity to act should arise with subsequent activation of expectations. The experimental design had three further groups: In the positive-future-only or indulging group, participants had to elaborate only the two listed positive things associated with future goal attainment. In the negative-reality-only or dwelling group, participants had to elaborate only the two listed negative things associated with present lack of goal attainment. In a final group, participants mentally elaborated two negative things associated with a lack of goal attainment and two positive things associated with goal attainment in alternating order, this time starting with a negative thing associated with lack of goal attainment. Here the lack of goal at-

tainment was taken as a reference point, and thus the gap to goal attainment should not become obvious and no necessity to act should arise with subsequent activation of expectations.

As a dependent variable, we measured participants' emotions related to energization and disengagement (Klinger, 1977). Participants answered questions assessing how they felt at the very moment. More specifically, questions pertained to depressive affect (e.g., sad, unhappy, lonely), frustration (e.g., angry, inert, shaky), and lack of energy (e.g., energized [reverse coded], bored, downcast). When perceived chances of attaining the goal were low, participants in the contrast group showed most depressive affect, frustration, and lack of energy as compared to all other groups. When perceived chances of attaining the goal were high, there were no group differences whatsoever. In other words, contrasting thoughts about attaining a goal with thoughts about the present reality lacking goal attainment leads to a heightened sensitivity for feasibility of goal attainment, which in turn makes people with low perceived feasibility emotionally relinquish their goals. Interestingly, low-expectancy participants who indulged in goal attainment, dwelled on the current situation, or reflected on the future and the present in reverse order, did not report emotions known to be associated with disengagement. Rather, they showed emotions of continued engagement at the level observed with contrasting participants entertaining high expectations of success. Because we also measured perceived chances of goal attainment (expectations) after the manipulation of the different modes of thought (i.e., contrasting, indulging, dwelling, and reverse elaborations), we could check whether these manipulations affected levels of perceived chances and whether such changes mediated the effects on the disengagement-related emotions. This was not the case. Therefore, we can assume that mental contrasting leads to relinquishing goals by heightening sensitivity to low feasibility, rather than by lowering the level of feasibility.

In the second experiment, we analyzed goal relinquishment in college students. Participants had to name a very important goal that they had thought to give up at least once. Goals such as "going to medical school," "becoming an actor," or "starting a business" were listed. They then had to indicate their expectations of successfully attaining their goal. Thereafter, we established three different groups. In the mental contrast group, participants named and mentally elaborated a positive aspect of goal attainment (e.g., being respected by my family), and right thereafter a negative aspect of their present situation that impeded goal attainment (e.g., having to pass the MCAT). In the positive future or indulging group, participants had to name and elaborate only positive aspects of goal attainment, and in the negative reality or dwelling group, participants had to name and elaborate only negative aspects of impeding reality.

To assess participants' readiness to relinquish goal pursuit, we asked them to indicate how disappointed they would feel if they failed to attain their goal. When expectations of success were low, participants in the mental contrast group reported least disappointment as compared to all other groups (i.e., they were the least committed to attain their goal). When expectations of success were high, participants in the mental contrast group reported much disappointment (i.e., their goal commitment was strong). Such expectancy-dependent goal commitment was not observed in the indulging group and the dwelling group. In both of these groups, participants with low and high expectations reported that they felt much disappointment (i.e., their goal commitment was uniformly strong).

The findings of the two studies reported suggest that mental contrasting makes goal-striving individuals sensitive to the feasibility of goal attainment. If feasibility is low, emotions and strength of goal commitment indicate a readiness to relinquish the goal at hand. Indulging and dwelling, on the other hand, makes goal-striving individuals insensitive to low feasibilities. No matter whether feasibility is perceived as low or high, emotions as well as levels of goal commitment show no indication of a readiness to disengage from goal pursuit. In the language of energization theory, mental contrasting increases the likelihood of motivation suppression when goal attainment is judged highly unlikely.

Increasing Sensitivity to Feasibility: Seeing the Goal on a Larger Scale. Oettingen, Mayer, and Losert (2002, Study 3) tested a further reflective self-regulatory strategy of goal relinquishment, this one based on the consideration that most goal pursuits are structured hierarchically (Carver & Scheier, 1998). In a correlational study with college students, Oettingen et al. (2003) analyzed whether making the higher order purpose of a goal salient helps to relinquish this goal, if alternative ways to reach the higher order purpose are perceived as highly feasible. Like in the previous study, college students had to name an important goal that they had thought to give up at least once (e.g., going to medical school). Then participants were to indicate the higher order purpose of this goal (e.g., to help people, to achieve high professional status) and to think up an alternative route or means to achieve this higher order purpose. Finally, they had to report on the perceived feasibility of this alternative route.

We assessed participants' commitment to attain the original, lower order goal by asking them how disappointed they would feel if they failed to reach this goal. Participants who perceived the feasibility of the alternative route to lead to the ultimate purpose as being high, felt less committed to the original goal than those who perceived this feasibility as being low. It appears, then, that there is a second reflective self-regulatory strat-

egy that helps people to relinquish goals. This strategy entails the linking of the present goal to its higher order purpose, and the thinking up of an alternative route or means to achieve this purpose. If the alternative route is perceived as feasible, the original goal can easily be relinquished. The original goal is now no longer seen as an end in itself but as a substitutable means to reach the higher order purpose. Interestingly, Pyszczynski and Greenberg (1992) proposed this precise strategy as the pathway of recovery for depressed individuals; by considering their higher order goals, they can begin disengaging from the impossible goal upon which they were perseverating and can begin to reinvest in alternative pathways to their higher order goals, which will initiate an upward spiral out of depression.

In summary, people can use mental contrasting when they find it difficult to relinquish goals of low feasibility. Alternatively, they can search for the higher order purpose of the goal at hand and think of alternative ways (means) to attain this purpose. Still, both of these strategies are rather effortful, because they demand sophisticated mental elaborations of desired futures and impediments of present reality, or the generating of higher order purposes and alternative ways to achieve them. Often, however, the motivation to attain the goal at hand is so high that stepping back and engaging in reflective thought is precluded. In such cases, less reflective and more reflexive self-regulatory strategies are called for that stop goal pursuit without further mental ado. In the research described below, we explored whether forming implementation intentions qualifies as such a reflexive self-regulatory strategy.

Relinquishing Goals by Reflexive Self-Regulatory Strategies

We have analyzed two different, high motivation situations that make it hard for people to step back and ponder the relinquishment of an ongoing goal pursuit. The first one (Henderson, Gollwitzer, & Oettingen, 2003) is characterized by strong justification motives that lead to holding on to a failing course of action. The second situation (Bulgarella, Oettingen, & Gollwitzer, 2003) is characterized by strong competitive motives that redirect one's own goal pursuit to follow another person's goal pursuit.

Stopping a Failing Course of Action in the Face of an Activated Justification Motive. Using a modified version of a paradigm developed by Bobocel and Meyer (1994), we asked college students to perform well on a general knowledge test. All participants had to choose one out of four possible strategies on how to work on the test and then justify their choice. While being engaged in working on the test, participants were disrupted

three times and given increasingly negative feedback. After each feedback, participants were asked whether they wanted to continue with the chosen strategy or switch to an alternative strategy. We measured to what extent participants relinquished the initially chosen and justified strategy as well as the overall number of times participants switched strategies.

Prior to working on the general knowledge test, in the goal intention condition, participants had to tell themselves: "I will always pursue the best strategy!" Participants in the implementation intention condition had to tell themselves in addition: "And if I receive disappointing feedback, then I'll switch to a different strategy!" Finally, participants in the control condition were provided with neither goals nor plans geared at facilitating the relinquishment of a chosen strategy.

We observed that a larger proportion of participants in the implementation intention condition relinquished their initially chosen and justified strategy than in the goal intention condition and in the control condition, whereas the proportion of participants in the goal intention condition and the control condition did not differ. A parallel pattern of results was observed for the overall number of times participants switched strategies. Implementation intention participants switched more often than did goal intention and control participants, whereas there was no difference between goal intention and control participants.

This pattern of data indicates that simply setting oneself the goal to always pursue the best strategy does not qualify as an effective self-regulatory tool of relinquishing a chosen strategy that produces negative results. Apparently, the motivation to stick to this strategy is so high that receiving negative feedback will not make people question their choice. Rather, it needs a stop rule that is adopted in advance in order to put a halt to the use of a chosen, but failing course of action.

A potential criticism of this study is that the implementation intention manipulation rather than instigating nonreflective disengagement led participants to experience a higher experimenter demand in the direction of switching strategies. That is, the wording of the implementation intention might have created the impression that the experimenter wanted participants to use alternative strategies to the chosen one. Therefore, we conducted a follow-up study comparing the demand effects of the various instructions. As in the previous study, we established a goal intention, an implementation intention, and a control condition. The cover story was the same as in the previous experiment, however instead of actually taking the general knowledge test, participants had to respond to the following items assessing experimenter demand: "During the test, how important do you think it is to stay with your chosen strategy?" and "The experimenter wants me to stay with my chosen strategy during the test!"

Participants' responses to these items did not support a demand effect explanation. First, importance ratings did not differ between groups and the same was true for participants' perceptions of whether the experimenter wanted them to stay with their chosen strategy during the test. Second, and most importantly, if a demand effect was responsible for the implementation intention effect in the previous study, then participants' responses to the items "The experimenter wants me to stay with my chosen strategy during the test!" and "During the test, how important do you think it is to stay with your chosen strategy?" should be positively correlated. For the control group and the goal intention group, we found such strong positive correlations, whereas for the implementation intention group, there was no relation between the responses to these two items. These observations speak against the possibility that a demand effect was at work in the previous study, and they support the claim that the assigned implementation intention provided an effective stop rule directly triggered by the specified cue (i.e., negative feedback).

Stopping a Goal Pursuit Derailed by an Activated Competition Motive. In a recent set of two experiments (Bulgarella et al., 2003), we developed a new experimental paradigm that allowed us to analyze the derailing of an ongoing goal pursuit by an activated competition motive. The paradigm demands participants to perform a speed–accuracy tradeoff task on the computer. The computer screen is divided horizontally. The upper portion of the screen displays numerous sets of parallel lines of different lengths and distances from each other and participants have to judge whether more or less than 10 lines are presented in a given set. As soon as the participants have given their judgment (more or less than 10 lines) by pressing a button, the lines disappear, and a new set of lines is presented.

Participants are informed that the lines appearing in the lower screen (i.e., the same sets of lines are presented at the same time) are those presented to another participant performing the same task in parallel in another experimental cubicle. In actuality, there is no other person, but only a preprogrammed response pattern adjusted around the reaction times of each participant. In the first block of 20 trials, the simulated other participant supposedly responds slower (i.e., the lines in the lower half of the screen disappear slower than those of the participant). In the second block of 20 trials, however, the simulated participant responds faster (i.e., the lines disappear faster than those of the participant). Moreover, when participants make mistakes in judging the number of lines presented as lower or higher than 10, the computer produces a noticeable beep. Participants are told that these beeps indicate having made a mistake.

In a first study using this paradigm, we tested whether entering the second block of judgments (in which the simulated person begins to make faster judgments than the participant) creates competitive behavior. Accordingly, we assigned participants to two different task conditions. In one condition, participants were given the task goal "be fast, but accurate." In the other condition, participants were given the task goal "be as accurate as possible."

Being confronted with comparatively faster judgments by the simulated other person in the second block of trials should lead to competitive behavior in the fast and accurate condition, but not in the accuracy-only condition. Only in the fast and accurate goal condition, being fast is part of the goal and thus a goal discrepancy with subsequent effort increase in terms of speeding up can be expected. No such discrepancy should be experienced in the being accurate-only condition, and thus no respective effort increase should occur. In the fast and accurate condition, the other person's being faster should thus derail the goal pursuit of being fast and accurate in the direction of being more fast than accurate, whereas no such effect should occur in the accurate-only condition. Indeed, when we assessed speed of judgments in block 2 as compared to block 1, we observed that speed and accuracy participants in the fast and accurate goal condition became faster, whereas the accurate-only participants did not. At the same time, participants in the fast and accurate condition made increasingly more mistakes from block 1 to block 2, whereas the accuracy-only participants did not differ in their mistakes from block 1 to block 2.

Having established a paradigm that produces the competitive derailing of a given goal pursuit, we wondered whether the self-regulatory strategy of forming implementation intentions can prevent such competitive derailing. Accordingly, we conducted an experiment containing two groups. The first condition was identical to the speed and accuracy goal condition in the previous study. In the second condition, participants were assigned the speed and accuracy goal, and in addition, were asked to form the following implementation intention: "If I hear a beep, then I think to myself: Be fast and accurate!" In the speed and accuracy goal condition, we replicated the speed-up effect triggered by the other person's comparatively faster judgments in the second block. In the implementation intention condition, however, no such speed-up effect was observed. Apparently, forming implementation intentions geared at sticking to the original goal prevents people from becoming derailed from the goal pursuit at hand simply due to a competitor who emphasizes only one select aspect of the goal. Such nonreflective running after one's competitor can effectively be stopped by making plans that refocus people on the content of their original goals.

CONCLUSION

Perceived desirability and perceived feasibility of a goal and variables related to the content of goals have a vast influence on goal setting, goal implementation, and goal relinquishment. However, over and above these determinants of goal pursuit, people can modulate in a self-regulatory effort whether goal setting, goal implementation, and goal relinquishment will take a more or less successful course. We have analyzed what people can do to make goal setting a more rational, feasibility-based endeavor, how people can promote the successful implementation of chosen goals even in the face of hindrances and barriers, and how people can assure that they will not cling to unpromising or unrewarding goals. As it turns out, effective self-regulatory strategies need to take a different form depending on whether goal setting, goal implementation, or goal attainment are at issue, and in addition, effective strategies can be either of a more reflective or reflexive nature.

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