

Turning Fantasies About Positive and Negative Futures into Self-Improvement Goals

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Contrasting fantasies about the future with reflections on reality that impedes fantasy realization creates a tight link between expectations of success and forming commitments to self-improvement goals. This effect applies to both fantasies about a positive future contrasted with impeding negative reality as well as fantasies about a negative future contrasted with impeding positive reality. In Study 1, with 63 student participants, contrasting positive fantasies about benefiting from a vocational training with negative reflections on reality impeding such benefits led to expectancy-dependent willingness to invest in the training, more so than indulging in the positive future and than dwelling on the negative reality. In Study 2, with 158 high school students from former East Berlin, contrasting negative, xenophobic fantasies about suffering from the influx of immigrants with positive reflections on reality impeding such suffering led to expectancy-dependent tolerance and willingness to integrate the immigrants. Findings are discussed in terms of how mental contrasting facilitates self-improvement and personal development by making people form expectancy-dependent goal commitments to approach positively-perceived as well as negatively-perceived futures.

KEY WORDS: fantasies; goals; expectations; commitment; personal growth; xenophobia.

Theories of motivation (Ajzen, 1991; Atkinson, 1957; Carver & Scheier, 1998; Gollwitzer, 1990; Locke & Latham, 1990; see Oettingen & Gollwitzer, 2001, for a review) suggest that people base their goal setting on desirability and feasibility of future outcomes or behaviors. Desirability is conceptualized by the estimated attractiveness of likely short-term and long-term consequences of goal attainment.

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Feasibility is conceptualized by the subjective likelihood of performing the respective goal-directed behaviors (i.e., self-efficacy expectations; Bandura, 1977a,b), the belief that these goal-directed behaviors will lead to the desired outcome (i.e., outcome expectations; Bandura, 1977a,b; instrumentality beliefs, Vroom, 1964), the judged likelihood of attaining the desired outcome (i.e., general expectations; Oettingen, 1996) or by the likelihood of desired outcomes in general (i.e., optimism; Scheier & Carver, 1987). Recent research has explored the psychological processes on which goal setting is based.

Findings suggest that whether or not a goal setting determinant such as feasibility will take effect depends on the way people deal with their fantasies about desired futures (Oettingen, 1999). Fantasies about desired futures are images of positively-perceived future events or behaviors that emerge in the stream of thought. In such fantasies, people depict future behaviors and performances independently of their past behaviors and performances or how likely it is that they will realize their fantasies (Klinger, 1971; Singer, 1966). People mostly fantasize about not-yet-realized but principally possible future events and behaviors. For example, they may fantasize about becoming a lawyer, about regularly practicing health behavior, or about excelling in mathematics. 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).

SELF-REGULATION OF GOAL SETTING

The Model of Fantasy Realization (Oettingen, 1999) analyzes the self-regulation of goal setting by differentiating among three routes to forming goal commitments. These three routes are based on how people deal with their fantasies about positively-perceived futures. One route, mental contrasting of a desired future with reality that impedes the realization of the future, leads to feasibility-related (i.e., expectancy-dependent) goal commitment. The other two routes, indulging in the desired future and dwelling on impeding reality, foster goal commitments that are independent of feasibility concerns (i.e., expectancy-independent). The expectancy-dependent route to forming goal commitments rests on contrasting positive fantasies about a desired future with negative reflections about the reality that stands in the way of realizing the positive fantasies. In contrast, the two expectancy-independent routes to forming goal commitments are based on positive fantasies about the desired future only and on negative reflections about the impeding reality only.

Setting Goals to Reach Positive Futures

Expectancy-Dependent Goal-Setting

Fantasies about the future can be treated in different ways. The treatment that leads to expectancy-based goal commitment involves mentally contrasting

fantasies about a positively-perceived, desired future with negatively-perceived aspects of a reality that stands in the way of realizing the desired future. Fantasies about becoming a lawyer, for example, may be contrasted with reflections on one's moderate GPA, or fantasies about excelling in math might be contrasted with reflections on being easily distracted in math class. Such mental contrasting of the positive future with its impeding reality makes the future and reality simultaneously accessible (Kawada, 2004), and it activates the relational construct (Higgins & Chaires, 1980) of reality "standing in the way" of realizing the desired future (Oettingen, Pak, & Schnetter, 2001, Study 3). Thus, a necessity to act arises that poses the question of whether the desired future can be realized by overcoming the present obstacles. Expectations of success may answer this question. Thus, expectations of success should be activated and used in goal setting.

One can also view the strategy of mental contrasting from a problem-solving perspective. Newell and Simon (1972) argued that the internal subjective representation of a problem (i.e., the person's problem space, Newell & Simon, 1972) needs to be differentiated from the objective problem (i.e., realizing one's fantasies by overcoming one's obstacles in the present reality). After mental contrasting, the subjective 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 obstacles as something to be overcome. Therefore, relevant expectations of overcoming the obstacles to reach the desired future are activated. If expectations of success are high, a person will commit herself to the goal of attaining the desired future; if expectations of success are low, the person should refrain from doing so.

Expectancy-Independent Goal Setting

Expectancy-independent goal commitment emerges when a person only fantasizes about a positively-perceived future. As impeding reality is disregarded, such indulging in a positive future allows the enjoyment of the desired future envisioned in the here and now. No necessity to act emerges, relevant expectations of success are not activated, and people will fail to integrate expectations of success in their goal setting.

Finally, expectancy-independent goal commitment emerges when a person only reflects on the impeding reality. As the desired future is disregarded, reality fails to be perceived as impeding the attainment of the desired future. Therefore, a necessity to act does not emerge, and expectations of success are not activated and used in forming goal commitments. From a problem-solving perspective, fantasizing about the positive future only (indulging) or reflecting on the negative reality only (dwelling) means construing the problem space as entailing only half of the constituents of the objective problem.

Empirical Support

These ideas are supported by a series of experiments in which expectations of successfully reaching a desired future were measured and then the three forms of self-regulatory thought were induced. Specifically, participants had to mentally contrast a desired future (e.g., solving an interpersonal problem, learning a foreign language) with its impeding reality, only fantasize about the desired future, or only reflect on impeding reality (Oettingen, 2000, Study 1; Oettingen et al., 2001). Thereafter, various indicators of goal commitment were measured via self-report or direct observation.

In an illustrative experiment on excelling in math (Oettingen et al., 2001, Study 4), participating adolescents enrolled in a vocational school for computer programming first indicated their expectations of excelling in math. Thereafter, the three experimental conditions were induced. In the mental contrasting condition, participants alternated in their mental elaborations between self-generated aspects of a positive future of excelling in math (naming aspects such as passing the final exam, having feelings of pride, or being qualified for the job) and self-generated aspects of the negative reality that stand in the way of excelling in math (naming aspects such as being lazy, absent-minded, or distracted by other students). In the indulging condition participants only mentally elaborated the positive future of excelling in math, and in the dwelling condition they only elaborated the negative reality that stood in the way of excelling in math. Indicators of the strength of goal commitment were variables of goal striving such as teacher-rated effort and variables of goal attainment such as teacher-given course grades. The dependent variables were measured two weeks after the experiment. Results showed that only in the mental contrast condition did students' efforts and performances reflect their expectations. That is, high-expectancy participants in the mental contrast group fully committed to excelling in math, while low-expectancy participants refrained from such a commitment. Participants in the indulging and dwelling conditions, in contrast, showed moderate goal commitment irrespective of their expectations to excel in math.

In all of these studies, mental contrasting led to forming goal commitments in accordance with respective expectations of success, while indulging and dwelling failed to do so. These findings were obtained for goal commitments assessed by cognitive, affective, and behavioral indicators (e.g., planning, anticipated disappointment in the case of failure, exerted effort), via self-report or observation and as measured directly after the experiment and weeks later. Mental contrasting turned out to be an easy-to-apply self-regulatory tool as the described effects were obtained even when participants elaborated the future and the reality very briefly (i.e., were asked to imagine only one positive aspect of the desired future and only one obstacle standing in the way of realizing the desired future; Oettingen, Hönig, & Gollwitzer, 2000).

These findings suggest that perceiving the envisioned future as desirable (having a positive attitude toward or high incentive value of attaining it) and feasible (having high perceived control in or efficacy expectations of attaining it) are just prerequisites for the emergence of goal commitments. To create effective goal setting, people need to translate these positive attitudes and high expectations into goal commitments. Mentally contrasting the desired future with impeding reality facilitates the translation of attitudes and expectations into goals. This holds true for goals of widely different orientations (e.g., goals in the interpersonal and the achievement domain, goals that pertain to self-chosen versus assigned futures; see reviews by Oettingen & Hagenah, 2005; Oettingen & Thorpe, 2006).

Related Approaches

One might argue that dwelling, as we conceptualize it in the present work, relates to what has been referred to as rumination. Ruminative thought that is recurring and highly intrusive, focuses people excessively on their own feelings and reactions to negative events or depressive symptoms (Nolen-Hoeksema, 1991; Nolen-Hoeksema & Morrow, 1991). In contrast, dwelling is not necessarily recurring and intrusive, but it involves thoughts about obstacles in the present reality that may impede the realization of a better future. Related to Nolen-Hoeksema's model of ruminative thought, but more focused on goals, Martin and Tesser (1989; Martin, Tesser, & McIntosh, 1993) suggest that ruminative thought ensues when people perceive that the attainment of an important higher-order goal is threatened. The further away the goal is in the hierarchy, the more likely it is that a threat to this goal will elicit rumination. Whereas Martin and Tesser focus on the links between goals of different hierarchy levels, our work focuses on goal setting through mental contrasting of free fantasies about the future with reflections on impeding reality (i.e., obstacles). When future and reality are linked, then people commit to the goal of realizing the positive fantasy and make plans to realize the newly formed goal.

The planning of goal realization may be facilitated by process simulations. Taylor, Pham, Rivkin, and Armor (1998) analyze the effects of two different forms of mental simulations: process simulations directed at implementing a set goal, and outcome simulations directed at experiencing the attainment of the goal. They observed that process simulations are more effective in promoting the attainment of a set goal (e.g., achieving an A) than outcome simulations. Thus, whereas Taylor focuses on strategies that facilitate the implementation of a set goal, our work investigates the self-regulation processes that further the forming of goal commitments. Indeed, we postulated and observed that process simulations emerged as a result of forming strong goal commitments through mental contrasting (Oettingen, 2000, Study 2).

An explicit discrepancy-reduction model of goal pursuit is presented by Carver and Scheier (1998). Their model of self-regulation assumes that the self-regulation of behavior is guided by feedback loop control processes. Specifically, a sensed value is compared to a reference value or standard, and behavioral adjustments are made to move the sensed value in the direction of the standard. Our model differs from this work in multiple ways. First, positive fantasies are not standards. Positive fantasies are conceptualized as vague images about a desired future that, only after being subjected to mental contrasting in light of high expectations of success, cause the formation of binding goal commitments. Second, we do not consider behavior and behavioral effects (neither in their objective nor in their perceptual form) as independent variables in our model. We only consider perceptions of obstacles or impediments to the realization of a fantasized future. Third, we do not postulate a comparator, as no perceptions of effects of behavior are compared with a standard. We simply postulate that conjoint mental elaboration of both a desired future and respective obstacles produces simultaneous accessibility of the future and the impeding reality. If, in addition, this is done in the right order (i.e., fantasies serve as the anchor to which the obstacles are related, and thus the relational construct of reality "standing in the way" of fantasy realization is activated; Oettingen et al., 2001, Study 3), the conjoint mental elaboration will make expectations relevant to forming goal commitments. In sum, the important elements of control theory (standard, comparator, behavior and its effects) are not part of our model, as our model does not postulate feedback loop control processes.

One might further assume similarities of Fantasy Realization Theory with models of temporal comparison. In their work on counterfactual thinking (Roese, 1994; Markman & McMullen, 2003; see also Sanna, Chang, & Meier, 2001), evaluative thoughts contrasting the present with how the past could have been worse lead to positive affect, but to reduced motivation and performance. In line with these results, Oettingen and Mayer (2002) observed in several studies that positively-valenced fantasies about the future predict low effort and performance. In a study on finding a job, graduates who initially reported positive fantasies about successfully finding a job in their field, two years later obtained fewer job offers and earned a lower salary than participants who entertained more negatively-valenced fantasies. These findings are in line with the current model of fantasy realization, wherein indulging in positive fantasies is proposed to be more problematic for motivation and performance than mental contrasting, which involves negative thoughts about reality. Importantly, in this set of studies, another form of thinking about the future, optimistic expectations, predicted high effort and successful performance, supporting a large body of research on the beneficial effects of optimistic thinking (for reviews, see Aspinwall & Brunhart, 1996; Bandura, 1977a,b; Seligman, 1991; Taylor, 1989). In sum, Oettingen and Mayer (2002) show that thinking about the future in terms of fantasies versus expectations sharply differ in their predictions of effort and performance.

Fantasy Realization Theory may also be related to the literature on social comparison processes. Downward social comparisons, which involve contrasting one's own performance with the lower performance of another person, may lead to self-enhancement, while upward social comparisons may lead to self-deprecation and frustration (Wood, Taylor, & Lichtman, 1985). Recent research stresses that the evaluative question that is to be answered shapes the direction of comparison and the type of target chosen (Suls, Martin, & Wheeler, 2002). The latter idea is underlined by the distinction between reactive comparisons (pertaining to outcomes that are fixed) and proactive comparisons (pertaining to outcomes that may happen in the future and are thus potentially still malleable; Aspinwall, 1997; Aspinwall, Hill, & Leaf, 2002). Proactive social comparisons, by providing useful information about how to use future opportunities and avoid future pitfalls, may directly benefit from both upward and downward comparisons. Proactive social comparisons, like process simulations, may thus be an important strategy to implement goals established by mental contrasting.

Finally, mental contrasting may remind the reader of cognitive procedures activated in the deliberative mind-set (Gollwitzer, 1990). Mind-set theory assumes that scrutinizing the pros and cons of a given wish is antecedent to any goal setting (i.e., crossing the Rubicon). Fantasy Realization Theory does not speak to the balanced deliberation of incentives as a prerequisite for goal setting. Rather, the present model argues that the strength of goal commitment becomes related to the person's expectations of success if she manages to mentally contrast the desired future with obstacles of present reality.

The Current Research

Research on fantasy realization commonly uses the salience paradigm (Oettingen, 2000, Study 1; Oettingen et al., 2000, 2001). As noted above, this paradigm focuses participants' thoughts and images on both future and reality (mental contrasting condition), only on the future (indulging condition), or only on reality (dwelling condition). A more stringent test of the theory, however, demands that we obtain the same pattern of results when using a different paradigm (Cook & Campbell, 1979). Therefore, we developed an alternative paradigm that focuses all participants on both future and reality, but then selectively deemphasizes either the reality (indulging condition) or the future (dwelling condition), or neither the reality nor the future (mental contrasting condition, Oettingen, 2000, Study 2). Specifically, all participants were first asked to mentally elaborate the positive future and the negative reality, but depending on condition, they were then encouraged to elaborate the negative reality from different points of view. Participants in the indulging and dwelling conditions were induced to reinterpret the meaning of the negative reality by either devaluing it (indulging group), or by becoming fully engrossed in it (dwelling group). In sum, the paradigm establishes

the indulging and dwelling conditions by making participants differentially reinterpret the meaning of reality.

So far, there has been only one study that used the reinterpretation paradigm (Oettingen, 2000, Study 2). In this experiment, participating female graduate students' fantasies pertained to combining an academic career and raising children. Participants had to first indicate their expectations of successfully combining an academic career and raising children, and then had to mentally elaborate this positive future of combining work and family life. Thereafter, all participants read statements documenting that the present reality (e.g., lack of high quality child care, work demands) impeded the desired future. Specifically, in the mental contrast condition participants were asked to freely associate to these statements. Participants in the other groups were encouraged to devalue the statements (indulging condition) or fully focus on them (dwelling condition). Results showed that only participants in the mental contrast condition, but not in the indulging or dwelling conditions, committed themselves to combining work and family in accordance with their respective expectations. Goal commitment was measured two weeks after the experiment by willingness to exert effort, by anticipated disappointment if the wished-for future did not come true, and by reported process simulations of how to combine work and family life (e.g., one item to be answered on a 1–7 scale was: "In the last 2 weeks, how often have you thought about how you could combine work and family life?")

In the first study of the current paper, we attempted a replication of these findings in the domain of self-improvement. In contrast to the study on combining work and family life, wherein goal commitment was measured via emotional and cognitive indicators of goal commitment, the present study included behavioral indicators of commitment. Moreover, we measured change of goal commitment from before to after the manipulation, and we assessed not only subjective self-reports of commitment as in the previous studies, but we also content analyzed participants' thoughts and images for their feelings of favorableness toward the goal (Study 1) and number of relevant plans (Study 2). Finally, whereas the previous research on mental contrasting focused on measuring the activation of efficacy expectations (e.g., Oettingen et al., 2001, Study 4) or of general expectations (e.g., Oettingen et al., 2001, Studies 1, 2, 3), the present study examined whether mental contrasting also activates outcome expectations. Outcome expectations are judgments on how likely it is that a given behavior will lead to beneficial outcomes (Bandura, 1977a,b). Like efficacy expectations and general expectations, they are conducive to effort and performance. Therefore, it is important to investigate which self-regulation processes will activate outcome expectations and make them useful for forming goal commitments.

Study 2 tests whether mental contrasting of a negatively-perceived future with a positively-perceived reality leads to approaching the negatively-perceived future. Specifically, we hypothesized that mental contrasting makes people approach

futures of which they are unfoundedly afraid. For example, mental contrasting of fantasies about a negative future might help people to confront a conflicted relationship, a tedious learning task, or an impending medical procedure, or to approach a member of an out-group against which one is prejudiced. The latter theme is taken up in Study 2, which asks if contrasting of xenophobic fantasies with impeding positive reality will result in goal commitments geared at tolerance and the provision of support to members of an out-group against which one is prejudiced.

EXPERIMENT 1: TURNING POSITIVE FANTASIES INTO SELF-IMPROVEMENT GOALS

In this experiment, participants' fantasies pertained to self-improvement. Specifically, students fantasized about actualizing their potential through improving their professional and personal skills. We told participants that this self-actualization could be achieved by enrolling in a training program that we introduced with a colorful leaflet. The leaflet, which was made up by us, vividly described a training program called "Self-Efficacy Training" (SET). The program, which in reality did not exist, was said to have been proven to be highly successful in other countries. Further, as it supposedly improved people's professional and private skills very effectively, it was now also being tested in Germany, which was where the study took place. The dependent variables were three indicators of goal commitment: 1) change of interest in enrolling in the training program from before to after the manipulation; 2) willingness to invest time and money in participating in the training program, and 3) the extent to which experimental participants recommended the training to another person.

We had the following hypothesis: Participants who mentally contrast their positive fantasies of benefiting from the training with the reality that stands in the way of such benefits will consider relevant expectations when forming their goal commitment to participate in the program. That is, only in the mental contrast group should we observe a link between expectations and the various indicators of goal commitment: change of interest, willingness to exert effort, and recommendation of the training program to others. For participants in the indulging and dwelling conditions, in contrast, expectations of forming goal commitments will not be activated, and thus they lead to neither strong commitment nor weak commitment. Participants should thus show a comparatively moderate change of interest in the training program, as well as a comparatively moderate willingness to exert effort independent of their expectations of success. In addition, they should evaluate the training program moderately positively regardless of whether their expectations are high or low.

Method

Participants and Design

Participants were 63 female students from three universities in Berlin with a mean age of 20.79 years ($SD = 2.53$), ranging from 18 to 29 years. Students, separated by partitions, were tested one to six at a time. They were paid € 10 (about \$10 US.). There were three experimental conditions: a mental contrast condition, a positive future only condition (indulging), and a negative reality only condition (dwelling). We assessed expectations to test for the predicted expectation x condition interaction effect.

Materials and Procedure

The experimenter gave an overview of the procedure, told participants that their answers would remain confidential, and stressed that their participation was voluntary. Participants were also informed that there was another appointment one week after the experiment at which they had to fill out a short follow-up questionnaire. After they had given their informed consent, they were guided to their seats. To guarantee anonymity, they were requested to write down a personal code instead of their names. The experimenter then delivered two envelopes containing the cover story and the experimental materials. The cover story explained that the study's purpose was to test the applicability of a new training program called "Self-Efficacy Training," or SET, to the German culture and language. The training, so far only administered in the United States, Canada, and Great Britain, was said to show superior results in improving professional and interpersonal competencies.

Next, participants were asked to open the first envelope, which contained a leaflet introducing SET. After reading and considering the leaflet, they were asked to put it back in the envelope and to open the second envelope wherein they found a three-part questionnaire. In the first part of the questionnaire, we measured participants' expectation of benefiting from the self-efficacy training: "How probable do you think it is that you will benefit from the training program?" The seven-point response scale ranged from 1 (*not at all likely*) to 7 (*very likely*). We also measured the respective incentive value: "How important is it to you that you benefit from the training program?" The response scale reached from 1 (*not at all important*) to 7 (*very important*).

In the second part of the questionnaire, to induce positive fantasies in all participants, we asked them to generate positive thoughts and images that they associated with SET being beneficial for their professional and private lives. They were requested to let these positive thoughts and images pass in front of their

mind's eye and to give a detailed written account of what they had been thinking. Specifically, participants were instructed:

Imagine that you successfully completed the SET course and in your professional and private life things are working out really well, much better than they were before. Please let such positive images pass by your mental eye, and then depict in writing all these thoughts and images. If you need more space, use the back of the page.

The third part of the materials contained information about the negative reality. We made participants work through aspects that might impede the benefits of the training. More specifically, participants were confronted with 12 statements, which we had made up, supposedly taken from interviews with young women who had already participated in SET. These women described the intense effort that the training program required, and they questioned its benefits. Examples of the statements are "When I went to the SET training program for the first time, I thought to myself, 'You should have known that there would be only boring people here,' (Karin T., 20 years)," "Sometimes I had to prepare for SET until late in the evening—this was very time-consuming and exhausting (Inge K., 24 years)," and "When I wrote a check to pay my final dues for SET, it occurred to me that I could have spent the money to go on vacation (Sophie H., 28 years)."

Finally, we induced the three conditions by varying the point of view from which participants had to appraise these statements. In the mental contrasting condition participants were asked, "What thoughts and images come to your mind when reading these statements? Please give your thoughts and images free reign and describe them in detail." Participants were then asked to write down their thoughts and images.

In the positive fantasy only (or indulging) condition and in the negative reality only (or dwelling) condition, participants received instructions in addition to those described above. Specifically, the instructions were written to ensure that participants would either trivialize the trainees' critical statements (indulging condition) or take them particularly seriously (dwelling condition). The additional instructions in the indulging condition read: "In each of these statements there is an excuse, a false pretense involved. Can you imagine what is behind this false pretense?" The additional instructions in the dwelling condition read: "Please describe those thoughts and images that have contributed to the reason(s) that you did not—or did not more often—participate in such a training program in the past."

Dependent Variables

One week after the experiment, participants were asked to come in again and to fill out a short follow-up questionnaire that contained the dependent variables. To measure interest in the program we asked, "Would you be interested in joining

the self-efficacy training?" The seven-point response scale ranged from 1 (*not at all*) to 7 (*very much*). As we had asked the same question at the very beginning of the experiment (before measuring expectations and incentive value), we assessed change of interest by treating the scores before the manipulation as a covariate.

Willingness to exert effort was assessed by three items pertaining to effort, money, and travel time participants would be willing to spend in order to participate in one of these courses. The first question measured effort: "There will be several training courses that last eight weeks but vary in scale. Please indicate by circling yes or no if you want to join one of these courses. If you do, please mark how many hours per week you would like to invest." The response scale ranged from 1 hr to 7 hr per week. For participants who did not want to enroll in one of the courses, we filled in 0 hr. The second question measured the amount of money participants were willing to invest in the training program: "Some of the training courses can be offered at lower prices because they are taught by adjunct teachers. How much money would you be willing to pay for participation in one of the courses?" The eight-point scale reached from zero Euro to equal to or more than 125 Euros. The third question measured the time people would be willing to travel in order to participate in one of these courses: "The number of people who are interested decides at how many places we will offer the training course. How far would you be willing to travel in order to participate in a course that takes place once a week?" Participants indicated the time they would be willing to travel in minutes. We z-transformed the response to each question as they had different response scales. Internal consistency was adequate (Cronbach's $\alpha = .76$).

To assess if participants were thinking and feeling favorably towards the training program, we asked them to answer the following question in writing: "What would you tell a person who may be interested in enrolling in the program about the SET training?" Two independent raters content-analyzed participants' written answers by rating the favorableness of the arguments regarding the training program. The five-point scale ranged from 1 (*very unfavorable arguments*) to 5 (*very favorable arguments*). Inter-rater reliability was high ($r = .86$). For example, one participant wrote, "The program will teach you how to concentrate and how to work well; it will motivate you to act assertively and independently." Another participant more pessimistic about the beneficial effects of the program wrote, "It will take too much time until the benefits of the program will unfold, and teaching happens in groups; who knows if it fits everyone."

Ten students (15.9% of the sample; five in the mental contrast condition, four in the indulging condition and one in the dwelling condition) did not complete their follow-up questionnaire and were accordingly excluded. The students who were excluded from analyses had lower expectations, $M = 3.70$, $SD = .95$, than the students who filled in the follow-up-questionnaire, $M = 4.55$, $SD = 1.15$; $F(1, 61) = 4.77$, $p = .03$, but they did not differ in their incentive values, $F(1, 61) = .02$, $p = .89$. As a result, the analyses were based on 53 participants (84.1% of the original sample) except for the dependent variable "recommendation," which

was based on 52 participants, because one participant (1.9 % of the sample) failed to fill in this item.

The experiment was completed by mailing debriefing letters describing the experimental design, procedure, hypotheses, and purpose of the study to the participants. Participants were informed that they could contact us at any time if they had questions.

Results

Descriptive Analyses

Mean expectation of benefiting from the training was above the midpoint on the seven-point scale ($M = 4.55$, $SD = 1.15$), as was the mean for incentive value ($M = 4.79$, $SD = 1.91$). Expectation and incentive value correlated positively ($r = .37$, $p < .01$). Participants' interest correlated positively with willingness to exert effort and with recommendation. Willingness to exert effort correlated positively with recommendation (Table I). We statistically controlled for incentive value by running each analysis with incentive value as a covariate (Oettingen, 2000; Oettingen et al., 2001).

Change of Interest

We hypothesized an interaction effect between condition and our continuous measure of expectation in predicting change of interest. To test this hypothesis, we estimated a General Linear Model with interest after the manipulation as the dependent variable, and condition, expectation, condition by expectation, incentive value, and interest in participating (right before the experiment) as independent variables entered simultaneously. We observed nearly significant and significant main effects of both condition and expectation, $F(2, 45) = 3.02$, $p < .06$, and $F(1, 45) = 4.05$, $p = .05$, as well as the predicted interaction effect, $F(2, 45) = 3.79$, $p < .04$.

Table I. Study 1: Means, Standard Deviations, and Correlations Among Dependent Variables ($n = 53$)

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Interest in participating	4.23	1.35	—	.58***	.34**
2. Willingness to exert effort	.07	.77	—	—	.57***
Hours per week	1.28	1.29			
Financial investment (€)	31.23	32.84			
Travelling distance (min)	25.23	19.68			
3. Recommendation	3.46	1.31	—	—	—

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table II. Study 1: Indicators of Goal Commitment as Predicted by Expectation

Variable	Contrast condition (<i>n</i> = 16)			Indulging condition (<i>n</i> = 17)			Dwelling condition (<i>n</i> = 20)		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Change of interest	.76	.27	.65*	.08	.17	.07	-.04	.29	-.03
Willingness to exert effort	.70	.19	.81**	.03	.12	.04	.06	.13	.07
Recommendation	1.05	.35	.93*	-.17	.25	-.15	.04	.29	.03

* $p < .05$; ** $p < .01$.

Planned comparisons revealed that the link between expectation and change of interest was stronger in the mental contrast condition as compared to both the indulging condition, $t(45) = 2.38$, $p < .03$, and the dwelling condition, $t(45) = 2.57$, $p < .02$. The latter two conditions did not differ from each other, $t(45) = .17$, $p > .86$ (Table II and Fig. 1, left graph; the tables and graphs show predicted values of each dependent variable with incentive value held constant at its mean).

Willingness to Exert Effort

We hypothesized an interaction effect between condition and our continuous measure of expectation in predicting the willingness to exert effort. To test this hypothesis, we again estimated a General Linear Model, this time with willingness to exert effort as the dependent variable, and condition, expectation, condition by expectation, and incentive value as independent variables, entered simultaneously. There were main effects of both condition and expectation, $F(2, 46) = 4.35$, $p < .02$ and $F(1, 46) = 9.22$, $p < .005$, as well as the predicted interaction effect, $F(2, 46) = 4.24$, $p < .03$. Predicted values for the condition by expectation interaction showed that the link between expectation and willingness to exert effort was stronger in the mental contrasting condition than in the indulging condition, $t(46) = 2.52$, $p < .02$, and the dwelling condition, $t(46) = 2.72$, $p < .01$, which did not differ from each other, $t(46) = .03$, $p > .97$ (Table 2 and Fig. 1, middle graph).

Recommendation

Estimating an analogous General Linear Model to predict recommendation of the training program to others, we observed a nearly significant main effect of condition, $F(2, 45) = 3.06$, $p < .06$. The p -values for the predicted interaction effect, $F(2, 45) = 2.80$, $p < .08$ and for the main effect of expectation, $F(1, 45) = 2.78$, $p < .10$, were slightly above the conventional .05 cutoff. The link between expectation and recommendation in the mental contrast condition was stronger than in the indulging condition, $t(45) = 1.98$, $p = .05$, and the dwelling condition, $t(45) = 2.28$, $p < .03$, which did not differ from each other, $t(45) = .21$,

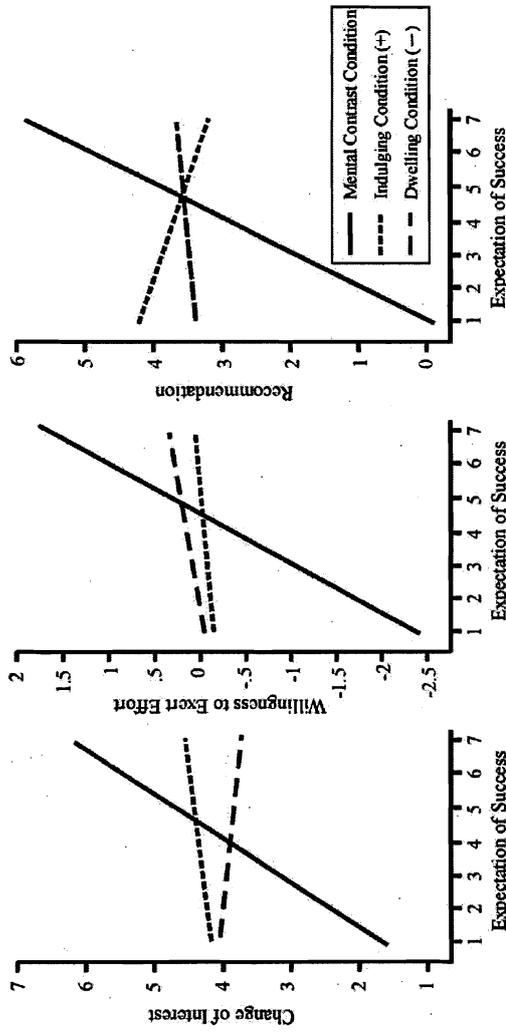


Fig. 1. Slopes depicting the link between expectation and change of interest (left), expectation and willingness to exert effort (middle), and expectation and recommendation (right) as a function of the three conditions of self-regulatory thought.

$p > .83$ (Table 2 and Fig. 1, right graph). Also, a significant difference emerged when the slope for the mental contrasting condition was compared to the slope for the other conditions combined, $t(47) = 2.45, p < .02$.

Changes in Expectation and Incentive Value

To ensure that the observed pattern of results was not related to changes in level of expectation or incentive value due to the different mental elaborations, we measured both expectation and incentive value a second time (i.e., when assessing the dependent variables). A one-way ANOVA showed that differences in mean level and homogeneity of incentive value from before to after mental elaborations did not vary between conditions, $F(2, 50) < 1.48, p > .23$, Levene's Test of Homogeneity of Variance, $F(2, 50) < .59, p > .55$. However, there were differences in mean level and homogeneity of expectation from before to after mental elaborations between the conditions, $F(2, 50) > 3.87, p < .03$, Levene's Test of Homogeneity of Variance, $F(2, 50) > 3.19, p = .05$. Specifically, mean levels of expectation decreased from before to after mental elaboration more in the indulging condition ($M = 4.71, SD = 1.16$ vs. $M = 3.41, SD = 1.33$) than in both the mental contrasting ($M = 4.75, SD = 1.00$ vs. $M = 4.38, SD = 1.03$) and the dwelling conditions ($M = 4.25, SD = 1.25$ vs. $M = 3.95, SD = 1.31$). The difference in homogeneity was due to lower variance in the mental contrast condition than in both the indulging and dwelling conditions. Importantly, however, the difference in mean level and homogeneity of expectation from before to after the manipulation cannot explain the results observed above.

Discussion

Participants who mentally contrasted their positive fantasies about benefiting from the training program with impeding reality committed themselves to the program according to their expectations of success, whereas participants who either indulged in these positive fantasies or dwelled on impeding reality disregarded their expectations in forming goal commitment. This pattern of results held true for all three indicators of commitment: interest in the program, willingness to exert effort, and recommendation of the program to others. Thus, whether commitment was measured by subjective indicators (interest, effort) or by raters (recommendation), the predicted pattern emerged. Specifically, when expectations were high, participants in the mental contrast condition were interested in the program and willing to invest time and money to participate in it, and they spoke positively about it. When expectations were low, mental contrasting led to little interest in the program, little willingness to invest time and money, and less favorable evaluations of the training program. To the contrary, expectations did not affect level

of interest, effort, or the communication of favorable messages about the program when participants either indulged in positive fantasies or dwelled on negative reality.

Participating students considered their outcome expectations (subjective probabilities that the program will turn out to be a success for them) after mental contrasting, but not after indulging and dwelling. Only after mental contrasting did they invest their most valuable resources, time and money, according to what they knew about the efficacy of the program.

So far, we have shown that mentally contrasting a positively-perceived future with negative aspects of impeding reality fosters successfully approaching the positive future. However, we did not yet address the question of whether or not mental contrasting can also be used to set goals to master a negatively-perceived future. Specifically, mental contrasting might be beneficial when it comes to committing to a goal geared at mastering unjustified future fears. There are many instances in which people entertain fantasies about a negatively-perceived future of which they are unjustly afraid. One example is prejudicial hostility and perceived threat of out-groups. Gaines and Reed (1995), as well as Corenblum and Stephan (2001), showed that prejudicial hostility led to unfounded fears of negative future interactions between members of different races, religions, and ethnicities. Another domain of previously studied unjustified fear is in the realm of HIV infection (Glantz, Mariner, & Annas, 1992), wherein it was shown that HIV-infected medical practitioners may be barred from practicing due to policy decisions based on fear rather than actual risk.

Fear reduction has been investigated in the context of panic disorder, posttraumatic stress disorder, phobias, and generalized anxiety disorders. The development of effective treatments has been attempted in all of these domains. Though these treatments may stem from different schools of psychotherapy (psychodynamic, Gestalt, and behavior therapy), they are largely based on the principle of exposure (for review, see Foa & Kozak, 1986). The benefits of exposure on fear reduction stem from people being confronted with the feared stimulus.

The present research uses the principle of exposure in combination with mental contrasting. We hypothesize that exposure to the feared stimulus in the context of negative fantasies will trigger goal commitment to approach the feared stimulus. However, this should only be true if the negative fantasies are contrasted with reflections on the positive reality that prevents or "stands in the way" of the feared consequences, as this relational construct has been found to lead to approach behavior (Oettingen et al., 2001). Mere fantasies about being exposed to the potential negative consequences of the future event (indulging) and mere reflections on impeding positive reality (dwelling) should lead to expectancy-independent goal commitment to approach the feared stimulus. 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 the fears in light of low expectations. Indulging in negative fantasies about a feared future or dwelling on positive impending reality, in contrast, should make people act towards their negatively-perceived future independently of respective expectations.

EXPERIMENT 2: TURNING NEGATIVE FANTASIES INTO SELF-IMPROVEMENT GOALS

Unfounded fears are not exclusively a clinical phenomenon (Brown & Barlow, 1995). They may also lead to maladaptive and dangerous behavior when they are directed toward members of an out-group. Susan Fiske discussed the implications of harboring unfounded fears about out-group members (e.g., "they might make me suffer economically"), and how such bias underlies aggression in the form of hate crimes (Fiske, 2002).

Participants in the present study were high school students, and their fantasies addressed the fear of members of an out-group. Specifically, we investigated the effects of mental contrasting, indulging, and dwelling on the participating high school students' goal commitment to integrate immigrants to their neighborhood. The goal thus pertained to self-improvement by strengthening pro-social behavior toward members of an out-group.

Participants in an ethnically homogeneous district of East Berlin called Weißensee were asked to imagine that foreigners were going to move into hostels that were to be established in their neighborhood. Previous work has shown that homogeneous groups are more prejudiced and authoritarian than heterogeneous groups (Yinon, 1975). Therefore, the use of a homogeneous sample of high school students created a situation in which prejudice against out-group members (in the present case foreigners) may result in negative fantasies about the influx of foreigners. Our study attempted to understand how these negative fantasies can stir goal commitments to approach and master the negatively-perceived future.

Method

Participants and Design

Participants were 158 adolescents from three high schools in Weißensee. They had a mean age of 15.80 years ($SD = .58$), ranging from 15 to 17 years. Students were tested in their classrooms with their teachers absent and were thanked with a surprise gift. There were three experimental conditions: a negative fantasy-positive reality contrast condition (mental contrast condition), a fantasy about the negative future only condition (indulging condition), and a reflection on positive reality only condition (dwelling condition). We also assessed expectations to test for the predicted expectation \times condition interaction effect.

Materials and Procedure

A letter to students explained the details of the study, that participation was voluntary, and that their answers would remain confidential. Because the students were younger than 18, their parents had to sign a consent form. Participants were also informed that two weeks after the experiment they would be asked to fill out a very short follow-up questionnaire. To guarantee anonymity, they were requested to write down a personal code instead of their names, to note this code, and to keep it until they had answered the follow-up questionnaire two weeks later. The cover story explained that the study was part of a larger research program on everyday concerns of adolescents. The present study was said to focus on relations between German and foreign adolescents, as in the near future immigrants and other people seeking asylum might move into the neighborhood. Participants read:

There are a lot of foreign people living in Berlin, such as immigrants, persons seeking political asylum, or civil war refugees. The number of foreigners residing within the several districts varies, with Weißensee as the district where the smallest number of foreigners reside. Therefore, in the future, immigrants and people seeking asylum may primarily be placed in Weißensee, and several hostels for refugees may be established in Weißensee within the next year. This study will find out if the citizens of Weißensee are willing to accept foreigners in their district. We are especially interested in adolescents' thoughts and beliefs.

We then assessed participants' expectation and incentive value of helping to integrate foreigners in their district. Specifically, we asked, "If several hostels for refugees were established in Weißensee within the next year, how likely do you think it is that you would help to integrate the foreigners in Weißensee?" and "If several hostels for refugees were established in Weißensee within the next year, how detrimental would it be for you if you had some negative experiences with these foreigners?". The five-point response scales ranged from 1 (*not at all likely*) to 5 (*very likely*) and from 1 (*not at all detrimental*) to 5 (*very detrimental*), respectively.

To induce negative fantasies about a future in which hostels for immigrants and refugees were created in the neighborhood, all participants read the following text:

Please imagine that in Weißensee several hostels for immigrants and people seeking political asylum have just been established. Now think about what negative consequences this would have for you personally. How might things for you change for the worse? What repercussions might you suffer from? How might this interfere with your everyday life? Please give your images, fantasies, and thoughts free reign. Then describe these negative thoughts and images about the future in writing on the following page. If you need more space, please continue on the back of the page.

To induce images about the impending positive reality, participants were confronted with 12 statements, fabricated by us, supposedly stemming from interviews with adolescents who indeed had experienced foreigners moving into their

neighborhood. These statements depicted positive interactions between the interviewees and the foreigners. Three exemplary statements are: "Playing soccer with these guys was just great. Finally, we had strong and fair opponents. (Lars G., 16 years)," "When arriving at the new apartment with our furniture, two foreigners volunteered to help us to carry the heavy stuff upstairs (Mike S., 16 years and Carsten S., 16 years)," and "This was the first time that I could talk to a girl—to Nurdan—about everything. (Stephan H., 16 years)".

As in Study 1, we induced the three conditions by varying the point of view from which participants had to work through the statements. In the mental contrast condition, participants were asked, "What thoughts and images come to your mind when reading these statements? Please give your thoughts and images free reign and describe them in detail." Participants were then asked to write down their thoughts and images. This way, the positive reality was forced upon participants' thoughts.

In both the negative fantasy condition (indulging condition) and the positive reality condition (dwelling condition), participants received the same basic instructions. However, they were then given additional instructions to ensure that they would either trivialize the adolescents' statements or take them particularly seriously, respectively. The additional instructions in the indulging condition read: "What problem does the interviewed person want to conceal? Please describe your thoughts!" Thus the positive reality was disparaged and participants were only focusing on the negative future. The additional instructions in the dwelling condition were, "Please describe your thoughts that speak for the notion that you would get along with the foreigners in Weißensee!" Thus, participants' thoughts were tightly linked to the positive reality.

Dependent Variables

Two weeks after the experiment, we approached participants again in their classrooms where they completed a short follow-up questionnaire. Tolerance was measured by the question: "If several hostels for refugees were established in Weißensee within the next year, how harmful would it be to you?" The five-point response scale reached from 1 (*very harmful*) to 5 (*not at all harmful*).

Participants' willingness to exert effort was assessed by two items pertaining to the effort and time the students wanted to invest in order to participate in an initiative to edit a journal about and in collaboration with foreign youth. The journal was supposed to discuss the opportunities and problems in establishing relationships between adolescents in Weißensee and foreign adolescents. The first question assessed the interest of the students in reading such a newspaper: "How interested would you be in reading such a journal?" The response scale ranged from 1 (*not at all interested*) to 5 (*very interested*). The second question pertained to the effort participants were willing to exert in actually organizing and writing

for such a journal: "How many hours per week would you be willing to spend to collaborate in this journal initiative?" The response scale ranged from zero to four hours. Due to the use of different response scales, we z-transformed the items, which showed adequate internal consistency (Cronbach's $\alpha = .67$).

Finally, we measured the number of plans that participants generated when answering the following question in writing: "Please think about what it would be like to live with the foreign adolescents in your district. Give your thoughts and images free reign, and describe all these thoughts and images. If you need more space to write, please use the back page." Two independent raters blind to the hypotheses counted all mental simulations in the "if-then" format (Gollwitzer, 1990) that either combined situation with situation, behavior with behavior, situation with behavior, or behavior with situation. Inter-rater reliability was high ($r = .96$). If-then plans are highly predictive of successful goal striving and goal attainment (Gollwitzer & Sheeran, 2006). Examples of participants' if-then plans were, "If I meet one of the foreign youth on the way to school, I will ask her whether I may join her" and "If a new student has problems with the German language, I will help him out"

Twenty-nine students (18.4% of the sample; nine in the mental contrast condition, ten in the negative future only condition, and ten in the positive reality only condition) did not complete their follow-up questionnaire. These students, who were excluded from the analysis, did not differ in their expectation or incentive value from those who completed the follow-up questionnaire, $F_s(1, 157) < .64$, $ps > .23$, Levene's Test of Homogeneity of Variance, $F_s(1, 157) < .02$, $ps > .89$. As a result, the analyses were based on 129 participants (81.6% of the original sample), except for the dependent variable "number of plans," which was based on 127 participants because two participants (1.6% of the sample) failed to complete this item.

After filling out all of the questions, students were debriefed. We explained the experimental design, procedure, hypotheses, and purpose of the study. Students received our phone numbers and were encouraged to contact us at any time with questions or concerns.

Results

Descriptive Analyses

Mean expectation of helping to integrate foreigners in the district was below the midpoint of the 5-point scale ($M = 1.94$, $SD = 1.03$), whereas the mean for incentive value was above the midpoint of the 5-point scale ($M = 3.57$, $SD = 1.20$). Expectation and incentive value were not significantly correlated ($r = .07$, $p < .46$). Tolerance correlated with willingness to exert effort and number of plans. Willingness to exert effort correlated with number of plans (Table III). We statistically

Table III. Study 2: Means, Standard Deviations, and Correlations Among Dependent Variables ($n = 129$)

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Tolerance	2.32	1.26	—	.48***	.35***
2. Willingness to exert effort	.01	.87	—	—	.37***
Interest	2.69	1.29			
Time (hours/week)	.87	1.19			
3. Number of plans	.80	1.07	—	—	—

* $p < .05$; ** $p < .01$; *** $p < .001$.

controlled for initial incentive value by running each analysis with incentive value as a covariate.

Tolerance

As in Study 1, we used a General Linear Model to test our hypotheses. In this case, tolerance was the dependent variable, and condition, expectation, condition by expectation, and incentive value were the independent variables, all simultaneously entered into the equation. There were main effects of both condition and expectation, $F(2, 122) = 4.29$, $p < .02$, and $F(1, 122) = 31.63$, $p < .001$, as well as the predicted interaction effect, $F(2, 122) = 5.39$, $p < .01$. Predicted values for the condition by expectation interaction showed that the link between expectation and tolerance was stronger in the mental contrast condition than in the indulging (negative fantasy only) condition, $t(122) = 3.08$, $p < .004$, and the dwelling (positive reality only) condition, $t(122) = 2.24$, $p < .03$; the latter two conditions did not differ from each other, $t(122) = .30$, $p > .76$ (Table IV and Fig. 2, left graph).

Willingness to Exert Effort

We observed main effects of both condition and expectation, $F(2, 122) = 3.10$, $p < .05$, and $F(1, 122) = 12.87$, $p < .001$, as well as the predicted interaction effect,

Table IV. Study 2: Indicators of Goal Commitment as Predicted by Expectation

Variable	Contrast condition ($n = 45$)			Indulging condition ($n = 50$)			Dwelling condition ($n = 34$)		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Tolerance	.95	.14	.78***	.31	.16	.26	.39	.21	.32
Willingness to exert effort	.50	.10	.52***	.11	.12	.12	.16	.14	.17
Number of plans	.43	.13	.41**	-.23	.15	-.22	.22	.22	.21

* $p < .05$; ** $p < .01$; *** $p < .001$.

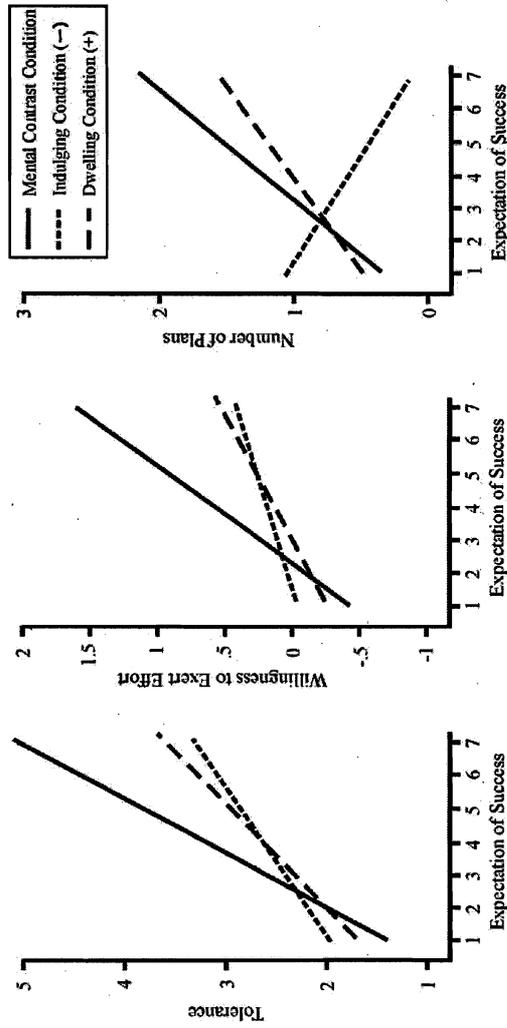


Fig. 2. Slopes depicting the link between expectation and tolerance (left), expectation and willingness to exert effort (middle), and expectation and number of plans (right) as a function of the three conditions of self-regulatory thought.

$F(2, 122) = 3.51, p < .04$. Thus, the link between expectation and willingness to exert effort was stronger in the mental contrast condition than in the indulging condition, $t(122) = 2.48, p < .02$, and tended to be stronger than in the dwelling condition, $t(122) = 1.82, p < .08$. The indulging and dwelling conditions did not differ from each other, $t(122) = .22, p > .83$ (Table IV and Fig. 2, middle graph). When the slope of expectation for the mental contrast condition was compared to the slopes for the other conditions combined, the difference was significant, $t(124) = 2.66, p < .01$.

Number of Plans

There was a main effect of condition, $F(2, 120) = 4.25, p < .02$, as well as the predicted interaction effect, $F(2, 120) = 5.30, p < .01$, but no main effect of expectation, $F(1, 120) = 2.26, p > .13$. Thus, the link between expectation and number of plans was stronger in the mental contrast condition than in the indulging condition, $t(120) = 3.22, p < .005$, but not stronger than in the dwelling condition, $t(120) = .87, p > .38$. The indulging and dwelling conditions did not differ from each other, $t(120) = 1.78, p > .07$ (Table IV and Fig. 2, right graph). Also, when the expectation slope for the mental contrast condition was compared to the slopes for the other conditions combined, the difference was significant, $t(122) = 2.72, p < .01$.

Gender and Changes in Expectation and Incentive Value

Gender did not qualify the interaction effects between condition and expectation: tolerance, $F(3, 117) = .99, p > .39$; willingness to exert effort, $F(3, 117) = .30, p > .82$; number of plans, $F(3, 117) = 2.23, p < .09$. Thus, the findings are valid for men as well as for women. Main effects of gender emerged for willingness to exert effort, $F(1, 117) = 3.99, p < .05$, and for number of plans, $F(1, 117) = 4.96, p < .03$, with women scoring higher than men on both variables.

Further, similar to the previous study, we measured both expectation and incentive value a second time (i.e., when assessing the dependent variables), in order to ensure that the observed pattern of results was not related to a change in level of expectation or incentive value due to the different mental elaborations. One-way ANOVAs showed that differences in mean level of expectation and incentive value from before to after the mental elaborations did not vary between conditions, $F_s(2, 126) < 1.69, p_s > .18$, nor did the homogeneity of incentive value vary, Levene's Test of Homogeneity of Variance, $F(2, 126) < .19, p > .83$. However, there was variation in homogeneity between conditions concerning expectation from before to after mental elaboration, Levene's Test of Homogeneity of Variance, $F(2, 126) = 4.36, p < .02$. Specifically, the variance in the indulging condition was greater than in the other conditions.

Discussion

Study 2 reveals that mental contrasting helps to overcome unjustified fears about a negatively-perceived future when expectancies for success are high. Contrasting students were more tolerant, were more willing to exert effort and spend time toward integrating the foreigners, and they created more plans to achieve this than those who indulged and dwelled. We assessed these variables two weeks after the experiment by participants' self-report (tolerance), by observing participants' choices about getting involved (willingness to exert effort and contribute time), and by content analyses of participants' thoughts and images of what it would be like to live with the foreign youth (number of plans).

The present study specifies self-regulatory strategies people can use to rid themselves of their unjustified fears. Specifically, when participants mentally contrasted their fantasies about negative consequences of given future events with aspects of reality that stand in the way of these negative consequences actually occurring, they held out against their fearful fantasies and boldly approached the negatively-valenced consequences of the future events. However, this was only true if contrasting participants expected to master their fears. If they had low expectations of mastery, they gave in to their fears. This may remind the reader that persuasion based on fear appeals is only effective when the targeted individuals possess the knowledge of how to perform the behavior in question (Leventhal, 1970). Still, in the present study, it is not simply the combination of fear and knowledge (high expectations) that is crucial (note that the indulging group did not show heightened efforts to integrate the foreigners); rather, it took the mental contrasting of future and reality to make participants' knowledge fruitful for goal setting and subsequent constructive behavior.

Participants in the mental contrasting group, but not those in the indulging and dwelling groups, utilized their expectations in confronting the negative future. Even when the expectations were high, indulging and dwelling participants showed little tolerance, little willingness to help, and 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 towards members of a feared out-group.

GENERAL DISCUSSION

Mental contrasting produced expectancy-dependent goal commitments regardless of whether fantasies pertained to a positively- or a negatively-perceived future. In the present two studies, mental contrasting led to the predicted goal commitments geared at self-improvement. In the first study, mental contrasting of fantasies about a positively-perceived future committed high-expectancy

participants to enrolling in a training program geared at improving professional and personal skills. In the second study, mental contrasting of a negatively-perceived future committed high-expectancy participants to integrating foreigners into their neighborhood. In both studies, we used a new reinterpretation paradigm to manipulate the three modes of self-regulatory thought known to affect the emergence of goal commitment.

In Study 1, we induced mental contrasting by asking participants to fantasize about a desired future and then to generate associations to statements illustrating impeding reality. Participants in the indulging group were encouraged to devalue the impeding reality and participants in the dwelling group were forced to fully focus on impeding reality. As predicted, participants in the mental contrast group showed expectancy-dependent goal commitment, whereas those in the indulging and dwelling groups showed moderate and expectancy-independent goal commitments.

We measured goal commitment by self-report questions as well as ratings of independent observers. We assessed motivational variables (i.e., interest in joining the training and willingness to invest time and money), as well as behavioral variables (i.e., recommendations of the program to others, content analyzed in terms of expressed favorability to the program). Finally, Study 1 adds to past research by showing that mental contrasting not only makes efficacy expectations and generalized expectations fruitful for action, but also does the same for outcome expectations (i.e., expectations that the program will yield personal benefits). In sum, Study 1 shows that mental contrasting can be used to turn positive fantasies about a desired future into goal commitments geared at self-improvement.

Mental contrasting can also be used to turn negative fantasies about an undesired future into goal commitments geared towards self-improvement. In Study 2, contrasting negative fantasies about a threatening future with positive reflections on impeding reality produced expectancy-dependent goal commitment to approach the impending threat. In addition, those participants who were encouraged to reinterpret the positive impeding reality (the indulging in negative fantasies group) and those who were instructed to fully focus on the positive impeding reality (the dwelling on positive reality group) evidenced goal commitments that were independent of their expectations.

It does not seem to matter, therefore, whether fantasies pertain to positive or negative futures. The effects on goal commitment of mental contrasting, indulging, and dwelling stay the same. Seen from a problem-solving perspective (Newell & Simon, 1972), indulging and dwelling mean that the internal subjective representation (i.e., the person's problem space) differs from the objective problem (i.e., realizing one's positively-perceived fantasies by attending to the negative impediments in the present reality or dispelling one's negatively-perceived fantasies by attending to the positive impediments in the present reality). As only the future or only the reality is considered, the future does not appear as something to be achieved nor do the present obstacles appear as something to which

to attend. Relevant expectations only influence goal commitments to realize the positive fantasies or to dispel the negative fantasies if both future and reality are considered.

Mental Contrasting Connects the Past to the Present

The present research indicates that mental contrasting of positive fantasies as well as negative fantasies can be used to create goal commitments that are based on relevant expectations. Expectations may be based on experiences of the past and on information provided by the context (Bandura, 1977a,b; Mischel, 1973). Therefore, mental contrasting can be considered a self-regulatory tool that puts a person in touch with her past experiences and knowledge. If the past gives reason for confidence, contrasting fantasies about the future helps to approach the future. Regardless of whether the future is desired or feared, such approach behavior will result in taking an active stance toward shaping one's own future, giving the opportunity for growth and personal development. If the past does not give reason for confidence, mental contrasting leads to shying away from approaching the future in an active way. People neither realize their positive fantasies nor do they dispel their negative fantasies.

Applied Implications

The key features of fear and anxiety disorders are avoidance of situations that evoke the arousal of fear and anxiety. Therefore, 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 enabling people to become active whenever threatening thoughts emerge will attenuate the involuntary passive responses to these fear-arousing thoughts. Contrasting negative, threatening fantasies with reflections on positive impeding reality might be such a strategy because it helps people to actively cope with the fear-arousing stimuli.

People should benefit from mental contrasting particularly when they nourish unjustified fears because mentally contrasting the feared future with impeding reality will clarify that the fears are unjustified. However, mental contrasting should also be beneficial when fears are justified, because it will clarify that the fears indeed need to be taken seriously. These considerations have educational implications. Educators of the adolescents in Study 2, for example, might want to be aware of whether their students entertain high or low confidence toward helping foreigners integrate. For those high in confidence, mental contrasting seems to be the right self-regulatory strategy. For those low in confidence, however, an educator might want to first strengthen confidence through boosting respective performance (Bandura, 1977a,b), and only then teach mental contrasting strategies.

Mental contrasting as a meta-cognitive strategy can indeed be easily taught in the context of short interventions (Oettingen et al., 2005, Study 5). Since unjustified

fears (e.g., toward members of an out-group) are readily developed in youth, intervention studies teaching mental contrasting in order to master fantasies about negatively-perceived futures might be particularly helpful in that age group. Such intervention studies might also be beneficial in the health domain. As previously discussed, Glantz et al. (1992) showed that fear leads to unjustified discrimination against those with HIV infection. Teaching mental contrasting as a meta-cognitive strategy might thus help health care providers, relatives, and friends of HIV patients to overcome their unjustified fears about HIV infection.

Finally, the question arises of whether or not there are everyday situations in which people particularly benefit from mental contrasting. Obviously, people benefit from mental contrasting whenever a desired future can likely be reached or a threatening future can likely be mastered. Still, mental contrasting should also be beneficial in light of low feasibility, because it allows effective disengagement from trying to master unpromising futures. For example, a person might easily disengage from approaching a certain desired future if a more feasible alternative future is handy (e.g., disengagement from trying to get into medical school in favor of applying to a nursing program), and a person might easily disengage from confronting an ominous threat if mastering a more manageable threat is possible (e.g., disengagement from having surgery in favor of a less invasive therapy). One has to keep in mind, however, that in situations where one can neither master nor disengage from realizing positive futures or mastering negative futures, indulging and dwelling should be the more beneficial strategies. This is because indulging and dwelling, as conceptualized in the present work, fail to focus a person on the low chances of success (to reach the positive future and to master the negative future). For example, a person who is confronted with the diagnosis of a terminal illness should benefit from indulging in hopeful fantasies about living through the next years. Mental contrasting, in this case, would only focus her on the low prospects, and thus would lead her to disengage from life. Indulging, to the contrary, should prevent taking bleak prospects into consideration and thus should foster the development of unnoticed resources and potentials.

CONCLUSION

Two experimental studies described self-regulatory strategies that cause fantasies and expectations to corroborate in forming strong goal commitments. Specifically, fantasies made expectations relevant for goal commitment if the fantasies were contrasted with reflections on impeding reality. Among participants who either indulged in future fantasies or dwelled on the status quo, expectations stayed irrelevant for goal commitment. Thus, the present research specified indulging and dwelling as moderators for the relation between expectations and goal commitment. As expectations are based on a person's experiences in the past, mental contrasting can be seen as a self-regulation strategy that tunes one's behavior to

one's personal history. Finally, the present research showed that mental contrasting makes people consider expectations in forming goal commitments, irrespective of whether the fantasies pertain to a positively-perceived or a negatively-perceived future.

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