HANDBOOK OF COMPETENCE AND MOTIVATION

Edited by
ANDREW J. ELLIOT
CAROL S. DWECK
Handbook of Competence and Motivation

Edited by
Andrew J. Elliot
Carol S. Dweck

Foreword by Martin V. Covington

THE GUILFORD PRESS
New York  London
Contents

PART I. INTRODUCTION

COMPETENCE AND MOTIVATION

1. Competence and Motivation: Competence as the Core of Achievement Motivation
   Andrew J. Elliot and Carol S. Dweck
   3

PART II. CENTRAL CONSTRUCTS

INTELLIGENCE AND ABILITY

2. Intelligence, Competence, and Expertise
   Robert J. Sternberg
   15

MOTIVES

3. An Implicit Motive Perspective on Competence
   Oliver C. Schultheiss and Joachim C. Brunstein
   31

GOALS

4. A Conceptual History of the Achievement Goal Construct
   Andrew J. Elliot
   52

ATTRIBUTIONS

5. Motivation from an Attributional Perspective and the Social Psychology
   of Perceived Competence
   Bernard Weiner
   73

COMPETENCE PERCEPTIONS

6. Competence Perceptions and Academic Functioning
   Dale H. Schunk and Frank Pajares
   85

VALUES

7. Subjective Task Value and the Eccles et al. Model of Achievement-Related Choices
   Jacquelynne S. Eccles
   105
PART III. DEVELOPMENTAL ISSUES

TEMPERAMENT
10. Temperament and the Development of Competence and Motivation
    Mary K. Rothbart and Julie Hwang

AFFECTIVE DEVELOPMENT IN EARLY CHILDHOOD
11. The Development of Self-Conscious Emotions
    Michael Lewis and Margaret Wolan Sullivan

COGNITIVE DEVELOPMENT IN EARLY CHILDHOOD
12. Competence Assessment, Competence, and Motivation between Early
    and Middle Childhood
    Ruth Butler

ADOLESCENCE
13. Competence, Motivation, and Identity Development during Adolescence
    Allan Wigfield and A. Laurel Wagner

AGING
14. Competence and Motivation in Adulthood and Old Age: Making the Most
    of Changing Capacities and Resources
    Jutta Heckhausen

PART IV. CONTEXTUAL INFLUENCES

PARENTS
15. The Role of Parents in How Children Approach Achievement: A Dynamic
    Process Perspective
    Eva M. Pomerantz, Wendy S. Grolnick, and Carrie E. Price

PEERS
16. Peer Relationships, Motivation, and Academic Performance at School
    Kathryn R. Wentzel
TEACHERS AND SCHOOLS

17. Competence Motivation in the Classroom
   Tim Urdan and Julianne C. Turner
   297

COACHES AND SPORTS

18. Motivation in Sport: The Relevance of Competence and Achievement Goals
   Joan L. Duda
   318

THE WORKPLACE

19. Work Competence: A Person-Oriented Perspective
   Ruth Kanfer and Phillip L. Ackerman
   336

GOVERNMENT AND POLICY

20. Legislating Competence: High-Stakes Testing Policies and Their Relations with
    Psychological Theories and Research
    Richard M. Ryan and Kirk W. Brown
    354

PART V. DEMOGRAPHICS AND CULTURE

GENDER

21. Gender, Competence, and Motivation
    Janet Shibley Hyde and Amanda M. Durik
    375

RACE AND ETHNICITY

22. Race and Ethnicity in the Study of Motivation and Competence
    Sandra Graham and Cynthia Hudley
    392

SOCIOECONOMIC STATUS

23. Children’s Competence and Socioeconomic Status in the Family and Neighborhood
    Jeanne Brooks-Gunn, Miriam R. Linver, and Rebecca C. Fauth
    414

STEREOTYPES AND PERFORMANCE

24. Stereotypes and the Fragility of Academic Competence, Motivation, and Self-Concept
    Joshua Aronson and Claude M. Steele
    436

CULTURE: CONSTRUALS AND FRAMEWORKS

25. The “Inside” Story: A Cultural–Historical Analysis of Being Smart and Motivated, American Style
    Victoria C. Plaut and Hazel Rose Markus
    457

CULTURE: DYNAMIC PROCESSES

    Chi-yue Chiu and Ying-yi Hong
    489
PART VI. SELF-REGULATORY PROCESSES

SELF-REGULATED LEARNING

27. The Hidden Dimension of Personal Competence: Self-Regulated Learning and Practice
   Barry J. Zimmerman and Anastasia Kitsantas

COPING AND DISENGAGEMENT

28. Engagement, Disengagement, Coping, and Catastrophe
   Charles S. Carver and Michael E. Scheier

DEFENSIVE STRATEGIES

   Frederick Rhodewalt and Kathleen D. Vohs

SOCIAL COMPARISON

30. Social Comparison and Self-Evaluations of Competence
   Ladd Wheeler and Jerry Suls

INTRINSIC MOTIVATION

31. The Concept of Competence: A Starting Place for Understanding Intrinsic Motivation and Self-Determined Extrinsic Motivation
   Edward L. Deci and Arlen C. Moller

FLOW

32. Flow
   Mihaly Csikszentmihalyi, Sami Abuhamdeh, and Jeanne Nakamura

CREATIVITY

33. Motivation, Competence, and Creativity
   Mark A. Runco

AUTOMATICITY PROCESSES

34. Automaticity in Goal Pursuit
   Peter M. Gollwitzer and John A. Bargh

IMAGINATION

35. Fantasies and the Self-Regulation of Competence
   Gabriele Oettingen and Meike Hagenah

Author Index

Subject Index
CHAPTER 35

Fantasies and the Self-Regulation of Competence

GABRIELE OETTINGEN
MEIKE HAGENAH

Competence may be studied not only in terms of whether people behave in competent ways when solving certain problems (e.g., academic, professional, and social), but also in terms of how they think and feel about their competencies. Such subjective or perceived competence has predominantly been conceptualized as beliefs or expectations. Examples are efficacy expectations (Bandura, 1977, 1997), competence expectations (Elliot & Church, 1997), agency beliefs (Little, Oettingen, Stetsenko, & Baltes, 1995; Oettingen, Little, Lindenberger, & Baltes, 1994; Skinner, Chapman, & Baltes, 1988), control beliefs (Skinner, Wellborn, & Connell, 1990), perceived control (Skinner, 1996), and control appraisals (Jensen & Karoly, 1991). Construing perceived competence as beliefs or expectations, however, ignores that people conceive of their competencies also in other forms of thought. In this chapter, we focus on such other forms of thought in the form of fantasies and daydreams about the future, in which people mentally depict themselves solving given problems in a competent way. We investigate people’s daydreams and fantasies about how wonderful it will be to have realized their competencies, and how gloriously they will behave on the way to attaining such positive outcomes.

Fantasies about future competencies should have different motivational consequences than competence beliefs and expectations. In the first part of the chapter, we analyze perceived competence in terms of expectations of the future on the one hand, and in terms of daydreams and fantasies about the future on the other. We show that the motivational impact of competence expectations dramatically differs from that of competence fantasies. Specifically, competence expectations facilitate motivation and successful performance, whereas competence fantasies turn out to be an impediment. However, competence fantasies do not always hurt motivation. When they are mentally contrasted with the reality that stands in the way of at-
taining them, they merge with competence expectations to result in binding competence goals with subsequent goal striving and goal attainment. Experimental studies support these ideas in various life domains (academic, professional, and interpersonal). They also attest to the benefits of the mental contrasting procedure under critical conditions, such as when people are confronted with strong negative feedback or need to perform in front of a highly evaluative audience.

SUBJECTIVE COMPETENCE: EXPECTATIONS VERSUS FANTASIES

Competence Expectations

Subjective competence has been conceptualized as competence beliefs or competence expectations. These are judgments about one's present or future competencies that are based on past behavior. Expectations are thus informed by one's experiences and thereby represent a person's performance history (Bandura, 1977, 1997; Mischel, 1973; Mischel, Cantor, & Feldman, 1996; Olson, Roese, & Zanna, 1996). Observed performances of others, persuasive messages received by respected others, and experienced levels of arousal during performance are also known to influence expectations (Bandura, 1977, 1997; Bandura & Locke, 2003).

The content of competence beliefs and expectations depends on the content of the objective competence on which the person is focusing. Objective competence in turn may be described by successful learning (Schunk, 1989), by achieving high grades and test scores, or simply by demonstrating a strong performance on a given task (Elliot & McGregor, 2001; Pajares & Miller, 1994; Shell, Colvin, & Bruning, 1995). Finally, both subjective and objective competence may be conceived in terms of how they are anchored (i.e., defined in absolute, interpersonal, or normative standards; Butler, 1998; Elliot & McGregor, 2001; Rheinberg, 1998; Ruble & Frey, 1991), their regulatory focus (i.e., promotion vs. prevention; Higgins, 1997), their valence and means by which they are approached (i.e., framed as success vs. failure and as approach vs. avoid-

ance; Atkinson, 1957; Elliot & McGregor, 2001; Elliot & Thrash, 2002; McClelland, 1980; Murray, 1938), and in terms of the strategies used to achieve them (eager vs. vigilant strategies; Higgins, Idson, Freitas, Spiegel, & Molden, 2003).

Because high-competence beliefs are based on successful performance in the past, on observational learning, and on persuasion by informed sources, they can be taken as a valid signal that behavioral investment will pay off in the future. Thus, it comes as no surprise that investigations of the predictive value of high-subjective competence in the form of beliefs or expectations have yielded a large number of findings consistently pointing in the same direction: High-subjective competence predicts strong behavioral investment and, thus, the accumulation of objective competence. These findings hold true (Lent, Brown, & Hackett, 1994; see meta-analysis by Multon, Brown, & Lent, 1991) whether competence expectations are operationalized as self-efficacy beliefs (beliefs on whether one can implement a specific behavior necessary for a specified desired outcome; Bandura, 1997; Pietsch, Walker, & Chapman, 2003; Schunk, 1989) or as more global agency or control beliefs (beliefs on whether one generally behaves in a way that leads to desired outcomes; Little et al., 1995; Oettingen et al., 1994; Skinner et al., 1988). Strongest relations between subjective and objective competence have been observed when both variables match in level of specificity (Lent, Brown, & Gore, 1997).

Findings that attest to the predictive power of competence expectations not just amass for academic and professional achievement. Positive competence expectations predict objective competence also in the athletic and in the health domains (McAuley, 1985, 1993). High-competence expectations facilitate the initiation and maintenance of health-promoting and disease-preventing behaviors (McAuley, 1993; Wilcox & Storandt, 1996), warding off health damaging and risky activities (O'Leary, 2001), and recovery after surgery (Scheier et al., 2003). In addition, by increasing objective competence, competence expectations have benefited further variables such as mental health (Bandura, Pastorelli,
Barbaranelli, & Carprara, 1999) and well-being (Christensen, Stephens, & Townsend, 1998; Lachman & Weaver, 1998).

Competence Fantasies

Subjective competence, however, does not need to be conceptualized in the form of beliefs or expectations. As noted earlier, competence might occupy our thoughts also in the form of mental images or fantasies. Beliefs and images were first distinguished by William James (1890/1950, Vol. I): “Everyone knows the difference between imagining a thing and believing in its existence, between supposing a proposition and acquiescing in its truth” (p. 283). James's differentiation between believing and imagining pertains to events of the past and present. Following his reasoning, we differentiate two kinds of thinking about the future: expectancy judgments (beliefs) that assess the probability of occurrence of future events (behaviors and outcomes), and fantasies (images) that depict such future events per se. Consequently, positive competence expectations are beliefs that a desired competence is likely to be reached; positive competence fantasies about the future, to the contrary, are positively experienced images of future competencies that emerge in the stream of thought.

In such fantasies about the future, people can embellish events and scenarios regarding their own competencies regardless of their past behavior and performance, and regardless of how likely it is that they will ever attain these competencies. People might see themselves as Harry Potter on the broom, as elegant figure skaters spinning pirouettes and getting ready for high jumps, as speaking Chinese fluently, or as being celebrated for having authored a brilliant play. People usually know very well that these fantasies are disconnected from what they believe will come true, and that the chances of successfully obtaining these futures are minute.

Glorious competence fantasies, however, might not necessarily come in the form of such Zauberdenken (i.e., thoughts depicting actions and events that violate natural laws or social norms; Lewin, 1926; Mahler, 1933). People also fantasize about not yet realized but principally possible competen-

cies. For example, they may fantasize of their competence to combine work and family life, to attain a longed for job, to regularly practice health behavior, or to shake off the squeeze of time. 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). However, even if daydreams or fantasies about one's future competencies obey natural and social laws, they still can be disconnected from expectations or probabilities of successfully reaching these competencies, due to the fact that daydreams and fantasies are not constrained by the cognitive mechanisms that make people appraise factual information (Klinger, 1971, 1990; Singer, 1966). In short, people can experience future blessings in their fantasies, without considering the probabilities that these blessings will actually occur.

THE MOTIVATIONAL FUNCTION OF SUBJECTIVE COMPETENCE: EXPECTATIONS VERSUS FANTASIES

Competence expectations, by applying past facts to predict future events (Bandura, 1977; Mischel, 1973), promise that future investment is worthwhile. To the contrary, competence fantasies fail to be a valid signpost for action. Rather, they tempt the person to mentally enjoy desired competencies in the present moment, concealing the necessity to still realize them in actuality. Therefore, fantasizing about one's future competencies should trigger little motivation to actually attain the mentally enjoyed abilities. Moreover, fantasies about a trouble-free path to accumulate competencies should hinder the preparation for upcoming obstacles and the hammering out of effective plans specifying how to overcome such obstacles. Lacking preparatory action and careful planning should further compromise motivation and attaining objective competence.

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

The following two studies test this idea of a differential relation between competence expectations and competence fantasies, and actually achieved competence. In each study, we assessed competence expectations and competence fantasies at least 1 week before we measured effort and success in building objective competence. We operationalized competence expectations by the perceived probability of building competence, and we measured competence fantasies by using idiographic techniques tapping participants’ thoughts and images about their achieving respective competencies in the future.

Building Academic Competence

Right before their midterm examination, 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 their 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. Objectively achieved competence was measured by the change of course grades from the midterm (when expectations and fantasies were assessed) to the final exam.

Previous research has amply documented that high competence expectations build academic competence. This is true for students of different ages and educational backgrounds, and with respect to a variety of indicators (e.g., standardized tests, course grades, solving intellectual tasks, application of learning strategies; Lent et al., 1997; Schunk, 1982, 1989; Zimmerman & Martinez-Pons, 1992; see summaries by Bandura, 1997; Multon et al., 1991). The predictive power of positive fantasies for achieving academic competence, however, has not been analyzed. Following the ideas presented earlier, we hypothesized and observed that students entertaining positive competence expectations put in much study effort and achieved comparatively well, while students entertaining positive competence fantasies failed to study hard and achieved comparatively low course grades from the 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 exam. Thus, positive fantasies led to less studying than more negatively toned fantasies, and this in turn produced lower levels of objective competence, as measured by course grades.

This study investigated the role of expectations versus fantasies in building intellectual competence. In the next study, we addressed the role of the two ways of thinking about the future in building physical competence (Oettingen & Mayer, 2002, Study 4). The building of physical competence becomes a particularly pressing concern when frailty sets in, that is, in older adulthood.

Building Physical Competence

Participants in our study were older adults admitted to a hospital to undergo total-hip-replacement surgery, which is a commonly performed surgery in patients with osteoarthritis of the hip, the most frequent joint disorder and a particular problem in the elderly (Gogia, Christensen, & Schmidt, 1994). In surgery, affected bone and cartilage are removed and replaced with an artificial joint made from metal and plastic. Func-
tional disability and pain in the absence of primary and secondary preventive measures are the two predominant indications for total-hip-replacement surgery (Verbrugge, 1990).

The day before surgery, we assessed participants’ expectations and fantasies regarding their future physical competence. Two exemplary items measured expectations: "How likely do you think it is, that 2 weeks after surgery you will be able to go for a brief walk using an assistive cane?” and “How functionally able do you think you will be 3 months after surgery?” To assess competence fantasies, we asked participants to imagine in writing five scenarios to their completion, and then to rate their own thoughts and images. The scenarios pertained to various points in time after surgery (i.e., immediately after, end of hospital stay, and 3 months later). For example, one of the scenarios read: “At the end of your hospital stay, you want to buy a newspaper in the hospital’s newspaper stand. As you are getting out of bed...” 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. As a response to the scenario just described, one participant fantasized: “I am walking on the stairways without help, and I walk easily and quickly to the newspaper stand.” However, another participant imagined herself as less competent: “I am trying to walk to the door first, using my cane. But how shall I open the door? Uh, and then walking to the elevator? How will I ever get there?”

Two weeks after surgery, while participants were still in the hospital, each physical therapist mainly responsible for a particular patient indicated the functional status of that patient’s hip (Gogia et al., 1994). Physical therapists used classic indicators, such as degree of hip joint motion (i.e., abduction, 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).

Competence expectations and competence fantasies differentially predicted actually achieved competence also in the physical domain. While competence expectations were precursors of objective competence, competence fantasies were a hindrance, and this was true whether patients’ physical competence was measured via specific criteria (i.e., hip joint motion or walking on stairs) or via more general measures (i.e., general recovery). These findings stayed unchanged after controlling for presurgery hip condition (as assessed by the doctors), weight (70% of the sample was overweight), and gender.

Subsequent content analyses of the patients’ fantasies revealed that participants had idealized their future physical competence with respect to both outcome (they imagined possessing or having achieved competence) and process (they imagined an easy and effortless way to achieve competence). Though idealization of outcome was more frequent than idealization of process, both were positively related to the subjective measure of the positivity of competence fantasies. Thus, positively experienced fantasies contain both outcome and process in its idealized form, that is, the possession of high competence, as well as effortless and unencumbered progress toward attaining competence. Most importantly, however, it was the subjectively experienced competence fantasies rather than the expressed idealization, as picked up by the raters, that predicted low objective competence (i.e., functional status of the hip and successful recovery). This finding implies that the personal affective involvement in the created fantasies produces their motivational and performance consequences.

**Process Simulations and Illusory Optimism**

The previous studies support the notion that positive fantasies about future competencies, whether pertaining to the achieved outcome or to the process leading there, are a motivational burden, because they reduce effort to build competence and conceal the steps that are needed to develop it. Thus, this research differs from research on outcome versus process simulations (Taylor, Pham, Rivkin, & Armor, 1998). Taylor and colleagues found that process simulations (rehearsing the cumbersome steps needed to reach a set
goal; e.g., getting an A) lead to more effort and superior performance than outcome simulations (rehearsing the enjoyment of reaching the goal) via reduced anxiety and heightened planning. This approach, to the contrary, focuses on the experienced affective tone of fantasies about the future and postulates that positive competence fantasies (both outcome and process) are a motivational hindrance.

Furthermore, positive competence fantasies need to be distinguished from illusory optimism (Schneider, 2001; Taylor & Brown, 1988; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Because competence fantasies do not pertain to facts or likelihoods of occurrence, they cannot be taken as an indicator of illusory optimism. Only competence expectations can be illusory-optimistic, because they assess the future events’ reality. This assessment of reality, then, can be more or less realistic (accurate) or illusory (inaccurate).

Summary

Subjective competence, depending on how it is conceptualized, predicts objective competence in differential ways. Assessed by expectancy judgments, subjective competence positively predicts improvement of objective competence, whereas, measured by affective tone of fantasies, it negatively predicts the development of objective competence. Effort and persistence mediate the negative relation between positive competence fantasies and the building of objective competence.

We replicated this pattern of results in further areas of the health domain (e.g., chronic illness, Oettingen & Mayer, 2003, Study 4; weight loss, Oettingen & Wadden, 1991), as well as in different life domains such as the interpersonal domain (e.g., starting a romantic relationship, Oettingen & Mayer, 2002, Study 2) and the professional domain (e.g., obtaining a desired job, Oettingen & Mayer, 2002, Study 1). In all of these studies, expectations and fantasies were measured long before we assessed the final measure of actual competence (up to 4 years).

Given the results of these studies, positive fantasies about future competencies appear to be problematic when it comes to the motivational question of realizing these fantasies in actuality. However, positive competence fantasies have a beneficial function, when it comes to the setting of goals. Specifically, they produce binding goals that are based on high competence expectations. For this purpose, competence fantasies about the future need to be contrasted with reflections on impediments of present reality.

MERGING EXPECTATIONS AND FANTASIES INTO COMPETENCE GOALS: MENTAL CONTRASTING

In his theory on proactive goal setting, Bandura (1991) argues that people who have successfully attained a goal will set themselves an even more aspiring goal due to their strengthened efficacy expectations. Social cognitive theory thus postulates two self-regulatory systems in attaining competence: A proactive discrepancy production system and a discrepancy reduction system (Bandura & Locke, 2003). Arguing that humans are motivated by foresight relative to where they want to be, rather than only by hindsight relative to what they did wrong, Bandura and Locke posed the following question:

Discrepancy reduction is only half of the story and not necessarily the more interesting half. The greater challenge is to explain why people inflict on themselves high standards that demand hard work and beget a lot of stress, disappointments, and failures along the way rather than to explain why they should seek tranquility by matching a standard. (p. 91)

Bandura and Locke maintain that people whose efficacy expectations have been strengthened by previous goal attainment will set themselves more aspiring goals. However, not every heightened efficacy expectation will be turned into a challenging goal. Thus, the question remains as to how people whose efficacy has been strengthened manage to set themselves binding goals. We provide an answer to this question by referring to the model of fantasy realization (Oettingen, 2000; Oettingen, Pak, & Schnetter, 2001), which specifies how fantasies about the future can be used to turn high expectations into aspiring goals that in turn lead to persistent goal striving and effective goal attainment.
The Model of Fantasy Realization

The model of fantasy realization specifies three routes to goal setting that result from how people deal with their fantasies about a desired future (Oettingen, 1999, 2000; Oettingen et al., 2001). The first route to goal setting originates from solely fantasizing about a desired future. The second entails merely reflecting on the negative reality standing in the way of attaining these fantasies. The third route, finally, entails contrasting one's fantasies about the desired future with reflections on the negative impeding status quo.

Three Routes to Goal Setting: Proposed Mechanisms

The first route to goal setting is based on indulging in thoughts, fantasies, daydreams, and images about a desired future (e.g., becoming a lawyer, excelling in math, learning a language). Such fantasizing seduces a person into mentally enjoying the positive future in the here and now, because no reflections on reality point to the impediments of attaining the desired future. Therefore, goal commitment to realize the desired future (i.e., determination and effort to reach the goal, and persistence in pursuing it over time; Locke & Latham, 1990) should solely result from the implicit pull triggered by the positivity of the imagined future events.

The second route to goal setting is based on dwelling on negative aspects of present reality that stand in the way of realizing the desired future (e.g., having not yet graduated, being distracted, and feeling lazy, respectively). Such reflections remain recurring ruminations, because no fantasies about the future designate the direction in which to act. Therefore, goal commitment to realize the desired future should solely reflect the implicit push triggered by the negativity of the reality events about which the person is thinking.

The third route to goal setting entails mentally contrasting the desired future with negative aspects of impeding reality, such as contrasting thoughts of excelling in math with thoughts about being distracted from working on math improvement. Such mental contrast between a positive future and negative reality instigates a more complex goal-setting mechanism. Conjoint mental elaboration of the desired future and the present reality creates heightened simultaneous accessibility of cognition about both the desired future and the negative reality. In addition, the negative reality is viewed as an obstacle, or as "standing in the way" of realizing the desired future, thereby emphasizing a necessity to attain the desired future. This necessity to attain the future activates expectations, which then will be applied in goal setting. Thus, individuals engaging in mental contrasting should display flexible and strategic behavior, in that they refrain from setting themselves binding goals when expectations of success are low, but fully commit themselves to the attainment of the desired future when expectations of success are high.

Because a necessity to attain the desired future only emerges after mental contrasting, but not after indulging or dwelling, indulging and dwelling should not activate relevant expectations. Thus, indulging and dwelling will make people fail to draw on expectations when setting themselves goals. The implicit pull and push should lead to moderate goal commitment that is independent of perceived chances of success.

A series of experiments studying goal setting via the different modes of thought support these hypotheses. In the following sections we present two exemplary studies that pertain to attaining high competence in the academic and health domains. Specifically, the two studies investigate the role of indulging, dwelling, and mental contrasting in setting goals to attain competence in mathematics and in reducing cigarette consumption.

Setting Competence Goals in the Academic Domain

The fantasy theme of the study was excelling in mathematics (Oettingen et al., 2001; Study 4). Participants were male adolescents, freshmen enrolled in two vocational schools for computer programming. The curriculum entailed full-day training to become media or computer specialists, and mathematics was the critical subject in the first year of studies. Thus, accumulating competence in math was a most important desire in the lives of these adolescents concerned about their professional education.
VI. SELF-REGULATORY PROCESSES

We first measured participants' expectations to improve their competence in mathematics, and then asked them to name four positive aspects of improving in math and four negative aspects that impeded their improvement in math. We then 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 their competence in math, and two negative aspects of impeding reality in alternating order, beginning with a positive aspect of the future. In the fantasy-only group, participants only had to mentally elaborate four aspects of improving in math, and in the reality-only group, participants only had to mentally elaborate four aspects of impeding reality.

Directly following these mental exercises, all participants reported how energized they felt (e.g., energetic, active, eventful). Moreover, 2 weeks after the experiment, we asked teachers to evaluate each student's effort for the past fortnight (e.g., how much persistent effort the student showed in studying math, and how intrinsically interested he or she was). In addition, to measure actual achieved competence, we asked teachers to give a course grade to each student.

In mental contrast participants, we noted that feelings of energization, exerted effort, and achieved grades were more in line with competence expectations than in the indulging and dwelling participants. High-expectancy participants in the mental contrast group felt most energized, exerted most effort, and were given the highest course grades by their teachers. Low-expectancy participants, however, felt least energized, exerted least effort, and achieved the lowest course grades. To the contrary, indulging and dwelling participants felt moderately energized, independent of their expectations. Similarly, teachers rated them as showing moderate effort and gave them mediocre course grades, whether the students believed in their own competence or not.

For the participating adolescents who are beginning their vocational training and still have career options available, mental contrasting seems beneficial. Those who have high chances to excel invest their time and effort in a promising career, while those with minor chances to excel do not invest in vain and thus can move on and use their energies otherwise (Carver & Scheier, 1998). The pattern of goal commitment for indulging and dwelling participants seems less beneficial. Being implicitly pulled by the future or pushed by the reality, respectively, those with high expectations do not invest enough and thus suffer from failing to realize their potential. Those with low expectations, on the other hand, invest too much and thus waste their energies in a lost case; that is, both indulging and dwelling put people at risk in terms of being out of touch with their potential.

Setting Competence Goals in the Health Domain

The previous study described how expectations and fantasies can be merged to set goals geared at building academic competence. We now turn to an experiment that describes how mental contrasting can be used to set goals geared toward improving competence in the health domain (Oettingen, Mayer, & Thorpe, 2005a). Students who smoked were asked for their expectations relative to reducing their cigarette consumption or to stop smoking. Thereafter, all participants were asked to name four positive aspects of a future in which they had reduced their cigarette consumption and four aspects of impeding reality. As desirable aspects of the future, participants named, for example, physical fitness, self-respect, and pretty skin. As impeding aspects of present reality, they named stress, partying, and peer pressure. We then established the three experimental groups in the same way as in the experiment on developing math competence. Specifically, in the mental contrast group, participants had to elaborate two aspects of a future with fewer cigarettes and two aspects of impeding reality, in alternating order, beginning with a positive future aspect; in the positive future (indulging) group, participants elaborated four aspects of the positive future, and in the negative reality (dwelling) group, four aspects of negative reality. Thereafter, participants received a 14-day diary, in which they were to record in writing every cigarette they had smoked. Finally, 2 weeks after the experiment, we
asked participants to indicate the exact date when they had actually started to reduce their cigarette consumption.

Participants in the mental contrast group reduced their cigarette consumption in line with their competence expectations, while those in the indulging and dwelling groups acted independently of their expectations to successfully resist cigarettes. In light of high expectations, contrasting participants tried to reduce their smoking right after the experiment, and tended to light fewer cigarettes per day than those in the indulging and dwelling groups, while the reverse was true for participants with low expectations.

Summary

Mental contrasting translated adolescents' high competence expectations into good mathematics grades and built competence even in participants showing addictive behaviors (smoking). For participants with low competence expectations, it prevented the setting of respective goals. Indulging and dwelling, on the contrary, led to goal setting that is disconnected from competence expectations, and thus from participants' past performance and experience.

We replicated these results in further studies. In the academic domain, for example, experiments pertaining 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, Höning, & Gollwitzer, 2000, Study 1). In the interpersonal domain, experiments focused on solving interpersonal conflicts (Oettingen et al., 2001, Studies 1 and 2), on getting to know an attractive stranger (Oettingen, 2000, Study 1), and on successfully seeking help (Oettingen et al., 2005b, Study 3).

In most of these studies, we used the salience paradigm described earlier; that is, participants rated their expectations of achieving the competence in question, generated positive aspects of having reached that competence and negative aspects potentially impeding such an achievement, then (depending upon condition) either mentally elaborated both future and reality, future only, or reality only. Another paradigm based on ignoring either reality (indulging), future (dwelling), or neither future nor reality (mental contrasting) by reinterpreting the reality and the future through minimizing or maximizing their validity, respectively, generated the same pattern of results (Oettingen, 2000, Study 2; Oettingen, Mayer, Thorpe, Janetzke, & Lorenz, in press, Study 1).

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 and observations, measured directly after the experiment or weeks later, and for samples of different cultural contexts (Europe and the United States). Mental contrasting turned out to be an easy to apply self-regulatory tool to increase objective competence, because 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).

Taken together, these findings indicate that perceiving the acquisition of competence as desirable (positive attitude or high incentive value; i.e., the person values mastery and competence) and feasible (perceived control or efficacy expectations; i.e., the person sees a high likelihood of achieving objective competence) is an important prerequisite for the emergence of strong goal commitments to excel (Ajzen & Fishbein, 1980; Ajzen & Madden, 1986). To create binding goals to excel in competence, however, people need to mentally contrast fantasies about the desired future with impeding reality; only then will high expectations be translated into respective goal commitments.

So far we have shown that positive fantasies contrasted with negative reality help people to translate their high expectations into binding goal commitments geared toward achieving competence. In the study reported below, we explored whether negative fantasies contrasted with positive aspects of reality instigate goals that are geared toward avoiding incompetence.

SETTING COMPETENCE GOALS: APPROACH VERSUS AVOIDANCE

The distinctions between approach motivation and hope for success versus avoidance
motivation and fear of failure have long been considered critical for decision making and action (Atkinson, 1957; Heckhausen, 1963; McClelland, 1980, Murray, 1938). In addition, Elliot and Thrash (2002) have pointed out that approach and avoidance temperaments meaningfully correlate to different types of achievement goals. Furthermore, there are life domains in which people have a hard time generating positive fantasies about the future and should thus be reluctant to form approach goals. For example, people who adhere to health-damaging behavior (e.g., excessive alcohol consumption) might not readily generate positive fantasies about stopping such behavior. Thus, it is important to ask whether mental contrasting can also regulate the setting of avoidance goals.

To create relevant avoidance goals, we took advantage of the fearful images and daydreams that befall people when thinking about undesirable futures. Specifically, we made people generate fantasies about their continued giving in to behaviors known to be detrimental to their future health. Such fearful fantasies about a future of incompetence that are mentally contrasted with a positive reality potentially endangered by such incompetence (e.g., fantasies about failing to reduce cigarette consumption contrasted with reflections on one’s current healthy body) should produce goals directed at avoiding this incompetence.

The previously described study on smoking reduction tested these ideas by containing three further conditions that referred to negative fantasies about a feared future. Participants in these three conditions, instead of listing positive aspects of a future of reduced smoking and negative aspects of impeding reality, listed negative aspects of a future in which they continued to smoke at the present level (e.g., participants listed getting cancer, being a bad model for children, and lifelong addiction), then named positive aspects of present reality that they might lose if they continued to smoke at the present level (e.g., participants listed healthy lungs, pretty skin, physical endurance). We then established the three experimental groups. In the negative future–positive reality contrast group, participants alternated in their mental elaborations between negative fantasies about continued smoking and positive aspects of reality that they might lose if they continued smoking at the present level. In the negative future group, participants only fantasized about the negative future of continued smoking. Finally, in the positive reality group, participants only reflected on positive aspects of the endangered reality. As described earlier, dependent variables included the number of cigarettes smoked, as recorded in the subsequent 14-day diary, and the immediacy of trying to reduce cigarette consumption (in days after the experiment).

Participants in the negative fantasy–positive reality contrast group acted according to their competence expectations. High-expectation participants tended to smoke fewer cigarettes and started earlier to exert respective effort, while the reverse was true for low-expectation participants. To the contrary, those who indulged in their fearful fantasies and those who dwelled on their still-healthy body did not use their expectations as a guide for reducing their cigarette consumption. Only after mental contrasting did participants with high expectations form the goal to avoid the feared future of continued smoking.

**Summary**

Future fantasies, be they positive or negative, merge with competence expectations to form approach and avoidance goals, respectively. They only need to be contrasted with the relevant reality (i.e., with the negative reality when creating approach goals, and with the positive reality when creating avoidance goals). Indulging in the future, or dwelling on reality, whether the future and reality images are positive or negative, lead to the setting of goals that are independent of competence expectations.

Because mental contrasting in light of high competence expectations produces the strong goal commitments we have observed (e.g., promoting course grades across a period of weeks and months; Oettingen et al., 2000, 2001), the question arises whether mental contrasting not only fosters goal setting but also benefits processes of goal striving. Critical processes of goal striving pertain to how people respond to negative feedback that they encounter on their way to
successful goal attainment. Furthermore, in her work on implicit theories about the nature of intelligence and the emergence of respective achievement goals, Carol Dweck and her colleagues have repeatedly pointed out that the pivotal issue in achieving competence is how people respond to negative feedback (Dweck, 1999; Dweck & Leggett, 1988; Grant & Dweck, 2003). Therefore, in the following section, we investigate how the three routes to goal setting influence responses to negative feedback.

MENTAL CONTRASTING AND GOAL STRIVING: RESPONDING TO NEGATIVE FEEDBACK

Mental contrasting in light of high expectations should foster the effective processing of negative feedback, because such negative feedback provides relevant clues on how best to achieve the desired competence (Gollwitzer, 1996; Gollwitzer & Bayer, 1999). Appraising negative feedback as useful information for goal striving rather than as a sign of incompetence should, in addition, guarantee that it does not diminish one’s self-view of competence (Dweck, 1999; Dweck & Leggett, 1988). Therefore, mental contrasting in light of high expectations should allow for effective processing of goal-relevant information, as well as for maintaining a robust self-view of competence, even after obtaining strong negative feedback. In two studies using the same paradigm, we tested whether mental contrasting would indeed serve such a dual purpose when it comes to responding to negative feedback.

Mental Contrasting and the Processing of Negative Feedback

In a simple cued recall experiment, we investigated whether mental contrasting in light of high expectations facilitates the processing of relevant negative feedback (Pak, 2002, Study 1). Students participated in two supposedly independent experiments. In the first experiment, which used a procedure similar to that in the experiments described earlier, students first named their most important current interpersonal concern. They listed, for example, “to get to know someone,” “to solve the problems with my partner,” and “to get along with my roommate.” Then they indicated their expectations of competently solving their concern, and listed four positive aspects of having solved it, as well as four aspects that might impede their solving this concern.

As part of the second experiment, participants were asked to complete two different competence tests, one of which supposedly measured social competence. In the social competence test, students were asked to study a variety of art portraits and then to fill out semantic differential-type questionnaires about their impressions of the people depicted in these paintings. Finally, participants received 12 statements providing feedback; among them, the following three statements contained negative feedback relevant to their social competence: “In socially challenging situations, you are tense,” “When communicating with other people, you are reserved,” and “In stressful social situations, you react impulsively.” Thereafter, the three experimental groups were established: the mental contrast group, the indulging group, and the dwelling group, as in the experiments described earlier. Finally, participants had to report on the feedback they had received using a cued recall procedure.

Recall performance was best in the high-expectancy mental contrast group, while the worst recall was observed in the low-expectancy mental contrast group. Indulging and dwelling participants recalled a medium number of words, independent of their competence expectations. This pattern of data implies that only mental contrasting participants with high competence expectations were eager to process information that was relevant to achieving the desired future competence; mental contrasting participants with low competence expectations failed to process the bothersome information that they did not deem important anymore. Finally, indulging and dwelling participants processed the negative feedback independently of their competence expectations. Whether they perceived their chances of solving the interpersonal problem as high or low (thus, whether the information was valuable or not), they always processed the same medium amount of negative feedback.
Apparently, the three modes of self-regulatory thought not only differentially affect goal setting but also impact goal striving. Processing negative information with respect to one's goal pursuit should only be beneficial, however, if it does not create insecurities that undermine using the negative information to improve one's moving toward the goal. Accordingly, we wondered whether mental contrasting in light of high competence expectations protects a person from experiencing such insecurities due to negative feedback. Negative feedback should not force these individuals to diminish their relevant positive self-view of competence.

Mental Contrasting and Self-View of Competence after Negative Feedback

In this experiment (Pak, 2002, Study 2), using the same paradigm and design as the previous experiment, we measured change in self-view of social competence as a dependent variable. Specifically, participants again named an interpersonal concern, and indicated expectations of competently solving the concern. For a baseline measure regarding self-view of social competence, we asked the following two questions: "How would you estimate your social competence?" and "How would you estimate your interpersonal intelligence?" Participants then listed four positive future aspects of competently solving their interpersonal concern, and four negative reality aspects that stand in its way. Thereafter, in a supposed second experiment, they took a social competence test, similar to the test in the last experiment.

We had established the three groups: mental contrasting fantasies of competently solving the interpersonal problem, indulging in those fantasies, and dwelling on impeding reality. In subsequent false-negative feedback, we told participants that their performance on the social competence test was very weak (i.e., they only had achieved 18 out of 60 points, which they were told was a very low performance in their age group), and that people with such test results would be plagued by conflicted and disharmonious relationships.

While high-expectancy mental contrasting participants remained unaffected by this detrimental personal feedback, low-expectancy mental contrasting participants suffered from a dramatic loss in their self-view of social competence. Again, participants in the indulging and dwelling groups fared in between, independent of their expectations. It appears, then, that mental contrasting protects participants with high competence expectations from having their self-view shattered by negative feedback.

Summary

The findings so far suggest that mental contrasting influences objective competence by two different mechanisms. First, it causes people to set themselves feasible goals, and second, it facilitates goal striving through beneficial responses to negative feedback. These beneficial responses encompass processing goal-relevant negative feedback (thereby unveiling clues for effective goal striving) and preserving a stable positive self-view of competence even in the face of massive negative feedback (norm-oriented and person-oriented; Elliot & McGregor, 2001; Kamins & Dweck, 1999). People profit in their goal striving from both processing negative feedback (Bandura & Cervone, 1983; Carver & Scheier, 1998; Dweck, 1999; Dweck & Leggett, 1988) and holding a positive self-view of competence (even illusory positive; Gollwitzer & Kinney, 1989; Taylor & Brown, 1988; Taylor & Gollwitzer, 1995; Taylor, Lerner, Sherman, Sage, & McDowell, 2003). Accordingly, these findings suggest that mental contrasting provides access to the major tools of successful goal striving and goal attainment.

By allowing appraisal of one's weaknesses, along with keeping a strong sense of overall competence in the face of offensive feedback, mental contrasting equips people for stressful situations. However, mental contrasting might also shelter people from stressful situations by other mechanisms. It might be even used to form goals explicitly geared toward competently coping with stress.

MENTAL CONTRASTING AND SETTING GOALS TO COPE WITH STRESS

Coping with stress has been widely studied in psychology. The literature largely considers coping as emerging from an interaction
between the environment and the individual. For example, Lazarus and Folkman (1984) conceptualize the coping process as consisting of primary appraisal, in which the individual appraises the features of the situation, and secondary appraisal, in which the individual appraises the resources available for dealing with the situation. The kinds and number of resources that people possess for altering or overcoming the stressor at hand are critical.

We argue that individuals who have set themselves binding goals to deal with a stressful situation will more effectively maximize their resources (e.g., plan, exert effort, and persist) than individuals who are less committed to such goals. Indeed, Lazarus (1993) conceives of coping as a goal-directed process in which people direct their thoughts and actions toward the goal of mastering the stressor. Carver, Scheier, and Weintraub (1989), based on the model of behavioral self-regulation (Carver & Scheier, 1981), also have conceptualized effective coping with stress in terms of goal pursuit. In the COPE Inventory, they specified various scales capturing successful coping, some of which are synchronous with aspects of successful goal pursuit (e.g., planning, shielding against distractions, delay of gratification, and persistence; Carver et al., 1989). These goal-related scales predict effective coping (Carver et al., 1989), as do scales in further questionnaires that also focus on goal-related features (see summary by Compas, Connor-Smith, Saltzman, Thompson, & Wadsworth, 2001). Accordingly, we hypothesized that setting binding goals to change or overcome a stressor should be an effective way to maximize one’s coping resources, and to guarantee effective coping with stress.

Mental contrasting should be a beneficial strategy to form goals geared at overcoming a stressor. When competence expectations to overcome the stressor are high (i.e., resources are plentiful), mental contrasting should translate these expectations into binding coping goals, with subsequent mastery of the stressor. When competence expectations to overcome the stressor are low, however, mental contrasting should lead people to turn their back to this stressor, thus conserving their resources for mastering less overwhelming stressors. Three exemplary studies that tested these hypotheses are now described.

Mental Contrasting and Coping with Chronic Stress

In a pilot study, pediatric intensive care nurses indicated that their most disturbing and troublesome chronic everyday stressor was communication with patients’ relatives. Therefore, we chose this aspect of the pediatric nurses’ patient-provider communication as the topic of our experiment (Oettingen et al., 2005b, Study 1). Participants first indicated their competence expectations of being able to improve communication with patients’ relatives. Subsequently, they listed aspects of a future in which they had competently mastered this stressor, and aspects of the negative reality that potentially impeded successful coping. The three experimental conditions were established in the same way as described earlier. In the mental contrast group, nurses had to generate both fantasies of effectively coping with the stressor and reflections on impeding obstacles, while in the indulging and dwelling groups, they had to come up with only future fantasies or only reality reflections, respectively. Two weeks later, as indicators of commitment to improve the relationship to the patients’ relatives, we assessed respective effort (in number of steps taken; Oettingen et al., 2001), and willingness to take remedial action (readiness to participate in a workshop providing relevant information; Hong, Chiu, Dweck, Lin, & Wan, 1999).

In light of high competence expectations (i.e., to be able to improve communication with patients’ relatives), nurses in the mental contrast group showed the greatest effort to improve the relationship with patients’ relatives and the greatest willingness to take remedial action, whereas the opposite held true for those whose competence expectations were low. Nurses who indulged or dwelled showed a moderate amount of effort and remedial action, irrespective of their beliefs in how much they could do for the patients’ relatives. Thus, we have shown that mental contrasting influences coping with chronic stress. In the next study, we analyzed the role of mental contrasting in setting goals to cope with acute stress.
Mental Contrasting and Coping with Acute Stress

Economics students were told that they were participating in a study trying out a new recruitment tool for senior students entering the job market (Oettingen et al., 2005b, Study 2). Therefore, they had to give a presentation in front of a video camera, so that their talk could be evaluated by a group of human resources experts. Giving a presentation in front of a camera has been frequently used as an acute stressor (e.g., Britt, Cohen, Collins, & Cohen, 2001). Because the stressor is standardized and applied in the laboratory, it allows us to measure participants’ appraisal of the stressor, as well as their in situ persistence and coping performance.

Participants first noted how well they wanted to do in their presentations. To measure their competence expectations, we asked them how likely they thought it would be that they actually achieved their desired performance. As in the previous studies, participants named positive aspects of doing well (e.g., participants listed “Feeling good about myself,” “Knowing I can cope with an interview situation,” “Becoming confident about the application process”) and negative aspect of impeding reality (e.g., participants listed “Not having enough time for preparation,” “Feeling shy,” “The stupid camera”). Finally, we established a mental contrast and an indulging condition (due to the complexity of the data collection, we did not include a dwelling condition) in the same manner as described in the previous studies.

We observed a stronger link between competence expectations and coping effort (measured by length of presentation), as well as the quality of coping performance (assessed by independent raters blind to conditions), in the mental contrast condition than in the indulging condition. Thus, mental contrasting can be seen as a self-regulatory tool that makes people adjust their immediate coping responses to their available resources. In addition, mental contrasting and indulging predictably affected how participants appraised the impending stressor, how they felt about the stressor in the aftermath, and how well they considered themselves to be coping.

These findings are important, because prospective appraisal of a situation has been found to influence the coping strategies people use (Carver & Scheier, 1994; Lazarus & Folkman, 1984). Moreover, retrospective appraisal of a stressor, as well as positive self-evaluations of one’s coping efforts, will benefit appraisal of and responses to future stressors. Thus, by creating competence-based coping goals, mental contrasting fosters not only active and constructive coping responses toward the current stressor but also benefits coping responses toward similar stressors in the future. In summary, the results show the usefulness of mental contrasting for mastering acute stress and demonstrate its role for both coping cognition (i.e., appraisal and self-evaluation) and coping behavior (persistence and actual coping performance).

The previous two studies suggest that mental contrasting in light of high competence expectations creates strong goals to cope with chronic and acute stress; in light of low competence expectations, it leads people to abstain from setting coping goals and to save resources for more promising coping endeavours. In other words, mental contrasting reveals which stressors one should overcome or change, and which stressors one should avoid. These considerations suggest that inducing mental contrasting as a metacognitive strategy that can be applied to diverse everyday problems should facilitate making up one’s mind and effectively managing precious resources (e.g., time and money), thereby alleviating the accumulation of chronic and acute stress.

Inducing Mental Contrasting as a Metacognitive Strategy

To test the idea that mental contrasting taught as a metacognitive strategy prevents stress by improved decision making and superior resource management, one group of health care managers was instructed in mental contrasting, while a control group of managers was taught to fantasize positively only (Oettingen et al., 2005b, Study 4). The interventionist then explained to participants in both groups how to apply these strategies to their most cumbersome everyday problems or stressors.

Specifically, depending on condition, we first asked participants to do the mental contrasting versus indulging exercise in writing
with respect to their current most important problem. In order to practice further the respective procedures of mental elaboration (i.e., mental contrasting vs. indulging), participants were then asked to imagine as many pressing professional and personal everyday stressors and problems as possible that were relatively controllable but made them feel clearly uneasy (e.g., participants named “Being assertive in a staff meeting,” “Visiting my mother,” “Terminating the job contract of a coworker,” “Inviting people for dinner”). Depending on experimental condition, either mental contrasting or indulging procedures were then used for the first six of the named problems. Finally, all participants received a 14-day diary and were asked to do their mental exercise in writing with respect to the stressor that made them feel most uneasy on a given day. They were encouraged also to use the mental exercise with respect to any other problem or concern that would appear during the day, and to apply the exercise whenever they felt there was a good opportunity to do so (e.g., while waiting for the bus).

Two weeks after the intervention, we asked participants how they fared in their daily decision making and time management since the intervention. In comparison with participants in the indulging group, those in the mental contrast group reported having experienced greater ease in their decision making and having organized their time in a more efficient way. Moreover, they were more successful both in completing some projects and in relinquishing others. Apparently, mental contrasting can be successfully taught and readily applied in self-instructions to the various professional and private problems and stressors people face in their daily life. Furthermore, mental contrasting can be seen as a self-regulatory strategy that guides people to improve their ease in decision making, their time management, and their readiness to relinquish some projects in favor of completing others.

Based on the findings of our past studies that mental contrasting leads to setting strong coping goals in light of high competence expectations but to relinquishing coping goals in light of low competence expectations, we speculate that by applying mental contrasting, participants relinquish those projects and stressors in which they felt they had little competence or resources available, thus avoiding psychological distress stemming from pursuing pointless endeavors. To the contrary, when competence expectations were high, mental contrasting should have led people to pursue vigorously and complete ongoing projects. Teaching how to apply mental contrasting to everyday problems and stressors rather than indulging in their successful solution helped the managers to deal with their daily lives in a way that prevented the cumulative stress of having to deal with unpromising and too many projects.

Summary

We have observed the benefits of experimentally induced mental contrasting for coping with chronic and acute stressors. The findings also suggest that mental contrasting, taught as a metacognitive strategy in a simple intervention and applied to various daily problems (e.g., organizing a dinner party, being assertive in meetings), prevents long-standing stress by fostering the completion of feasible tasks and by refraining from tackling unfeasible ones. Indulging, on the other hand, causes people to be halfheartedly engaged in too many, often unpromising projects.

Our findings are in line with the literature on denial and wishful thinking, in which these ways of thinking are observed to impede effective coping with stress, especially when the stressors do not dissolve by themselves but require attention and effortful action to be overcome (Carver et al., 1989). Based on these considerations, we speculate that even though the present studies show that the consequences of indulging are maladaptive when the individual has a choice to face or not to face the stressor at hand, indulging may be beneficial for coping with stressors that are characterized as being inescapable, in the sense that they can neither be mastered nor relinquished. For example, elementary school children with low competence expectations of excelling in math should benefit from indulging in future fantasies about their math successes. Mental contrasting, in this case, would only focus them on their low competence, thus, leading them to relinquish efforts to improve in math. Indulging, to the contrary, should pre-
vent them from taking their bleak prospects into consideration, thus fostering at least moderate problem-focused coping and thereby development of unnoticed resources and potentials. In addition, while students are kept moderately engaged through indulging, the teacher can strengthen their efficacy expectations. Once efficacy expectations are strong (Bandura, 1977, 1997; Bandura & Schunk, 1981), mental contrasting procedures can be fruitfully applied.

CONCLUSIONS

Based on William James’s (1890/1950) distinction between beliefs and images, we observed that thinking about the future in terms of competence expectations fosters motivation and objective competence, while thinking about the future in terms of competence fantasies is detrimental to motivation and performance. Competence fantasies, however, can be merged with high competence expectations to form binding competence goals. They only need to be contrasted with reflections on impeding reality. This simple procedure of mental contrasting also benefits goal striving: It guarantees that critical feedback is processed in terms of valuable information instead of self-damaging criticism. Moreover, mental contrasting can be used to create goals geared at coping with chronic and acute stress, and when taught as a metacognitive strategy, to prevent long-term stress by fostering ease of decision making and effective resource management.

“The person who is aware of the past knows about the future!” This slogan captures the benefits of mental contrasting, because mental contrasting fosters action according to experiences of the past. The slogan also alludes to the conditions in which mental contrasting is beneficial: whenever one needs to be aware of one’s past performance in order to predict the future.

The findings may also be interpreted from a sociocultural perspective. For example, it might be argued that in modern, rather than in more traditional societies, past experience needs to inform future action, because myths and norm-oriented rituals are fading in modern societies and thus cannot guide action anymore. Few norm-oriented rituals provide assurance and boundaries for acting (by determining who interacts with whom, when, where, and how; Boesch, 1982). What, then, provides the basis for action in modern societies? We suggest that in modern societies, expectations are taking over the function of norms and rituals (Oettingen, 1997). Specifically, by reflecting experiential histories, expectations provide the necessary assurance to act and show the boundaries of acting.

As expectations gain a pivotal role in guiding action, and mental contrasting activates expectations, self-regulatory thought in terms of mental contrasting should be important in modern societies, allowing us to be agents of our own development and change (Bandura, 1989; Brandstätter & Lerner, 1999). In traditional cultures, to the contrary, where normative rituals rather than expectations guide action, there is less need for mental contrasting. Hence, indulging in the future and dwelling on reality can flourish. Indulging in a desired future has the additional advantage that it helps people to overlook pessimistic expectations about continued hardships of normative constraint, thus providing hope for a better future. Engaging in such hopeful pessimism will prevent disengagement and should yield more positive affect and well-being than mental contrasting.

Although we have pointed at the perils of indulging in a desired future and of dwelling on negative reality throughout this chapter, the latter considerations imply that the benefits of mental contrasting versus indulging and dwelling are context-dependent. Only when expectations need to guide action, and the person can be the agent of his or her own development, should mental contrasting be the beneficial strategy. Under normative constraints, to the contrary, indulging in positive fantasies may well prove to be the more comforting solution.

REFERENCES


Hong, Y., Chiu, C., Dweck, C. S., Lin, D. M.-S., &


fantasy, and weight loss: Is the impact of positive thinking always positive? Cognitive Therapy and Research, 15, 167–175.


