Social Metacognition

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Metacognitive Processes in the Self-Regulation of Goal Pursuit

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INTRODUCTION

It is Thursday morning; you are a professional soccer player whose team lost the semifinal of the World Cup last night. You are frustrated and depressed because of the poor performance of your team. However, in a few days you and your team will compete for third place and your team has set itself the goal to succeed in this final match. How will you manage to commit strongly to the goal to perform well in this last match? How will you get yourself to train intensively, focused on the upcoming challenge, rather than to avoid the soccer field, ruminating about your recent loss?

To reach goals, we often need to override or alter dominant response tendencies that are deemed inappropriate. This process of altering dominant response tendencies into goal-directed behavior is coined self-regulation (e.g., Bandura, 1989; Carver & Scheier, 1981; Metcalfe & Mischel, 1999; Vohs & Baumeister, 2004). Self-regulation comprises monitoring, controlling, and changing our thoughts, emotions, impulses, and performance (Baumeister, Heatherton, & Tice, 1994). In order to break bad habits and to resist temptation, self-regulation orchestrates cognitive, metacognitive, affective, and volitional processes that reflect the self’s ability to regulate itself.

Research has shown that people differ in their self-regulatory abilities and that high self-control is positively associated with desirable outcomes in a broad variety of domains (e.g., success in school and work and mental health), whereas low self-control is associated with less desired outcomes (Baumeister et al., 1994; Duckworth & Seligman, 2005; Friese & Hofmann, 2009; Hofmann, Friese, & Strack, 2009; Mischel, Shoda, & Peake, 1988; Shoda, Mischel, & Peake, 1990;
Tangney, Baumeister, & Boone, 2004; Wolfe & Johnson, 1995). Thus, skilful self-regulation is a crucial ability for effective human functioning.

In the present chapter, we will first discuss the important role of metacognitive processes in the self-regulation of goal pursuit. We will present and extend Nelson’s model of metacognition (1996) by discussing the role of three metacognitive strategies: planning, monitoring, and controlling. Then, these three strategies and their role in goal setting and goal striving will be discussed within the theoretical framework of the mind-set theory of action phases (Gollwitzer, 1990; Heckhausen & Gollwitzer, 1987). Afterward, the fantasy realization theory (Oettingen, 1999; Oettingen, Pak, & Schmetter, 2001), the theory of intentional action control (Gollwitzer, 1993, 1999), and a recent intervention technique to promote self-regulation of goal attaining and goal striving (mental contrasting with implementation intentions: MCII; Oettingen & Gollwitzer, 2010) will be introduced. Finally, we will address the issues of consciousness versus nonconsciousness in self-regulation, and we end by pointing to the role of positive thinking and counterfactual thinking in modern self-regulation approaches.

**METACOGNITION IN SELF-REGULATION**

The importance of metacognition in the self-regulation of goal pursuit has been highlighted by several researchers (e.g., Gollwitzer & Schaal, 1998; Nelson, 1996). Nelson (1996) argued that we need to distinguish between the object-level and the meta-level. The object-level is defined as the current state (i.e., reality), whereas the meta-level contains a desired end state including one’s goals and ideas about how the object-level can be used to obtain the goals—that is, one’s strategies to reach the goals. At the object-level there are only cognitions concerning external objects (e.g., “The contest for third place will be a difficult match”), whereas at the meta-level there are cognitions concerning cognitions of external objects (e.g., “Why am I thinking that this is going to be a difficult match?”).

In line with recent theoretical work on metacognition (e.g., Petty, Briñol, Tormala, & Wegener, 2007), the first category of thoughts can be labeled **primary cognition** and the second category as **secondary cognition**. Two processes connect the meta-level with the object-level: **monitoring**, which refers to information flowing from the object-level to the meta-level, and **control**, which describes information flowing from the meta-level to the object-level. Through monitoring, the meta-level is informed about the state of the object-level; through control, the object-level is informed by the meta-level about what actions to take to reach the set goal represented in the meta-level. Thus, planning, monitoring, and controlling refer to secondary cognition.

In recent models of metacognition in different domains, such as metacognitive processes in emotional intelligence (e.g., Briñol, Petty, & Rucker, 2006) or metacognition in self-regulated learning (e.g., Boekaerts, 1996), three, rather than two, metacognitive strategies are proposed to enable goal pursuit: **planning**, **monitoring**, and **controlling**. All three strategies comprise secondary cognition because they do not focus on external objects, but rather refer to cognitions of cognitions. In line with Nelson’s assumptions, monitoring implies a higher level cognitive activity.
that examines the process of reaching a goal. Whenever the result of the monitoring process indicates that the realized action does not lead to the established goal, control processes are engaged to change the individual's behavior and thoughts so that the set goal is attained.

However, in recent models, planning goal pursuit is seen as a separate metacognitive strategy in which one cognitively designs actions to be accomplished to attain the desired goal (e.g., by planning future control processes). In Nelson’s model, planning is one component of control because his examples of control processes include the selection of strategies and the allocation of time to a certain task. Thus, we consider planning to be one component of the control aspect—although a most important one. All three of these metacognitive strategies play a central role in the overarching theoretical framework of the following chapter—namely, the mind-set theory of action phases (Gollwitzer, 1990, 2011; Heckhausen & Gollwitzer, 1987).

SELF-REGULATION IN GOAL SETTING AND GOAL STRIVING

In social psychological research, the processes of deciding which goal to pursue and how to pursue it are subsumed by the term “motivation.” Both early and more recent theories of motivation (e.g., Ajzen, 1991; Atkinson, 1957; Bandura, 1997; Carver & Scheier, 1998; Gollwitzer, 1990) suggest that people prefer to choose goals that are desirable and feasible. This means that when they set a goal, people weigh the incentive value of reaching different goals with the expectancy of actually reaching these goals. Then, they choose the alternative with the best combined outcome (e.g., Atkinson, 1957). Even though setting the right goal is an important step in the direction of effective human functioning, it is only the first step. Whether the desired goal is indeed attained depends on how well the process of goal striving is executed. Whereas early research on motivation mainly focused on factors influencing goal setting, more recently the attention of researchers has shifted to factors influencing the success of goal striving (for an overview see Bargh, Gollwitzer, & Oettingen, 2010). An important theory combining both aspects of motivation is the mind-set theory of action phases (Gollwitzer, 1990, 2011). This theory will be outlined in the following section.

The Mind-Set Theory of Action Phases

This theory describes the sequential process of goal setting, goal striving (i.e., planning and acting), and the reflection on and evaluation of both processes. It postulates that these elements are characteristic of different phases, distinguishing four separate stages in goal pursuit. The first phase, the so-called predecisional phase, is characterized by goal setting. Here, as postulated by earlier theories of motivation (e.g., Atkinson, 1957), people consider the desirability and feasibility of each alternative wish before turning one of these wishes into a binding goal. In terms of Nelson’s model of metacognition (1996), reflecting on the desirability and feasibility of one’s wishes is a component of the metacognitive strategy of
monitoring because it requires a flow of information from the object-level to the meta-level (for a similar argument, see Gollwitzer & Schaal, 1998). Commitment to goal attainment is high when goals are attractive (i.e., when the expected outcomes are evaluated positively) and feasible (i.e., when one’s ability to implement the required goal-directed behaviors is assessed positively).

When a goal is set, the predecisinal phase ends and the first of two volitional phases begins: the preactional phase. The focus of the preactional phase is to plan how to pursue one’s goal, including the when and where of action to reach the goal. Thus, in this phase the focus is clearly laid on the process of planning how to implement the goal. In Nelson’s model, this is part of the control component (i.e., secondary cognition) that ensures the flow of information from the meta-level to the object-level. In a third stage, the actional phase, the plans made must be realized in the form of action. In the actional phase, monitoring and control as secondary cognition may or may not take place, depending on specific aspects of the person (e.g., working memory capacity), the situation (e.g., time), and the goal (e.g., the specificity of the goal). However, in the last phase, the postactional phase, people concentrate fully on evaluating their goal pursuit. The postactional phase addresses two main questions: First, did I achieve the goal I intended to achieve? Second, does the actual value of the achieved goal meet the expected value? The results of these evaluation processes influence future goal setting and goal striving, thereby influencing primary cognition (i.e., the object-level) through secondary cognition (i.e., the meta-level), as in the control component of Nelson’s model of metacognition.

The mind-set theory of action phases further states that the decision to strive for a certain goal is a psychologically significant event, leading to a certain mind-set that affects cognition and behavior (e.g., Gollwitzer, 1990, 2011; Gollwitzer & Bayer, 1999; Taylor & Gollwitzer, 1995; for a review, see Achtziger & Gollwitzer, 2010). More precisely, the predecisinal phase is characterized by a deliberative mind-set. This mind-set is defined by an openness to all relevant information with the goal of maximizing the likelihood of reaching an objective judgment concerning the desirability and feasibility of the different goal alternatives. In contrast, the implemental mind-set occurs in the postdecisional and preactional phase and is characterized by increased processing of information concerning the planning of goal striving that is the when, where, and how of realizing the goal.

Numerous studies have supported the main assumptions of the mindset theory of action phases (e.g., Gollwitzer, Heckhausen, & Rataficzak, 1990; Gollwitzer & Kinney, 1989), but two crucial questions have been left unanswered: (1) Do strategies exist that enhance people’s goal commitment and goal striving for feasible goals? (2) How can people make sure to reach the goals they have set themselves? More precisely, how do people master the problems inherent in goal striving, such as seizing opportunities to act, warding off distractions, and compensating for failures? Empirical evidence suggests that there are self-regulatory strategies that can improve goal commitment as well as goal striving. In the following, two strategies will be discussed: mental contrasting as a strategy to increase goal commitment and implementation intentions as a strategy to improve goal striving.
The Fantasy Realization Theory

Mental contrasting, as described in fantasy realization theory (Oettingen et al., 2001), is a self-regulatory strategy that can be used in the predecisional phase to improve goal setting by increasing goal commitment to feasible goals (e.g., Oettingen, Mayer, Stephens, & Brinkmann, 2010). Mental contrasting (Oettingen, 1999) refers to the following process: People first imagine a desired future and attaining it (e.g., winning an important soccer match) and then reflect on the present reality that may impede realizing the desired future (e.g., having little time for preparation). The conjoint elaboration of the positive future and the negative reality makes both future and reality simultaneously accessible and thereby highlights obstacles standing in the way of attaining the desired future. Research suggests that mental contrasting helps people to make up their mind about whether to commit to a goal by scrutinizing the feasibility of achieving it. When perceived feasibility is high, people strongly commit to attaining the goal; when perceived feasibility is low, they form either a weak goal commitment or none at all.

Instead of mental contrasting, people may only indulge in a positive future or only dwell on the negative reality. When this occurs, people fail to recognize that they need to act on the status quo in order to arrive at the desired future. As a consequence, expectations are not consulted and goal commitments stemming solely from focusing on either a positive future or a negative reality will fail to be expectancy dependent. The level of goal commitment is then determined by the a priori commitment that the person holds with respect to attaining the desired future, rather than the feasibility of achieving it. Thus, only mental contrasting succeeds in raising commitment when expectations of success are high and in lowering commitment when expectations of success are low.

Empirical Evidence for the Fantasy Realization Theory

So far, a large number of studies have tested the effects of mental contrasting, indulging (focusing on positive future outcomes only), and dwelling (focusing on the negative reality only) on goal commitment and goal striving (Oettingen, 2000; Oettingen, Hönig, & Gollwitzer, 2000; Oettingen, Mayer, Thorpe, Janetzke, & Lorenz, 2005; Oettingen et al., 2001). All of these studies found empirical support for the effectiveness of mental contrasting. For instance, in one experiment, adolescent students had to mentally contrast the positive future of excelling in mathematics (participants imagined feelings of pride, increasing their job prospects, etc.) with the negative reality (participants reflected on being distracted by peers, feeling lazy, etc.). Two weeks after the experiment, students in the mental contrasting condition who initially had high expectations that they could achieve the desired goal (i.e., excel in math) received better course grades and teachers rated them as exerting more effort compared to students in the indulging and dwelling conditions (Oettingen et al., 2001, Study 4). The same pattern of results emerged in schoolchildren starting to learn a foreign language (Oettingen et al., 2000, Study 1), in students wishing to solve an interpersonal problem (Oettingen et al., 2001, Studies 1 and 3), and in students being offered the opportunity to get to know an attractive stranger (Oettingen, 2000, Study 1).
Recently, Oettingen and colleagues have turned to analyzing the processes underlying the creation of strong goal commitments by mental contrasting (e.g., energization; Oettingen et al., 2009) and to answering the question of how people can be taught to mentally contrast their desires and concerns as a metacognitive strategy. This research focuses on teaching individuals the cognitive procedure of mental contrasting in a way so that it will be used not only for a specific concern, but also for everyday desires and concerns in general. For instance, Oettingen, Mayer, and Brinkmann (2010) taught German personnel managers how to perform mental contrasting by working through a specific work-related problem (e.g., giving constructive feedback to their coworkers). After 2 weeks, it was observed that managers who then completed a mental contrasting exercise reported better time management, more ease of decision making, and more effective project completion in general, compared to those who performed a control exercise (i.e., thinking about the same issues but not contrasting desired future outcomes with reality).

The Role of Metacognition in the Fantasy Realization Theory  How does mental contrasting fit into recent metacognitive frameworks? Thinking of mental contrasting from a metacognitive perspective, it becomes clear that people who mentally contrast their concerns and desires do compare the current state (on the object-level; primary cognition) with positive outcomes of a to-be-attained future state (represented on the meta-level as secondary cognition). Thus, they inform the meta-level about obstacles on the object-level (i.e., in present reality) and their model or mental representation of their concerns and desires becomes updated. Moreover, mental contrasting should influence willingness to plan (i.e., control) because it increases commitment to feasible goals. Finally, it should enable people to realize what the main obstacles to goal pursuit are so that they are in a position to plan specifically how to deal with these obstacles as soon as they occur (for a detailed discussion of this point, see “Mental Contrasting With Implementation Intentions” later in this chapter).

The Theory of Intentional Action Control

Whereas the fantasy realization theory focuses on increasing goal commitment in the predecisional phase (i.e., the improvement of goal setting), the theory of intentional action control deals with the problem of how set goals can be reached (i.e., the improvement of goal striving). Based on the mind-set theory of action phases, the theory of intentional action control (Gollwitzer, 1993, 1999) argues that one of the reasons for the intention–behavior gap, or why people do so poorly in transforming their intentions into action, lies in the failure to spell out how they want to realize their goals. It is suggested that most people lack the metacognitive knowledge of how to form action plans in order to support their goal striving. Not thinking carefully about relevant opportunities, hindrances, and instrumental goal-directed behavior results in failing to initiate goal-directed behavior (e.g., Brandstaetter, Lengfelder, & Gollwitzer, 2001) and failing to shield one’s goals from external distractions (e.g., Gollwitzer & Schaal, 1998) and negative inner
states (e.g., anxiety and nervousness: Achtziger, Gollwitzer, & Sheeran, 2008; ego-depletion and feelings of incompleteness: Bayer, Gollwitzer, & Achtziger, 2010).

In order to elucidate the intention–behavior gap, Gollwitzer (1993, 1999) differentiates between two kinds of intentions: goal intentions and implementation intentions. Goal intentions are goals in the common sense and are defined as desired end states that a person wants to attain. They have the format of “I intend to do X” (e.g., “I want to win the upcoming soccer match.”). Implementation intentions are if–then plans defining when, where, and how a person wants to act to reach his or her desired goal. Action plans in the form of implementation intentions have the format of “if situation Y arises, then I will perform behavior Z” (e.g., “If player X calls on me to pass the ball, then I will carefully pass the ball.”).

Empirical Evidence for the Theory of Intentional Action Control

These action plans operate in the service of goals, and in numerous studies they have been found to support strongly goal attainment in a broad variety of domains. For instance, Orbell, Hodgkins, and Sheeran (1997) found that women who had been given the goal of performing regular breast self-examinations greatly benefited from forming implementation intentions. Similar patterns of results have emerged for participating in voluntary cancer screening (Sheeran & Orbell, 2000), resuming functional activity after hip replacement surgery (Orbell & Sheeran, 2000), reducing consultations for emergency contraception and pregnancy testing among teenage girls (Martin, Sheeran, Slade, Wright, & Dibble, 2009), and increasing attendance for psychotherapy (Sheeran, Aubrey, & Kellett, 2007; for a review, see Achtziger & Gollwitzer, 2010; Gollwitzer & Sheeran, 2006).

In most studies examining the effects of implementation intentions, goal intentions and if–then plans were assigned to participants by the experimenters and worded so that they could easily be employed as they were highly appropriate to the predetermined critical situations. In everyday life, people are confronted with all kinds of expected and unexpected situations with which they must deal effectively to reach their goals. It therefore seems crucial to teach people to form their own if–then plans as new situations emerge as a useful metacognitive strategy for supporting their goal striving. In one early study (Muirralf, White, & Phillips, 1996), participants were instructed to form their own individual if–then plans by explaining the advantage of linking a specified viable opportunity for action initiation to a goal-directed behavior. By forming their own individual implementation intentions, participants who suffered from alcohol problems learned to control their excessive drinking behavior.

Recently, Achtziger and colleagues (2008, Study 2) taught people how to form implementation intentions that could control disruptive inner states (e.g., nervousness, anxiety). Participants were tennis players and, in this study, they found it easy to follow the if–then planning instructions. Most importantly, they performed better in the subsequent tennis match compared to earlier matches and compared to participants who learned only to form goal intentions. These findings suggest that teaching people how to form implementation intentions as a metacognitive strategy of the self-regulation of goal striving is possible and effective.
The question arises whether there is a meaningful metacognition-related distinction between various forms of implementation intentions. One might wonder whether we can only speak about metacognitive implementation intentions if both parts of these plans (the "if" and the "then") are related to thoughts. Numerous studies have shown that quite different forms of implementation intentions are effective. There are examples of if-then plans in which only the "if" part or only the "then" part is related to thoughts; nevertheless, these plans are effective. Implementation intentions can hence be metacognitive (if both parts define thoughts), partly metacognitive (if only one of the two parts defines a thought), or not metacognitive at all (if neither of the two parts defines thoughts).

Recently, Gollwitzer, Wieber, Myers, and McCrea (2010) have argued that "if" parts that specify thoughts are more integrative and therefore might imply more critical situations than the mere specification of certain external situations themselves. Moreover, Adriaanse, de Rijder, and de Wit (2009, Study 1) have shown that motivational cues (specified as thoughts in the "if" parts of implementation intentions) can help to enhance healthy food consumption. Implementation intentions in this study were partly metacognitive because only the "if" part (but not the "then" part) of the plan was related to thoughts. Achtziger et al. (2008) have shown that implementation intentions that are metacognitive in the sense that both of their parts define thoughts are also quite effective (e.g., "If I feel self-abandoned, then I will tell myself, ‘I can win this match.’").

The Role of Metacognitions in the Theory of Intentional Action Control  Interestingly, implementation intentions can be seen as both a monitoring process and a control process. The formation of implementation intentions reflects a monitoring process, in the terms of Nelson’s metacognition model (1996), because this act of will uses specific cues at the object-level (i.e., the when, where, and how of goal-directed behaviors; primary cognition) in order to support goal striving and goal attainment. When people form implementation intentions on their own, they first carefully think about situational cues in order to decide in which situation it would be best to implement their goal-directed behaviors. Moreover, these goal-directed behaviors are subjected to a reality check in order to determine their instrumentality for goal attainment. Thus, these cues at the object-level (or primary cognition) inform the formation of the plan at the meta-level (i.e., secondary cognition).

After forming the implementation intention, a mental representation (or model) of this action plan is established on the meta-level as a secondary cognition. This representation is in a state of heightened activation, leading to a heightened cognitive accessibility of the if–then plan (Achtziger, Bayer, & Gollwitzer, 2010; Gollwitzer, 1999). From the moment this representation is stored on the meta-level, it guides goal striving by controlling behavior (i.e., by facilitating the implementation of the goal-directed behavior specified in the “then” component of the implementation intention). This action control process in turn affects the object-level (i.e., the current state of the world in the sense of primary cognition) for the purpose of goal attainment. However, after an implementation intention
has been realized, it can be assumed that people check whether the respective superordinate goal has been met. Accordingly, a new process of monitoring in the sense of secondary cognition is initiated that compares the current state (i.e., the object-level) with the desired end state (represented on the meta-level).

**Mental Contrasting With Implementation Intentions**

Recently, Oettingen and Gollwitzer (2010) explored whether it is possible to construct an intervention that teaches people to use an integrated combination of the two self-regulation strategies of mental contrasting and implementation intentions so that people can become effective self-regulators of their goal setting and goal striving in everyday life. This intervention that combines mental contrasting (MC) with implementation intentions (II) is called MCII. The procedure was expected to be especially effective because in order to maximize their beneficial effects, implementation intentions require that strong goal commitments be in place (Achtziger et al., 2010, Study 2; Sheeran, Webb, & Gollwitzer, 2005, Study 1).

Mental contrasting creates such strong commitments. Additionally, mental contrasting supports the identification of obstacles that hinder goal striving. These same obstacles can then be addressed by if-then plans by specifying these critical situations in the “if” component of an implementation intention and then linking these obstacles to goal-directed responses in the “then” component. Moreover, mental contrasting is known to increase the readiness to form if-then plans (Oettingen et al., 2001, Study 3; Oettingen & Kappes, 2009); accordingly, an intervention such as MCII that explicitly suggests forming implementation intentions after mental contrasting is likely to show even stronger effects than the deployment of just one of the two strategies.

**Empirical Evidence for MCII** The impact of the MCII intervention on behavior change was tested in various studies targeting different types of problem behaviors. For instance, the impact of MCII on improving mobility in a sample of chronic back pain patients was examined by Christiansen, Oettingen, Dahme, and Klinger (2010). Participants were randomly assigned to either a control group (i.e., standard outpatient back pain program) or an intervention group (i.e., this program plus the MCII intervention). The experimental condition involved (in addition to the standard back pain program) two one-half hour sessions. In the first session, participants engaged in mental contrasting about realizing fantasies related to improved mobility, and during the second session, participants identified behaviors in response to the obstacles generated in the first session to serve as the focus of an implementation intention (e.g., “If I am afraid of causing damage to myself, then I will remember that movement is good against pain.”). The dependent variables for this study were physical strength, appropriate lifting behavior, and pain severity, after 10 days and after 3 months, in comparison to respective pre-intervention baseline measures.

The findings indicate that MCII, in conjunction with the standard treatment, improved physical mobility (strength and lifting) in chronic back pain patients beyond the standard treatment. This was true for subjective and objective measures of physical mobility. These effects were independent of participants’ experienced
pain, which did not significantly differ between conditions during and after treatment. In further intervention studies using MCII to target health behavior, the combination of mental contrasting with implementation intentions was shown to be effective in inducing stable behavior change with respect to exercising (over 4 months; Stadler, Oettingen, & Gollwitzer, 2009) and healthy eating (over 2 years; Stadler, Oettingen, & Gollwitzer, 2010).

Given that MCII as a metacognitive strategy is expected to improve self-regulation in general, the impact of MCII trainings has also been examined on broader variables such as self-discipline in everyday life. In line with the conceptualization of self-discipline suggested by Tangney et al. (2004), the following key components of self-regulation were examined in one study (Oettingen, Barry, Guttenberg, & Gollwitzer, 2011, Study 2): time management, project completion, and the feeling of being on top of things. Undergraduate participants were assigned to an MCII intervention group or to a control group. As dependent measures, participants rated self-discipline at two time points: immediately following the intervention and once again 1 week after the intervention. The results showed that the MCII intervention enhanced participants’ reports of self-discipline in terms of time management, project completion, and feeling on top of things over the time period of 1 week, and in comparison to control group participants (who either addressed the same type of thought content, reflecting on it in a different way, or used the MCII way of reflection on different thought content). Apparently, the MCII intervention empowered individuals with self-regulatory skills, first by helping them to commit to feasible rather than unfeasible goals and then by helping them to achieve the goals effectively.

In sum, this powerful yet simple combination of mental contrasting with implementation intentions seems to help people to meet their goals or, when taught as a metacognitive strategy, to improve the self-regulation of goal setting and goal implementation in general.

CONSCIOUSNESS AND NONCONSCIOUSNESS IN GOAL PURSUIT

Traditional models of motivation are based on an agentic, conscious self that deliberately sets goals (e.g., Atkinson, 1957; Gollwitzer, 1990). However, within the last two decades researchers have argued that there is an alternative route to goal attainment: the nonconscious mode of goal striving (see Bargh et al., 2010). Social cognition research has shown that the activation of a goal can also be achieved outside awareness. This can, for example, be accomplished by subliminally presented goal-relevant cues. Although not consciously perceived, subliminally presented cues have repeatedly been shown to initiate goal striving successfully (e.g., Bargh, 1989, 2006).

Similarities Between Conscious and Nonconscious Goal Pursuit

Early research on nonconscious goal striving focused on its similarities to conscious goal striving, demonstrating that nonconscious and conscious goal striving have
similar outcomes (Bargh, Gollwitzer, Chai, Barndollar, & Troetschel, 2001). For example, researchers showed that nonconscious and conscious goal striving have the same affective and motivational consequences. Chartrand and Bargh (2002) gave participants an anagram task that was either easy or impossible to solve. By indicating that it was merely a filler task, the experimenter downplayed the importance of the task to the participants. For those participants who were previously primed with achievement, but not the control group, working on the easy anagrams resulted in improved mood and increased motivation, whereas working on difficult anagrams resulted in depressed mood and lower motivation to perform a subsequent task. Thus, even when participants were not aware of the primed goal, the activation of an achievement goal influenced their affective and motivational reaction to their performance, as has been shown when people consciously strive for goals.

Differences Between Conscious and Nonconscious Goal Pursuit

Recently, research has started to elucidate the differences between conscious and nonconscious goal striving. For instance, Oettingen, Grant, Smith, Skinner, and Gollwitzer (2006) argued that people who strive for nonconscious goals are acting in an explanatory vacuum; that is, they do not know why they are doing what they are doing. As a consequence, when explanations of one’s actions are demanded (e.g., because one acts against an established norm), nonconscious goal strivers have a disadvantage because they cannot access the nonconscious goal that is driving their behavior. Nonconscious goal strivers therefore try to fill this explanatory vacuum by coming up with potential goals that might have caused their behavior. They are thus found to accept readily any suggestions for such goals as provided by their situational surroundings (Parks-Stamm, Oettingen, & Gollwitzer, 2010). From the perspective of Nelson’s metacognition model (1996), acting in an explanatory vacuum reflects a disconnection between the meta-level and the object-level and thus between primary and secondary cognition. It appears that information does not flow freely between the two levels, or at least it does not occur on a conscious level.

Implementation Intentions as a Tool for Automatic Goal Striving

As a control metacognitive strategy, implementation intentions appear to automate the control of primary cognition by secondary cognition, thereby automating some of the metacognitive tasks necessary for self-regulation. For example, Stewart and Payne (2008) demonstrated that implementation intentions can control automatic aspects of cognition. Thus, action control by forming implementation intentions can be understood as a conscious attempt to turn conscious goal striving into automatic goal striving. This type of automaticity is in the service of the superordinate goal and it can thus be understood as strategic automaticity (Gollwitzer & Schaal, 1998).
THE ROLE OF THINKING POSITIVELY ABOUT THE FUTURE IN THE SELF-REGULATION OF GOAL PURSUIT

Until now we have discussed how our representations of goals influence our behavior, what strategies can be used to ensure that we choose and commit to the right goals, and how we can handle problems arising in the process of goal striving. The following section will focus on a different aspect of metacognition in goal pursuit by asking how thinking about possible futures (i.e., desired end states) impacts goal pursuit.

On the one hand, research has shown that optimistic thinking about the future can foster motivation and performance, whereas pessimistic thinking seems to dampen it (e.g., Bandura, 1997; Taylor & Brown, 1988). Accordingly, optimistic thinking is associated with successful cognitive and self-regulatory problem solving and with setting high standards and aspirations. Such beliefs about the future, or expectancy judgments, pertain to self-efficacy expectations (i.e., whether one can perform a certain behavior; Bandura, 1997) and outcome expectations (i.e., whether performing a certain behavior will lead to the desired outcome; Bandura, 1997) as general expectations (i.e., whether a certain event will occur; e.g., Oettingen & Wadden, 1991) or as generalized expectations (i.e., whether the future in general will be positive or negative; Scheier & Carver, 1992).

On the other hand, some forms of thinking positively about the future, such as those based less on past experiences and thus less influenced by performance history, seem not always to be beneficial for effortful action, performance, and well-being. For example, wishful thinking that is mainly unrelated to concrete past experiences is linked to lower performance and well-being compared to planning future behavior and confrontational coping styles (e.g., Lengua & Sandler, 1996; Reid, Dubow, & Carey, 1995). Experimental research on how self-regulatory thoughts affect task completion also showed that positive thoughts are not always beneficial for effort and performance. For example, Goodhart (1986) reported unfavorable effects of positive task-related thoughts or images on success in solving anagrams.

These studies are in line with the Oettingen and Mayer (2002) proposition that there are actually two distinguishable types of thinking about the future with differential effects on motivation and performance. Beliefs about the future (expectations about feasibility) should be differentiated from mere positive images (fantasies) depicting future events. Beliefs are expectancy judgments that assess the probability of occurrence of certain events (i.e., feasibility), whereas images are solely fantasies that contain future events, neglecting information about the feasibility of the event. Positive expectancy judgments, then, are beliefs that a desired event is likely to occur; positive fantasies about the future, in contrast, are positively experienced images of future desired events that emerge in one's stream of thought.

Oettingen and Mayer (2002) found that the experienced positivity of fantasies predicted low effort and low success over various periods of time (from 2 weeks to 2 years). This correlation held true for different life domains (professional, interpersonal, academic, and health) and for people of different ages (young adults, the elderly). In all of these studies, high expectations of success were associated with the positivity of experienced fantasies. When expectations were controlled
for, the authors found that the detrimental effects of positively fantasizing about the future were even stronger. This strongly suggests that positive fantasies about future events can have negative effects on both effort and success.

But even optimistic beliefs can hamper goal striving when they lead to adopting an avoidant coping style linked to low effort, performance, and well-being (e.g., Lenga & Sandler, 1996; Reid et al., 1995). For example, avoiding information about upcoming medical procedures in order to remain optimistic and to control one’s negative feelings prior to medical procedures has been shown to be less beneficial than mentally facing the painful future events, for both children and adults (Peterson, Oliver, & Saldana, 1997; Taylor & Clark, 1986). Avoidant coping with future stressors is linked to neuroticism (Bolger, 1990), sadness, and anger (Spirito, Stark, & Tyce, 1994). Further, avoidant coping seems to impede achieving mastery of the problem at hand, especially when mastery cannot be achieved with ignorance, but rather demands vigilance and effortful action (Carver, Scheier, & Weintraub, 1989; Lazarus, 1983). In line with this work, empirical evidence shows that students reporting habitually denying stressful events in order to cope with them felt more threatened by an upcoming exam than students who used less denial (Carver & Scheier, 1994).

In sum, thinking positively about the future is not always beneficial. Most interestingly, if it simply implies fantasizing about desired end states, including neither monitoring—that is, comparing the desired end state (as a secondary cognition) with the actual reality (i.e., primary cognition)—nor planning, then it will hinder goal attainment.

THE ROLE OF COUNTERFACTUAL THINKING ON THE SELF-REGULATION OF GOAL PURSUIT

Counterfactual thinking is defined as thinking about how a past event could have been better or worse, and thus it can be understood as the reflection of “what might have been” (Galinsky, Liljenquist, Kray, & Roese, 2005; Kray et al., 2010). The literature distinguishes two kinds of counterfactuals: upward counterfactuals and downward counterfactuals. Upward counterfactuals are defined as if—then statements indicating how a previous outcome could have been better. For example, the professional soccer player might think after losing the semifinal, “If only I had practiced my passes harder, then I would not have failed in the match.” Downward counterfactuals refer to thoughts about how an outcome could have been worse. For example, the soccer player might think, “At least I completed several good passes in the game; I could have done worse.”

A large body of literature has documented the consequences of these thoughts for subsequent behavior and affect (for reviews, see Epstude & Roese, 2008; Markman & McMullen, 2003; Sanna, Carter, & Small, 2006). Overall, empirical evidence has shown that counterfactual thoughts are positively related to preparation, task effort, and performance. Upward counterfactuals are particularly beneficial for subsequent performance (Markman, McMullen, & Elizaga, 2008; Roese, 1994).
Several explanations for this effect have been postulated. For instance, Roese and colleagues (Epstude & Roese, 2008; Roese, 1994; Smallman & Roese, 2009) have suggested that counterfactual thoughts affect performance by identifying useful strategies and thus support the formation of plans as metacognitive strategies. For example, one could easily convert the counterfactual “If only I had practiced my passes harder, then I would not have failed in the match” into the implementation intention of “Whenever I am called for a training session to prepare for an upcoming match, then I will practice passing very seriously.”

In addition, counterfactual thoughts might improve performance by mobilizing effort (Epstude & Roese, 2008; Markman & McMullen, 2003). Upward counterfactual thinking involves evaluating the outcome relative to a higher standard, likely producing disappointment with one’s actual goal progress. Theories of effort mobilization (e.g., Brehm & Self, 1989) and discrepancy reduction (Carver & Scheier, 1999) both suggest that such disappointment increases effort and persistence. Consistent with this account, the performance benefits of upward counterfactual thinking appear to be limited to situations in which the individual is dissatisfied with the outcome (Markman et al., 2008). However, upward counterfactual thoughts can also have negative effects on motivation when people have the desire to excuse poor performances and protect self-esteem (McCrea, 2008).

To summarize, counterfactual thinking can have positive effects on motivation and performance because, among other benefits, it facilitates the forming of implementation intentions. Thinking about why one failed and how one could have succeeded already implies the deployment of metacognitive strategies. When one asks oneself why one failed, this can be understood as a type of retrospective monitoring, comparing the past reality (primary cognition) to the desired end state (secondary cognition). Identifying how one could have succeeded is likely to influence one’s planning in the future whenever a similar goal is formed.

CONCLUSION

The goal of this chapter was to outline the importance of metacognition in the self-regulation of goal pursuit. To summarize, metacognition as already described in Nelson’s model (1996) plays an important role in the self-regulation of goal pursuit because it helps us to understand the way in which important and effective self-regulatory strategies that enhance goal commitment (mental contrasting) and goal striving (implementation intentions) work. Whereas goal striving can be conscious as well as nonconscious, forming implementation intentions is a tool that transforms conscious goal striving into automatic goal striving.

On the one hand, we reviewed research suggesting that optimistic thinking that leads to avoidant coping styles or positive fantasies that are independent of past behavior and do not take the feasibility of the desired future into account will not have positive effects on goal attainment. Upward counterfactuals (“what might have been”), on the other hand, can have positive effects on motivation and performance.

Turning back to our example at the beginning of the chapter: What should the professional soccer player do after the failure of his team in the semifinal to ensure his
commitment and motivation for the next match? In our opinion, he should mentally contrast the desired future of winning the third-place prize to the present reality in order to increase his goal commitment to train for the next match. He should do counterfactual thinking about the lost match (“If only I had passed to the best players, then I would not have failed in the match.”) and form respective implementation intentions (“If I get the ball, then I will carefully pass it to Schweinsteiger.”). And what should he avoid doing? He should not adhere to optimistic beliefs (“We will win anyway.”) or indulge in positive fantasies (“We will celebrate the victory extensively.”).

REFERENCES


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