

JUDGMENTS OVER TIME

*The Interplay of Thoughts, Feelings,
and Behaviors*

Edited by

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Fantasy Realization and the Bridging of Time

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"The person who is aware of the past knows about the future!" This statement expresses how psychological research in the past decades has conceived of thinking about the future. Thinking about the future was conceptualized and operationalized as judgments on how likely it is that certain events or behaviors will or will not occur. Such expectancy judgments are held to reflect a person's past experience and performance history (Bandura, 1977; Mischel, 1973). As past behavior has always been a powerful predictor of future behavior, it comes as no surprise that to this date expectancy judgments have been one of the most important cognitive variables for predicting motivation and behavior. Moreover, expectancy judgments, over and above past behavior, have been potent determinants of future behavior. Finally, because expectancy judgments can be precisely and easily assessed via paper-and-pencil measures, they gained enormous popularity in predicting behavior in many areas of psychology.

This chapter has three parts. First, based on William James's distinction between beliefs and images, we differentiate two forms of thinking about the future: expectancy judgments and fantasies. We show that the distinction between expectancy judgments and fantasies is important, because the two forms of thinking about the future differentially predict motivation and performance. Whereas positive expectancy judgments are a precursor of heightened effort and successful performance, positive fantasies pose a clear hindrance. In the second part of the chapter, we argue and show that fantasies about the future can be used as a self-regulatory strategy of goal setting when contrasted with thoughts about impeding reality. After such mental contrasting of future and present reality, expectancy judgments and thus people's performance his-

tory become relevant for thought, feeling, and action. The self-regulatory strategies of indulging in the future or dwelling on the present, in contrast, are found to be moderators of the expectancy-behavior link. The third part of the chapter discusses these findings in the context of cultural determinants of the three self-regulatory strategies of goal setting.

Expectations Versus Fantasies

William James characterizes a belief in terms of experienced consent in the truth of a given thought. James (1890/1950) explicates: "Everyone knows the difference between imagining a thing and believing in its existence, between supposing a proposition and acquiescing in its truth. In the case of acquiescence or belief, the object is not apprehended by the mind, but is held to have reality" (James, 1890/1950, vol. 2, p. 283).

Beliefs Versus Images

According to William James, beliefs are the outcome of a reality check of the content of a given thought. James describes believing as an emotional experience of consent. That what has been only thought of so far is now taken as truth. To believe in an idea means "the cessation of theoretic agitation, through the advent of an idea which is inwardly stable, and fills the mind solidly to the exclusion of contradictory ideas" (James, 1890/1950, vol. 2, p. 283). If one believes in something, action may ensue on the basis of the respective idea: "When this is the case, motor effects are apt to follow." (James, 1890/1950, vol. 2, p. 283).

The experienced inner stability that results from believing applies, according to James, as much to believing as to disbelieving. A person is only then disbelieving if he or she believes in something else. Thus the opposite of believing is not disbelieving but doubting and searching: "*The true opposites of belief, psychologically considered, are doubt and inquiry, not disbelief.*" (James, 1890/1950, vol. 2, p. 284).

A belief is, therefore, different from a sheer image of an event. This implies that consciousness may nourish two distinct relations to an event. The event may simply be focused on in terms of its appearance in thought, or the event may be judged in terms of being true or false (i.e., it is judged in terms of its match to reality). Both relations may be present in consciousness, the sheer thought and the judgment. William James cites I. Brentano:

But we must insist that, so soon as the object of a thought becomes the object of an assenting or rejecting judgment, our consciousness steps into an entirely new relation towards it. It is then twice present in consciousness, as

thought of, and as held for real or denied. (Brentano, cited in James, 1890/1950, vol. 2, p. 286).

Thus in consciousness the same content may appear in different ways: as a consenting or disagreeing judgment regarding its degree of truth on the one hand, and as the sheer thought or image per se on the other.

Thinking About the Past Versus Thinking About the Future

William James focused on images and beliefs about events and behaviors that happened in the past. Here the distinction between images and beliefs is easy to comprehend. One may more or less embellish past events in one's thoughts, or one arrives at a judgment about whether the events actually took place in the way one has thought about them. Whereas the first way of thinking about the past keeps events in fluctuation, the second way implies a cognitive laying down of the degree of truth of the event, which is a relief to the prior "theoretic agitation" (James, 1890/1950). It is the cognitive determination regarding the degree of truth that distinguishes the belief or judgment from the sheer image or thought.

For thinking about the future, these considerations imply that beliefs are judgments about the likelihood of occurrence of anticipated events. In such likelihood judgments, a person lays down the truth of future events. Like beliefs about the past, these beliefs or judgments about the future should relieve a prior "theoretic agitation" and thus qualify as the foundation for action.

But how can we conceive of the second way of thinking about the future, the sheer thoughts and images? Contrary to expectancy judgments, events depicted in one's thoughts and images about the future are not tested for their degree of truth. Even though the building stones of such fantasies may be based on experiences of the past, fantasies are not constrained by the cognitive mechanisms that make people appraise factual information (Klinger, 1971, 1990; Singer, 1966). Events do not need to be depicted in their wholeness, in their logical consistency, and in their real consequences. A person may thus embellish future events in the mind's eye without worrying about their potentially low feasibility. Similarly, he or she may project wonderful moments of the past into the future without bothering about how likely it is that these moments will actually become true again. Finally, one may enjoy future successes in one's fantasies without thinking about the cumbersome steps that lead to the realization of these successes. In short, one is forced neither to think about what it takes to actually realize one's fantasies about the future nor to consider one's expectations of successfully realizing them.

Some fantasies may come in the form of *Zauberdenken* (i.e., thoughts depicting actions and events that violate natural laws or social norms; Lewin, 1926,

Mahler, 1933). However, people most frequently fantasize about not yet realized but principally possible futures. For example, adolescents may fantasize about becoming brilliant college students, middle-aged adults may see themselves exercising regularly, or subordinates may imagine shaking off the pressure from their superiors. In this sense, fantasies are similar to daydreams (i.e., thoughts pertaining to immediate or delayed desires, including instrumental activities to attain the desired outcomes; Klinger, 1971, 1990). However, even if fantasies depict events that obey natural and social laws, they still may be disconnected from the perceived probabilities of successful realization. In short, people can experience future blessings in their fantasies without considering the probabilities that these blessings will actually occur.

According to William James (1890/1950), the thoughts and images about the past refer to what has happened and what could have happened. Thus they relate to the recent concepts of rumination (Martin & Tesser, 1989; McIntosh, Harlow, & Martin, 1995; Nolen-Hoeksema, 2000; see also Sanna, Stocker, & Clarke, 2003, for a summary) and counterfactual thinking (Kahneman & Miller, 1986; Markman, Gavanski, Sherman, & McMullen, 1993; Markman & McMullen, 2003; Sanna, Chang, & Meier, 2001; Sanna, Meier, & Wegner, 2001; see also Roese, 1997, for a summary). However, there is a decisive difference between images about the past versus those of the future. Images about the past depict events that already have happened (or could have happened) in a certain way, and thus the issue at hand is behaviorally closed (i.e., nothing can be done to change things). Images about the future, to the contrary, may still become true. Therefore, thoughts and images about the future always have potential relevance for action. We therefore postulate that not only do beliefs about the future (expectancy judgments) have relevance for action, but that this is also true for images about the future (fantasies).

The importance of the distinction between these two forms of thinking about the future (i.e., expectancy judgments versus fantasies) would be convincingly demonstrated if we observed that they differentially predict motivation and action. Indeed, a series of studies demonstrated that expectancy judgments versus fantasies differentially relate to one and the same measure of effort and successful performance (Oettingen & Wadden, 1991; Oettingen & Mayer, 2002). Before we describe three of these studies, we delineate why we think that the two ways of thinking about the future have differential motivational consequences.

Motivational Consequences of Expectations Versus Fantasies

A host of findings testify that expectations of successful performance foster effort and successful performance. These results pertain to success in interpersonal relations, to successful academic and professional achievement, and to

attaining mental and physical health (see Bandura, 1997; Peterson & Bossio, 1991; Taylor & Brown, 1988; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000, for summaries). Because high expectations of success are not fabricated but are based on the appraisal of one's own experiences and performances (Bandura, 1977; Mischel, 1973), they signal that future efforts will not be in vain. Low expectations of success, in contrast, hint to the fact that one should hold off one's engagement. Based on these considerations and based on the numerous findings showing performance-enhancing effects of high expectations of success, we hypothesized a positive correlation between high expectations and successful performance.

To the contrary, fantasies should fail to be a valid signpost for engagement. Rather, they tempt the person to mentally enjoy desired futures in the present moment, concealing the necessity to still realize them in actuality. Therefore, fantasizing about one's desired future should trigger little motivation to actually attain the mentally enjoyed future events. Moreover, fantasies about a trouble-free path to success should hinder efforts to prevent potential obstacles and the forming of plans specifying how to overcome hindrances that may ensue. Lacking preparatory action and careful planning should further compromise motivation and successful performance.

Positive fantasies may focus on having achieved success, on moving smoothly toward it, or on both. Regardless of whether such fantasies are outcome-based or process-based, they should produce little motivation and weak performance. If, however, individuals, in more negatively felt fantasies, question a future of successful performance and its smooth attainment, the desired future is no longer experienced as merely enjoyable but as something to be achieved in actuality. People can now lay out the road to success, prepare for setbacks and hindrances, exert effort, and show persistence. In sum, whereas positive expectations of success should predict effortful action and successful performance, positive fantasies should predict low effort and little success.

In the following three studies, we tested this idea of a differential relation of thinking about the future in terms of expectations versus fantasies to actually achieved successes. In each study, thinking about the future in terms of expectations and fantasies was assessed at least a week before we measured effort and successful performance. We operationalized expectations by the perceived probability of attaining success, and we measured fantasies by using idiographic techniques that tap participants' thoughts and images about achieving successful performance in the future.

Academic Achievement

Right before their midterm exams, college students enrolled in an introductory psychology class were asked to indicate the grade they would like to obtain in the course. To measure expectations, we asked participants to indicate the

likelihood that they would actually receive this course grade (Oettingen & Mayer, 2002, Study 3). We then assessed course grade-related fantasies. Participants completed a scenario in writing that depicted them as already having taken all the exams and being on their way to the building in which the course grades are posted. Immediately thereafter, participants rated the experienced positivity/negativity of the reported thoughts and images. Performance was measured by change of course grades from midterm (when expectations and fantasies were assessed) to the final exam.

Previous research has amply documented that high expectations of success build academic achievement. This is true for students of different ages and different educational backgrounds, and with respect to a variety of indicators (e.g., standardized tests, course grades, solving intellectual tasks, application of learning strategies; Schunk, 1989; Zimmerman & Martinez-Pons, 1992; see also Bandura, 1997; Multon, Brown, & Lent, 1991, for summaries). The predictive power of positive fantasies for academic achievement, however, has not been analyzed. Following the ideas presented here, we hypothesized and observed that students entertaining high expectations of success invested much study effort and achieved comparatively high course grades, whereas students entertaining positive fantasies failed to study hard and achieved low course grades (from midterm to the final exam).

The predictive relation between positive fantasy and low performance was mediated by a lack of effort, as measured by the number of hours students had spent studying, by their reported study effort, and by the amount of extra-credit work they had been handing in between their midterm and their final exams. Thus positive fantasies led to less studying than more negatively toned fantasies, and this in turn produced lower levels of achievement as measured by course grades.

This study investigated the role of expectations versus fantasies in building intellectual achievement. The next study attempted to conceptually replicate the pattern of results in the domain of professional achievement.

Professional Achievement

German graduating students who did not have jobs yet participated in our study on transition into work life (Oettingen & Mayer, 2002, Study 1). We first asked participants for their expectations of finding a job in their field of interest. To measure the positivity of their work-related fantasies, we then asked participants to generate positive and negative fantasies about their "transition into work life, looking for a job, finding a job" and to write these fantasies down. Thereafter, participants had to indicate how often they recently had such positive and negative thoughts and images. We subtracted the indicated frequency of negative fantasies from the frequency of positive fantasies to arrive at an overall positivity score for work-related fantasies.

Two years later we assessed participants' professional success by asking them how many job offers they had gotten and how high their present salaries were. Partial correlations show that graduates with positive expectations got more job offers and earned higher salaries than participants with negative expectations; graduates with positive fantasies, to the contrary, got fewer job offers and earned less money than participants with negative fantasies. Finally, participants with positive fantasies put less effort into looking for jobs than did participants with negative fantasies: They reported that they sent out fewer job applications.

Can the predicted pattern of results also be observed in domains other than academic and professional achievement? The following study pertains to the health domain. Here, expectations have also been a pivotal predictor of high effort and success (Scheier et al., 2003; Taylor et al., 2000; see also Bandura, 1997; Peterson & Bossio, 1991, for summaries). Participants were older adults, because at this period of the life span achieving health becomes a particularly pressing concern.

Recovery From Surgery

Participants were patients admitted to a hospital to undergo total hip-replacement surgery (Oettingen & Mayer, 2002, Study 4). Total hip-replacement surgery is a commonly performed surgery in patients with osteoarthritis of the hip, which is the most frequent joint disorder and a particular problem in the elderly (Gogia, Christensen, & Schmidt, 1994). The day before surgery, we assessed participants' expectations and fantasies regarding their recovery. First, participants had to answer questions such as how likely they thought it would be that 2 weeks after surgery they would be able to go for a brief walk using an assistive cane. To assess their fantasies, we asked them to imagine, in writing, five scenarios to completion and then to rate the affective tone of their own thoughts and images. The scenarios pertained, for example, to participants' abilities to walk to the hospital newspaper stand or, after being home again, to go on a trip with a friend. After imagining a story to completion and writing down the respective thoughts and images, participants indicated how positively and how negatively they had experienced their thoughts and images.

Two weeks after surgery, while participants were still in the hospital, each physical therapist who was mainly responsible for a particular patient indicated the functional status of her patient's hip (Gogia et al., 1994). Physical therapists used classic indicators such as degree of hip joint motion (e.g., extension and flexion) and competence to walk on stairs (Dekker, Boot, van der Woude, & Bijlsma, 1992). In addition, they evaluated patients' general recovery (e.g., in terms of muscular strength and degree of pain).

Whereas positive expectations were precursors of successful recovery, positive fantasies were a hindrance, and this was true whether patients' recovery was measured via specific criteria (i.e., hip joint motion or walking stairs) or via more general measures (i.e., general recovery). The findings stayed unchanged after controlling for presurgery hip condition (as assessed by the doctors), weight (70% of the sample were overweight), and gender.

Subsequent content analyses of the patients' fantasies revealed that participants had idealized their future recovery with respect to both outcome (they imagined having achieved recovery) and process (they imagined an easy and effortless way to recovery). Though idealization of outcome was more frequent than idealization of process, both were positively related to the subjective positivity of their fantasies. Thus positively felt fantasies contain both outcome and process in its idealized form, that is, recovery as well as effortless and unencumbered progress toward recovery. Most important, however, it was the subjectively experienced fantasies rather than the expressed idealization as picked up by the raters that predicted little success in recovery.

Supportive Evidence

We replicated the differential relation of expectancy judgments and fantasies in further areas of the health domain (e.g., chronic illness, Oettingen & Mayer, 2003; weight loss, Oettingen & Wadden, 1991), as well as in other life domains such as the interpersonal domain (e.g., starting a romantic relationship, Oettingen & Mayer, 2002, Study 2). In all of these studies, expectations and fantasies were measured long before we assessed the final measure of successful performance (up to 4 years).

Research on counterfactual thinking further supports the idea of a harmful relationship between positive fantasies and thought, feeling, and action. McMullen and Markman (2000; Roese, 1994; see Markman & McMullen, 2003, for a summary) observed that positive affect resulting from counterfactual thinking led to complacency, whereas respective negative affect increased motivation. Further, experimentally induced positive images in defensive pessimists (Norem & Cantor, 1986) led to less effort and worse performance in getting to know somebody than induced negative images (Showers, 1992). Those who had positive images used fewer confidence-building strategies than those who elaborated negative images. Though the findings on defensive pessimism apply only to high-achieving students, they still support our contention that positive thoughts and images lead to comparatively little motivation and success. Finally, mental simulations that focus on the glorious attainment of a goal (outcome simulations) are less motivating and led to worse performances than process simulations in which people rehearsed the cumbersome steps to reach successful performance (Taylor, Pham, Rivkin, & Armor, 1998).

Summary

Assessed by expectancy judgments, thinking positively about the future predicted high performance, whereas measured by fantasies, thinking positively about the future predicted low performance. Effort and persistence mediated the negative relation between positive fantasies and high performance. These findings underline the importance of William James's (1890/1950) distinction between beliefs and images, which is the foundation of our differentiation between two forms of thinking about the future: expectancy judgments versus fantasies.

Mental Contrasting: Linking Future and Present to Activate the Past

Given the results of the previously described studies, positive fantasies about the future appear to be problematic for realizing a successful future. However, positive fantasies may lead to fantasy realization if they are freed from their purely enjoyable contents. In the following, we describe a self-regulation strategy, mental contrasting, that turns them into binding goals with subsequent goal striving and goal attainment.

Realizing Fantasies About Positive Futures

Mental contrasting entails the conjoint elaboration of the wished-for future, on the one hand, and the present reality that stands in the way of realizing the wished-for future, on the other hand. Through this conjoint elaboration, the wished-for future and the present reality become simultaneously accessible (Kawada, 2004). In addition, mental contrasting activates the relational construct (Higgins & Chaires, 1980) of present reality "standing in the way" of realizing the desired future. Thus a necessity to realize the wished-for future emerges that activates relevant expectations which now will determine whether people will set themselves the goal of realizing their fantasies. Therefore, after mental contrasting, individuals should display flexible and strategic behavior, in that they should refrain from setting the goal of realizing their fantasies when expectancy judgments are low but fully commit themselves to fantasy realization when expectancy judgments signal promise.

A necessity to attain the desired future should emerge only after mental contrasting, not after only fantasizing about the future. After such indulging in the future, expectations will not determine one's goal commitment to realizing one's fantasies. Rather, the implicit pull should lead to moderate goal commitment that is independent of perceived chances of success. Similarly, a necessity

to act should not emerge and expectations should not be activated after reflecting on impeding reality only. After such dwelling, goal commitment to realizing one's fantasies should solely reflect the implicit push triggered by the negativity of the reality events that are thought about.

Mental contrasting may be conceived as a problem-solving strategy. Newell and Simon (1972) argued that the internal subjective representation of a problem (i.e., the person's problem space) needs to be differentiated from the objective problem (in this case, realizing one's fantasies by overcoming one's obstacles in the present reality). After mental contrasting, the person's problem space entails both the positive future and the negative reality, and the negative reality is perceived as standing in the way of the positive future. The positive future now appears as something to be achieved and the present reality as something to be overcome. Therefore, relevant expectations of overcoming the present reality (with its obstacles and temptations) to reach the desired future are activated. If expectancy judgments are promising, goal commitment to realizing one's fantasies will be strong; if expectancy judgments are unpromising, goal commitment to realizing one's fantasies will fail to appear. Fantasizing about the positive future only (indulging) and reflecting on the negative reality only (dwelling) means construing the problem space as entailing only half of the constituents of the objective problem. Because the future does not appear as to be realized and the present does not appear as to be changed, relevant expectancy judgments will not be activated and used in fantasy realization.

Altogether, mental contrasting involves three variables: fantasies about the desired future, reflections on reality, and expectancy judgments (perceived probabilities of successful fantasy realization). Just as we asked before whether it is meaningful to differentiate between expectations versus fantasies about the future, we may now ask whether it is meaningful to distinguish between expectations and reflections on reality. First, expectations are judgments, whereas reflections on reality are free thoughts. That is, expectations are beliefs in the form of probability judgments, whereas reflections on reality are images about reality events as they appear in the stream of thought. Second, expectations pertain to the future, whereas reflections on reality focus on the present. Thus mental contrasting links the future and the present to make expectancy judgments relevant for people's change behavior. Interestingly, however, expectancy judgments are based on past experiences and performances. This implies that by activating expectations of success, mental contrasting makes the past relevant for future behavior.

A series of experiments on goal setting support these hypotheses. We now present two such studies. They pertain to goal setting in the achievement domain and in the interpersonal domain. Specifically, the two studies investigate the role of mental contrasting, indulging, and dwelling in setting goals to excel in mathematics and in solving an interpersonal problem.

Realizing Fantasies of Excelling in Mathematics

The fantasy theme of the study was excelling in mathematics (Oettingen, Pak, & Schnetter, 2001, Study 4). Participants were male adolescents, freshmen enrolled in two vocational schools for computer programming. Mathematics was the critical subject in the first year of studies. We first measured participants' expectations to improve in mathematics and then asked them to name four positive aspects of improving in mathematics and four negative aspects that impeded their improvement. Thereafter, we established the three experimental groups, a fantasy-reality contrast (mental contrast) group, a fantasy-only (indulging) group, and a reality-only (dwelling) group. In the fantasy-reality contrast group, participants had to mentally elaborate in writing two positive aspects of improving in math and two negative aspects that stand in the way in alternating order, beginning with a positive aspect of the future. In the fantasy-only group, participants had only to mentally elaborate four aspects of improving in math, and in the reality-only group, participants had only to mentally elaborate four aspects of impeding reality.

We measured fantasy realization by affective and behavioral indicators of goal commitment. Directly following the mental exercises, all participants reported whether they felt energized with respect to excelling in mathematics. Two weeks after the experiment, we asked teachers to evaluate each student's effort during the past fortnight (e.g., how much persistent effort the student showed in studying math and how intrinsically interested the student was). In addition, we measured goal attainment by asking teachers for each student's present course grade.

In participants in the mental-contrast group, feelings of energization, exerted effort, and achieved grades were more in line with their expectations than in participants in the indulging and dwelling groups. High-expectancy participants in the mental-contrast group felt most energized and exerted the most effort, and their teachers gave them the highest course grades. Low-expectancy participants felt least energized, exerted least effort, and achieved the lowest course grades. In contrast, participants in the indulging and dwelling groups felt moderately energized independent of their expectations. Similarly, teachers rated them as showing moderate effort and gave them mediocre course grades, no matter whether students had high or low expectations.

For the participating adolescents who were at the beginning of their vocational training and thus still had career options available, mental contrasting seems beneficial. Those who have high chances to excel invest their time and effort in a promising career, whereas those with minor chances to excel do not invest in vain and thus may move on and use their energies otherwise (Carver & Scheier, 1998). The pattern of goal commitment that results from indulging

and dwelling seems less beneficial. Being implicitly pulled by the future or pushed by present reality, those with high expectations do not invest enough effort and thus suffer from failing to realize their potential. Those with low expectations, on the other hand, invest too much effort and thus waste their energies in a lost cause. That is, both indulging and dwelling puts people at risk in terms of being out of touch with their potential.

Realizing Fantasies of Solving an Interpersonal Problem

College students had to name their most important interpersonal problem and to indicate their expectations about whether their problem would have a happy ending (Oettingen et al., 2001, Study 3). Participants named, for example, "to get to know someone I like," "to solve a conflict with my partner," or "to improve the relationship with my mother." Thereafter, participants were asked to list four aspects of fantasy realization and four aspects of the negative reality that appeared to stand against fantasy realization. As in the previous experiment, participants in the mental-contrast group had to alternate in their mental elaborations between positive aspects of the desired future and negative aspects of present reality, beginning with a positive aspect. In the indulging group, participants were asked to imagine only positive aspects of a happy ending, and in the negative reality group, participants were asked to reflect only on negative aspects of present reality. In a control group, participants mentally elaborated the negative reality before they fantasized about the positive future. That way the future did not serve as an anchor to which the reality stands in contrast. Thus a relational construct of reality "standing in the way" of the desired future should not be activated, and a necessity to act with subsequent activation of expectations should not emerge. We hypothesized, therefore, that participants in the control group should show the same expectancy-independent pattern of goal commitment as in the indulging and dwelling groups.

Directly following these mental exercises, all participants reported their feelings of energization with respect to solving their interpersonal problems. Two weeks later, to assess the behavioral indicators of commitment, we asked participants to indicate the two most difficult steps they had undertaken to solve their interpersonal problems and to report the exact date they had performed these steps. Immediacy of fantasy realization was defined as the difference in days between the date participants reported to have taken the steps and the date of participation in the experiment.

As in the previous experiment, contrasting participants felt energized and behaved in line with their expectations of success more than did indulging and dwelling participants. High-expectancy participants in the mental-contrast group felt most energized and started right after the experiment to solve their

interpersonal problems, whereas low-expectancy participants felt least energized and delayed their steps toward fantasy realization. To the contrary, indulging and dwelling participants felt moderately energized and started fantasy realization after about a week, independently of whether they expected to solve the problem or not. Participants in the control group (who first mentally elaborated the negative reality and only then the positive future) showed the same pattern of results as the indulging and dwelling groups. This finding implies that the relational construct of reality "standing in the way" of the desired future needs to be activated for mental-contrast effects to occur.

Importantly, the pattern of results was not attributable to differential effects of the manipulation on level of expectations. We found an almost perfect correlation between participants' expectations of success measured before and after the experiment. In addition, the manipulation did not differentially change the level of expectations. This implies that mental contrasting fosters fantasy realization by making high expectations of success relevant for goal commitment rather than by changing the level of expectations of success.

Another experiment using the same design replicated the results with respect to cognitive indicators of goal commitment (Oettingen et al., 2001, Study 1). Specifically, we measured the extent to which participants formed plans to realize their fantasies. Immediately following the experiment, all participants were confronted with eight sentence stems presented in random order: Four sentence stems suggested the formulation of plans, and four did not require the formulation of plans. Participants were supposed to complete those four sentence stems that best matched how they were thinking about their interpersonal problems. When counting the number of sentence stems chosen that led to the formulation of plans, we observed expectancy-dependency in the mental-contrast group, but not in the indulging and dwelling groups.

Supportive Evidence

We replicated these results in further experiments. In the academic domain, for example, experiments pertained to studying abroad (Oettingen et al., 2001, Study 2), to combining work and family life (Oettingen, 2000, Study 2), and to acquiring a second language (Oettingen, Hönig, & Gollwitzer, 2000, Study 1). In the interpersonal domain, experiments focused on getting to know an attractive stranger (Oettingen, 2000, Study 1) and to successfully seeking help (Oettingen, Hagenah, et al., 2005, Study 3). In the health domain, experiments concerned the improvement of patient-provider relations (Oettingen, Hagenah, et al., 2005, Study 1) and the reduction of cigarette consumption (Oettingen, Mayer, & Thorpe, 2005).

The results hold for goal commitment assessed by cognitive, affective, and behavioral indicators (e.g., planning, anticipated disappointment in case of failure, financial investment), via self-report or observations, and measured either

directly after the experiment or weeks later. Mental contrasting turned out to be an easy-to-apply self-regulatory tool of goal setting, as the described effects were obtained even when participants elaborated the future and the reality only very briefly (i.e., were asked to imagine only one positive aspect of the desired future and one obstacle standing in the way of realizing the desired future; Oettingen et al., 2000, Study 1).

Recent experimental studies (Oettingen & Pak, 2003) show that mental contrasting affects not only the emergence of goal commitments but also the processes of subsequent goal striving. Effective goal striving implies constructive responses to negative feedback (Dweck, 1999; Dweck & Leggett, 1988; Gollwitzer, 1996). We therefore argued that mental contrasting in light of high expectations should foster effective responses to negative feedback. Because negative feedback provides relevant clues on how to achieve the desired future (Gollwitzer, 1996), an effective response would be to appraise such feedback as useful information for goal striving rather than as a sign of low ability (Dweck & Leggett, 1988). Taking feedback as valuable information should, in addition, guarantee that negative news leaves one's self-view of competence intact. Indeed, we observed that mental contrasting in light of high expectations of success led to the effective processing of negative feedback, as well as to successful maintenance of a positive self-view of competence (Oettingen & Pak, 2003).

So far we have shown that fantasies about a positive future contrasted with reflections on negative reality translate into goal commitment to realize the positive future. In the study reported next, we explored whether fantasies about a negative future contrasted with a positive reality are translated into goal commitment to master the negative future.

Mastering Fantasies About Negative Futures

There are many instances in which people entertain fantasies about a future they are unjustly afraid of. One example is perceived threat of out-groups. Gaines and Reed (1995) and Corenblum and Stephan (2001) showed that prejudice led to unfounded fears of future interactions with members of different religions or ethnicities. Another domain of unjustified fear is HIV infection (Glantz, Mariner, & Annas, 1992), wherein HIV-infected medical practitioners may be barred from practicing due to policy decisions based on fear rather than actual risk.

Unjustified fears have predominantly been investigated in the context of anxiety disorders such as panic disorder, posttraumatic stress disorder, phobias, and generalized anxiety disorders, for all of which the development of effective treatments has been attempted. Though these treatments may stem from different schools of psychotherapy, they are largely based on the principle of exposure (see Foa & Kozak, 1986, for a review).

The research described here uses the principle of exposure in combination with mental contrasting. We hypothesized that exposure to the feared stimulus in one's fantasies may trigger goal commitment to approach the feared stimulus. Specifically, people should approach the feared stimulus if the negative fantasies are contrasted with reflections on positive reality that may impede the occurrence of the feared future and if expectations of mastering the negative future are high. Mere fantasies about being exposed to the negative future (indulging) and mere reflections on impeding positive reality (dwelling), on the other hand, should lead to expectancy-independent goal commitment to approach the negative future. In other words, mental contrasting should strengthen goal commitment to approach the negatively perceived future in light of high expectations of success but should lead to giving in to fears in light of low expectations. Indulging in fantasies about a negative future or dwelling on positive impeding reality, in contrast, should make people act toward the negative future independently of expectations.

Mastering Xenophobic Fantasies

We told adolescents in an ethnically homogeneous district of East Berlin, called Weissensee, that foreigners seeking asylum might move into their neighborhood (Oettingen, Mayer, Thorpe, Janetzke, & Lorenz, in press). We then assessed participants' expectations of helping to integrate the foreigners in their district. To induce negative fantasies, all participants were told to imagine the negative personal consequences that the arrival of immigrants in Weissensee might have. They were asked to generate respective fantasies and to write them down. To induce images about the impeding positive reality, participants were confronted with 12 statements, fabricated by us, supposedly stemming from interviews with adolescents who previously had experienced foreigners moving into their neighborhood. These statements depicted positive interactions between the interviewees and the foreigners. One of the statements was: "Playing soccer with these guys was just great. Finally, we had strong and fair opponents (Lars G., 16 years)."

We then established the three experimental groups (mental contrast of negative fantasy with positive reality, indulging in negative fantasy, dwelling on positive reality). In the mental-contrast group, participants were simply asked to write down what thoughts and images came to their mind when they read these statements. This way, the positive reality was forced on participants' thoughts.

To establish the indulging and dwelling groups, we used a reinterpretation paradigm (Oettingen, 2000). Specifically, we varied the point of view from which participants had to work through the statements. In the indulging group, we ensured that participants would trivialize the adolescents' statements. We suggested to participants that the interviewed adolescents were not

to be taken seriously. In the dwelling group, we asked participants to generate thoughts that supported the notion that they would get along well with the foreigners in Weissensee. Thus participants' thoughts were tightly linked to the positive reality.

Two weeks after the experiment, we measured various indicators of goal commitment to help integrate the immigrants. To measure affective goal commitment, we asked participants for their felt tolerance. Specifically, we asked how harmful it would be for them if the immigrants moved into their neighborhood. To measure behavioral goal commitment, we asked participants how much effort and time they would be willing to invest in helping to edit a journal about and in collaboration with foreign youths. Finally, to measure cognitive goal commitment, we assessed the number of plans that participants formed in writing about what it would be like to live with the foreign adolescents in their district.

As in the previous experiments on realizing fantasies about a positive future, this experiment on mastering fantasies about a negative future showed strong expectancy dependence in the mental-contrast group but not in the indulging and dwelling groups. When expectations of success were high, students in the mental-contrast group were more tolerant, were more willing to exert effort toward helping to integrate the foreigners, and formed more plans to achieve this goal than mental-contrast-group participants with low expectations, and more so than participants with high and low expectancies in the indulging and dwelling groups.

There has been much research aimed at ameliorating unjustified fears in clinical settings (see Brown, Antony, & Barlow, 1995, for a summary). The present study reaches out into daily life, specifying self-regulatory strategies people can use to rid themselves of their unjustified fears. Specifically, when participants mentally contrasted negative consequences of a given future event with present reality that stands in the way of these negative consequences occurring, they held out against their fearful fantasies and boldly approached the negatively valenced consequences of the future event. However, this was true only if contrasting participants expected to master their fears. If they were plagued by low expectations of mastery, they gave in to their fears.

In contrast to participants in the mental-contrast group, participants in the indulging and dwelling groups did not utilize their expectations in confronting the negative future. Even when their expectations were high, they showed little tolerance and little willingness to help, and they formed only a few plans to integrate the foreigners. These considerations imply that mental contrasting, but not indulging and dwelling, makes people master their fears by taking an active stance that allows them to act in a tolerant and altruistic way toward members of a feared out-group.

The key feature of fear and anxiety disorders is avoidance of situations that evoke the arousal of fear and anxiety. LeDoux and Gorman (2001) suggest that

"the trick is to turn avoidance into a successful coping strategy" (p. 1955). In addition, they argue that strategies that enable people to become active whenever threatening thoughts emerge will attenuate the involuntary passive responses to these fear-arousing thoughts. Contrasting negative fantasies with reflections on positive impeding reality might be such a strategy because it helps people to actively cope with the fear-arousing images.

Summary

Conjoint elaboration of the future and impeding reality puts expectancy judgments to work. As expectancy judgments are a summary statement of one's past experiences and performances, the described experimental studies imply that it is the link between future and present that allows the past to come to the fore. When the link between future and present has been formed, the past guides goal commitment in terms of its cognitive, affective, and behavioral indicators. A host of experimental studies from various life domains and using different paradigms support this contention. They show that participants with high expectancies who mentally contrast a positive future with its impeding reality feel energized, initiate action immediately, plan how to go about the realization of the positive future, and exert strong effort. Importantly, they are also successful in attaining the positive future. Mental contrasting in light of low expectancy judgments led participants to refrain from the goal to realize their fantasies. Finally, participants who consider only part of the problem—that is, only the future or only the present—commit themselves to a moderate degree independently of their expectancy judgments.

Mental contrasting may also be used to dispel fantasies about a feared future. In a study with adolescents nourishing xenophobic fantasies, high-expectancy participants in the mental-contrast group showed more tolerance and generosity than low-expectancy participants and indulging and dwelling participants. Apparently, it does not matter whether fantasies pertain to positive or negative futures; the same effects on goal commitment of mental contrasting versus indulging and dwelling are observed. Seen from the problem-solving perspective described previously (Newell & Simon, 1972), indulging and dwelling imply that the internal subjective representation (i.e., the person's problem space) differs from the objective problem. Only if the problem space considers both future and reality and thus corresponds to the objective problem do relevant expectations influence goal commitments.

So far we have demonstrated that mental contrasting is a beneficial strategy when it comes to helping people orient themselves along their performance history. A question we have not raised yet is, What factors determine the emergence of mental contrasting and what is the role of time herein? To speculate on

this question, we want to consider how mental contrasting versus indulging may prevail in cultures adhering to different time perspectives.

Mental Contrasting Across Cultures

Cultures differ in the time perspective their members adhere to. Such differences in time perspective may be observed in cultural products such as myths, stories, or songs. In Japanese haiku poems, for example, the time perspective is short, as goals are set in the here and now (Boesch, 1997). This observation is nicely corroborated in a study by H. Azuma and M. Mashima (personal communication, 1996), who asked students in Japan and the United States what they had been thinking about in the past week. Whereas students in Japan reported to have contemplated the next steps in their daily pursuits (e.g., how I will cook tonight for my girlfriend), American students described thoughts about long-term projects (e.g., my future as a medical doctor). We speculate that cultures with a long-term time perspective should foster mental contrasting and indulging, because a long-term time perspective provides plenty of contents for fantasies about the future.

Which factors in cultures with a long-term time perspective, however, will determine whether people tend to mentally contrast or to indulge? Norm orientation should play the decisive role (tight, simple, and collectivist cultures versus loose, complex, and individualist cultures; Triandis, 1994), because norms provide the necessary assurance for action and lay down the boundaries for action. In addition, they convey commitments which determine the direction for acting.

If norms are the basis for action in more traditional cultures, what factors provide the basis for action in more modern, less norm-oriented societies? Here no norms or rituals provide assurance and boundaries, as well as the direction for acting (by laying down who relates to whom, when, where, and how). We suggest that in modern societies in which norms increasingly vanish, expectations are taking over their function. First, by reflecting an individual's personal history, expectations provide the necessary assurance to act and show the boundaries of acting. Second, in their function of turning free fantasies into binding goals, expectations determine the direction to act.

Assuming that expectations take over the action-guiding function of norms in modern societies, we should there find mental contrasting to be the prevalent form of self-regulatory thought. To the contrary, in traditional societies in which norms guide action, there is no need for mental contrasting. Thus indulging in the positive future and dwelling on negative reality should flourish. They turn people away from bleak prospects and thus will make them "stay in

the field." Indulging in positive fantasies will, in addition, stabilize the normative cultural environment, because it provides hope for a better future even in light of low economic prospects and restricted living conditions.

Finally, in cultures with a short-term time perspective, none of the three self-regulatory modes of thought should be prevalent. Rather, mental simulation of how to implement short-term goals assigned by normative regulations (strong norm orientation) or by the immediate demands of the situation (weak norm orientation) should be the prevalent way of self-regulatory thought.

Summary

Cultures with a long-term time perspective should foster the emergence of mental contrasting and of indulging, because a long-term time perspective provides the content for plentiful fantasies about the future. Whether a culture is characterized by mental contrasting or indulging should depend on the degree of its norm orientation. In a culture with weak norm orientation, mental contrasting should be prevalent, because expectations guide action, thus making mental contrasting useful. In a culture of strong norm orientation, indulging should be prevalent, because expectations are not needed for action and indulging may provide hope for a less restricted future.

The latter considerations imply that the benefits of mental contrasting versus indulging are context dependent. In modern societies, in which norms increasingly fail to determine action and expectations take over the action-guiding function of norms (i.e., the person is the agent of his or her own development), mental contrasting should be a beneficial strategy. Under normative constraints, to the contrary, indulging in positive fantasies may well prove to be the more beneficial and comforting self-regulatory mode of thought.

Conclusions

Mental contrasting strengthens the link between past performance and future behavior, whereas indulging and dwelling disconnects a person's thoughts, feelings, and actions from his or her own experiences and performances. Just as mental contrasting and indulging differ in their benefits across sociocultural contexts, they might differ in their benefits across tasks. When solving the task at hand affords the consideration of past experiences, mental contrasting may be chosen, whereas indulging and dwelling would qualify for tasks that are better solved without looking back. Finally, indulging and dwelling rather than mental contrasting may be the right strategy if expectations cannot be determined or when they are grossly distorted. Wise individuals, then, may be those who flexi-

bly adjust the use of their self-regulatory strategies to the context they find themselves to be in, to the task at hand, and to the information that is available.

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