Abstract and Keywords

Indulging in positive fantasies about a desired future helps people feel accomplished and happy. At the same time, it hurts people with implementing the wished-for future. It leads to low energy, low effort, and little success. Indulging in positive future fantasies also predicts high depressive affect over time, partially mediated by low effort and little success. However, when juxtaposing the positive future fantasies with a clear sense of reality (mental contrasting), people understand what they want and can achieve, and take the necessary steps to fulfill their wishes. People are particularly effective in fulfilling their wishes when they combine mental contrasting with implementation intentions (MCII). The chapter concludes by suggesting that MCII may also be used to snap out of excessively positive affective states.

Keywords: positive future thinking, fantasy, mental contrasting, implementation intentions, self-regulation, behavior change, MCII, WOOP

Introduction

“I will be happy when the election is over, and Hillary Clinton finally will be President. I have always wanted a woman leading the country. I want Hillary to be the model for the next generation, to be the person whom boys and girls admire and respect. I want her to become the leader of the country because she represents my values and because she will push for respect and fairness in all strata of the American society!”

(Anonymous, November 5, 2016).

Many devotees of the democratic candidate in the 2016 US presidential election could not wait until the campaign was over. They already saw the path that Hillary Clinton would take to defend the liberal values of care and fairness (Graham, Haidt, & Nosek, 2009; Haidt & Joseph, 2004). They vividly fantasized about Hillary Clinton’s victory, shunning any thoughts that might endanger their dream. The mental images were satisfying and
felt soothing and positive, dispersing the threatening possibility that the election might end differently. The fantasies about Hillary Clinton’s victory made people relaxed, even a little proud, that one’s own candidate was successful in beating the outdated world of conservatism and manhood. Eventually, November 9, 2016, came, and the outcome was shockingly different.

Why the shock? In the aftermath of the election, people acknowledged a variety of signs that had forebode the victory of Hillary Clinton’s opponent, Donald J. Trump. But, at the time, the thought of him winning the election was unpleasant and disturbing, while the thought of Hillary Clinton winning was much more pleasant and soothing. Why then should the person in the opening not indulge in pleasant and soothing thoughts about the election outcome and be relaxed and happy? Are we not told from all sides that positive thinking will help make our wishes come true?

The answer to the question of why people may not want to indulge in thoughts about a happy future comes from a series of studies showing that positive future thoughts and images make people feel good but are detrimental for implementing the desired future in reality. In fact, positive future fantasies and daydreams lower the exertion of effort and thereby the attainment of success. The findings hold across various life domains, such as academic and professional domains, interpersonal and prosocial domains, and health and fitness domains. They can be measured by self-report, rater observations, and physical parameters (e.g., weight loss) and persist over periods of up to 2 years. One study showed that the more university graduates positively fantasized about their success in transitioning into work life, the less successful they were in actualizing that fantasy.

The present chapter begins by discussing the sources of positive future thoughts and images (i.e., positive fantasies). It presents research that identified people’s needs as one pivotal determinant of positive future fantasies. We then rethink the postulate that positive thinking has only positive consequences and elaborate on the deleterious effects of positive future thinking. We report studies speaking to the affective consequences of positive fantasies, showing that concurrently they go along with low depressive affect, but longitudinally, they predict high depressive affect. We then discuss research that identified mental attainment and premature relaxation as two important processes that mediate the problematic effects of positive future fantasies.

The research on positive future thought leads to the question of whether there is a mental strategy that not only starts out with positive fantasies, but also provides the energy needed for wish fulfillment. We identify mental contrasting of the future and present reality as such a strategy and describe how it can help people prioritize their wishes and fulfill them. Adding implementation intentions or if-then plans to mental contrasting (mental contrasting with implementation intentions, MCII; or colloquially wish, outcome, obstacle, plan, WOOP) has proven to additionally help people manage their everyday lives and long-term development. The final part of the chapter discusses how WOOP can be used to help people regulate excessive positive affect.
Positive Future Fantasies

Where Do Positive Future Fantasies Come From: Needs

Studies investigating the sources of positive future fantasies point to people’s needs. H. B. Kappes, Schwörer, and Oettingen (2012) found that the stronger a person’s needs were, the more positive were the person’s fantasies about fulfilling them. The same pattern was observed when the strength of needs was experimentally varied. Findings emerged for physiological and for psychological needs, for needs that pertained to different themes such as need for water, need for meaningful work, need for interpersonal relationships, and need for influencing others. Needs stem from a state of deprivation, which triggers behavior to remedy the deprivation (Hull, 1943). Thus, one might argue that one function of positive future fantasies is to end a state of deprivation by satisfying a need.

Needs and Fantasies

Needs and the respective drives to fulfill those needs should make people attend to stimuli that potentially end the state of deprivation. Aarts, Dijksterhuis, and De Vries (2001) tested this hypothesis regarding a physiological need: Participants lacking water were quicker in recognizing and recalling stimuli related to drinking water (e.g., a glass, a cup) than participants who did not lack water. But, what if the present situation precludes the presence of stimuli that potentially satisfy the need? If need satisfaction is not immediately possible, needs may trigger thoughts and images about stimuli related to satisfying the need. In fact, needs are expressed in people’s free thoughts and fantasies. Researchers have experimentally induced people’s needs or measured them by self-report and then content analyzed the fantasies that participants generated in response to relevant ambiguous stimuli (e.g., ambiguous pictures, ambiguous verbal prompts). For example, after being physiologically deprived (e.g., lack of food) or psychologically deprived (e.g., lack of challenging tasks), people generated fantasies that pertained to satisfying the respective needs: searching and consuming food and searching and excelling in achievement (Atkinson & McClelland, 1948; McClelland, Clark, Rody, & Atkinson, 1949). In another study, male participants entertaining a high (vs. low) need for power fantasized more about fictional persons pursuing status and social influence (Skolnick, 1966; Veroff, 1957). In sum, both situationally induced and chronic states of deprivation (with the respective needs and drives) instigate fantasies related to satisfying the state of deprivation.

Needs and Positive Fantasies

The described research has investigated the extent to which needs determine the content that appears in people’s fantasies. However, it is still unclear whether needs also determine the valence of people’s fantasies. If needs function to keep people aligned to satisfy the respective state of deprivation in times when the need-satisfying stimuli are absent, we can assume that needs should trigger positive idealized fantasies about satisfying the deprivation.
This pattern of results is exactly what H. B. Kappes, Schwörer, & Oettingen (2012) found. Fantasies in response to aroused needs pertained to an idealized positive future. These fantasies depicted need satisfaction in a happy and frictionless way. People mentally enjoyed the satisfying future in the here and now. Disappointingly, however, when need satisfaction is cumbersome and effortful, mere positive fantasies lead to no actual satisfaction of a person’s needs. Quite to the contrary, positive fantasies and daydreams hurt effort and lowered the chances of successfully reaching the desired need-satisfying future (Oettingen & Mayer, 2002). Because such fantasies can suggest to people that the desired future is already accomplished, they lead people to feel relaxed and to lower their energy and effort needed to reach the desired future in actuality (H. B. Kappes & Oettingen, 2011; Oettingen & Mayer, 2002).

Where Do Positive Future Fantasies Lead: Low Effort and Success

Evidence

Contrary to what many self-help books hold (e.g., Byrne, 2006; Canfield, Hansen, & Newmark, 2010), research has shown that the more positively people fantasize about their future successes, the less effort they expend in pursuing these successes and the less successful they will be. In one study, the more positively university graduates fantasized about their impending transition into work life, the fewer job applications they had sent out, the fewer dollars they had earned 2 years later, and the fewer job offers they had received overall (Oettingen & Mayer, 2002). In a study from the health domain, the more positively women who had enrolled in a diet program imagined themselves to be successful in the program, the fewer pounds they shed 3 months and 1 year later (Oettingen & Wadden, 1991). The same pattern of results was found for university students imagining good grades in their exams (H. B. Kappes, Oettingen, & Mayer, 2012; Oettingen & Mayer, 2002), in university students fantasizing about getting together with a person they had a crush on, and in the elderly fantasizing about a smooth recovery after their impending hip replacement surgery (Oettingen & Mayer, 2002).

These results are supported by research showing that outcome rather than process simulations led to low planning and little success in the academic domains (Taylor, Pham, Rivkin, & Armor, 1998). Finally, research on counterfactual thought further supports the problematic effects of positive future fantasies. Upward comparisons, whether social or temporal, in the assimilation or reflection mode (vs. the contrast or evaluation mode) led to less effortful action and less successful performance (Markman & McMullen, 2003).

Assuming that one function of positive fantasies is to help people satisfy their needs when they cannot be immediately satisfied in the present situation, it comes as no surprise that they do not lead to effortful action and successful performance. Indeed, the more positively students fantasized about getting together with a person they liked, the less actively they approached their crush; instead, they patiently waited for the crush to approach them. By not confronting the person they had a crush on, they could avoid obtaining a clear yes or no response from their crushee. Apparently, positive fantasies keep people waiting instead of realizing their wishes (Lewin, 1926). By seducing people to mentally
enjoy the positive future, positive fantasies sap people’s energy and hinder them from actively reaching out for the attainment of the positive future.

**Processes**

Asking why positive fantasies prevent wish fulfillment, Oettingen and Mayer (2002) had argued that positively fantasizing about a desired future seduces people to feel and act as if they had already reached the desired future, sapping the energy needed for effortful action.

**Mental Attainment**

To investigate these assumptions, in two studies (Sciarappo, Norton, Oettingen, & Gollwitzer, 2015) university students were provided with prompts to positively fantasize about a hypothetical scenario: being rewarded a large sum of money. Participants in the two control groups were instructed to either generate fantasies in which they had to question the attractiveness of being rewarded or they did not receive any fantasy instructions. Thereafter, all participants, by answering a series of questions, had to decide between a small amount of money they may receive immediately versus a large amount that they could receive only later. The results showed that only the positive fantasy group was ready to wait for the larger amount provided later in time. In the literature, this pattern of results has been found in people who are comparatively more satiated with money (e.g., Green, Myerson, Lichtman, Rosen, & Fry, 1996). Apparently, positive fantasies permitted participants (p. 599) to prematurely attain their wished-for future in their mind’s eye. Thus, they did not mind whether they obtained the reward immediately or later. The same pattern of results was observed in a different set of studies that assessed nonconscious affect as an indicator for mental attainment of the desired future (H. B. Kappes, A. Kappes, & Oettingen, 2015).

**Low Energization**

Implicit and explicit mental attainment of the desired future should relax people. However, it is high energization that is the prerequisite of successfully going the cumbersome way to fantasy realization (Brehm & Self, 1989; Oettingen, 2012). Thus, following Oettingen and Mayer (2002), who postulated that positive fantasies will relax people instead of energize them, in four experiments H. B. Kappes and Oettingen (2011) found that inducing positive fantasies sapped energy. In one study, women who were induced to positively fantasize (vs. question) how beautiful they would look in pretty high heels were less energized, as assessed by their systolic blood pressure (SBP; Wright, 1996). Two more experiments using self-report measures of energy replicated this pattern of results. In a final study, positive fantasies stemming from situationally aroused needs were even more relaxing than those related to needs that were not aroused (i.e., need for water and need for achievement).

**Feeling Overly Challenged**

When tasks are easy to solve, people do not need much mental energy or physical energy. Thus, if tasks are easy, the relaxing consequences of positive fantasies should pose no
problem for fantasy realization. However, when tasks are difficult to solve and when solving them demands energy and effort, then positive fantasies are a problem. When charities ask people to spend money or time for charitable purposes, for instance, they often prompt potential donors to engage in positive fantasies about the generosity of giving and what a difference the donors will make for helping others. According to the findings described previously, positive fantasies about being a successful and charitable person and about how much one’s gift will help others should hurt, rather than help, in making a person generous. Indeed, H. B. Kappes, Sharma, and Oettingen (2013) observed that positive fantasies did not make a difference in the generosity of people who had been asked to contribute to a charitable agency when giving was easy (low resources were demanded), but it did make a difference when giving was more difficult and demanding (high resources were demanded). Three experiments showed that positive fantasies about donating (vs. engaging in other thoughts, e.g., factual thoughts) caused university students to be more reluctant to spend time, energy, or money when many resources were asked for, but not when few resources were asked for. Supporting the hypotheses by Oettingen and Mayer (2002), positive fantasies (vs. control thoughts) led students to interpret the asking for many resources as overly demanding, which was not the case when asking for few resources. These findings suggest that positive fantasies impede charitable giving, which is especially true when giving means spending valuable commodities such as time, energy, or money.

Positive Future Fantasies and Affect

Bandage and Risk

Many of the self-help books not only erroneously assume that positive future thinking leads to effortful action and success but also erroneously claim that positive thinking guards against depression. Positive fantasies about the future do in fact go along with more positive affect and fewer symptoms of depression when measured concurrently. When measured over time, however, they predict less positive affect and increased symptoms of depression (as assessed by the Children’s Depression Inventory [CDI], the Center for Epidemiologic Studies Depression Scale [CES-D], or the Beck Depression Inventory [BDI]).

This pattern of results was found in four studies in which positive fantasies were measured by semiprojective questionnaires and daily diaries and for time periods stretching up to 7 months. Analyzing the mediating processes, one study with university students found that academic setbacks mediated the predictive relation between positive fantasies and high depressive symptoms over 3 weeks (Oettingen, Mayer, & Portnow, 2016). Thus, positive fantasies worked as both a bandage in the short term (low depressive affect) and a risk factor in the long run (high depressive affect), at least partly caused by low effort and little success. Previous work assessing the positivity of fantasies via self-report measures supported the notion that positive future fantasies can be used in the short term to lighten concurrent symptoms of depression (Caprara et al., 2012; Golding & Singer, 1983).
Further research was in line with these findings. Positive thinking focusing on the self not only was related to fewer suicidal thoughts following a previous suicide attempt, but also was related to a higher likelihood of another suicide attempt over the following 15 months (O’Connor, Smyth, & Williams, 2015). A study with the elderly showed that the prospect of future well-being and happiness went along with decreases in actual health and longevity (Lang, Weiss, Gerstorf, & Wagner, 2013). Apparently, seeing the future self as happy does not bear out in real happiness later. Maybe the reason for the later unhappiness is that anticipating a happy future does not prepare for the obstacles that are impending in old age. Thus, people who foresee happiness may be more disappointed when the difficulties start arising (Cheng, Fung, & Chan, 2009). Indeed, law students who imagined having done very well while waiting for their results on the bar exam were more disappointed and distraught when they did badly, and they were less happy when they actually did well (Sweeny, Reynolds, Falkenstein, Andrews, & Dooley, 2016). In addition, when receiving bad news, they did not have the energy to find remedies for their failure.

Research on stress and stress avoidance is in line with the reported results as well. Avoidant coping of stress is linked to relatively positive affect and low depression at the moment but precedes more depressive affect over time (Holahan, Moos, Holahan, Brennan, & Schutte, 2005). People who deny stressors or use avoidant coping may exert little effort and experience low success, which in turn should be a risk factor for low positive mood and depressive affect over time. Positive fantasies and avoidant coping alike are strategies of evasion: They work as a bandage, but only until real life hits.

**Regulation of Risk**

To remedy the problematic consequences of positive fantasies about the future, in the second part of our chapter we ask how we can regulate the detrimental effects of positive fantasies on effort and success and on affect and depressive symptoms. We introduce a respective self-regulation strategy, called mental contrasting of future and reality, which takes positive fantasies about the future as its starting point. When engaging in mental contrasting, people juxtapose positive fantasies about the future with their main inner obstacle to attaining the positive future. Thus, people engaged in mental contrasting find both the direction to act (via the future fantasies) and the energy needed to go the long way to fantasy realization (via juxtaposing the obstacles of reality to the positive fantasies; Oettingen, 2000, 2012).

Mental contrasting enables effort and actual success and thus provides the behavioral basis from which positive affect emerges, a positive affect grounded in experience rather than in need-based fantasies (H. B. Kappes, Schwörer, et al., 2012). Such positive affect should therefore be more solid and sustainable than positive affect that is built on positive future fantasies. Positive future fantasies are a short-term bandage, glossing over the fact that the real work is still ahead.
Positive Future Fantasies: Summary

Positive future fantasies originate from a person’s unsatisfied needs that are due to situational or chronic states of deficiency. Regardless of whether these needs are physiological or psychological, when people indulge in positive future fantasies, they are patiently waiting for need satisfaction but fail to actively engage in going the cumbersome way to attain the desired future. By making people feel accomplished because they have already attained the desired future in their mind, the positive future fantasies cause people to prematurely relax such that they fail to exert the energy and effort to go the cumbersome way to wish fulfillment.

It comes as no surprise that positive future fantasies are both a risk and a protective factor for symptoms of depression. They are a protective factor against depressive symptoms in the short term; however, such protection comes at the expense of low effort and little success rendering positive fantasies a risk factor for depression in the long term. Positive fantasies should become a protective factor even in the long run, when people mentally contrast them with their inner obstacles of reality. People will then actively try to fulfill their wishes and attain their goals. We talk about mental contrasting in the next part of the chapter.

Mental Contrasting of Positive Future Fantasies

Mental Contrasting: Principle

“I used to be God ... and now I am only bipolar.”


To find a solution for the energy-sapping effects of positive fantasies, we introduce fantasy realization theory (FRT; Oettingen, 2000, 2012). According to the theory, to trigger active goal pursuit, positive future fantasies need to be juxtaposed with a clear sense of reality. When positive fantasies are mentally contrasted with this clear sense of reality, they should spur energy and effort that is needed to make the fantasies come true. When an obstacle can be overcome (i.e., chances of overcoming the obstacle and reaching the desired future are high), people become energized. When the obstacle cannot be overcome and the desired future cannot be reached (i.e., chances of overcoming the obstacle and reaching the desired future are low), mental contrasting spurs people to adjust the wish or disengage from achieving the desired future.

The imagery procedure of mental contrasting entails three distinct steps: First, you define a wish that is important to you. Second, you identify the best possible result or outcome of having fulfilled that wish and then imagine this best outcome. Third, you identify the most critical inner obstacle holding you back from fulfilling that wish and imagine
that obstacle occurring. For example, the inner obstacle can be an anxiety or resentment, a bad habit, an impulse, or an irrational belief.

In mental contrasting, when the obstacle is perceived as surmountable, people feel determined and put in the effort to reach the desired future; when the obstacle is perceived as insurmountable or as taking too many resources, they will moderate their wish, tackle it at a later time, delegate it to others, or let go of trying to fulfill their wish. Mental contrasting helps people pursue the wishes that are important and manageable and let go of those that are less important, take too many resources, or are simply unrealizable.

The thoughts and images about the obstacles of reality spoil the pleasure and positive affect aligned with the soothing fantasies. This is because the person who is engaged in mental contrasting either is compelled to invest the effort to realize the fantasies or is compelled to quit trying to make their fantasies come true. The quotation at the beginning of the present section stems from a conversation on the street that the authors overheard: “I used to be God … and now I am only bipolar.” Mental contrasting will make it clear that being God is a fantasy and will disengage people from striving for it, setting resources aside that can be used to deal with the challenge of being bipolar.

**Indulging, Dwelling, and Reverse Contrasting**

Mental contrasting starts with imagining the desired future and then switching to imagining a negative reality. It has three complementary modes of thought: indulging in thoughts and images about the desired future only, dwelling on thoughts and images about the obstacle of negative reality only, and reverse contrasting. In reverse contrasting, people start with generating thoughts and images about the reality and then switch to thoughts and images about the desired future. Because in reverse contrasting people start with elaborating the negative reality, the desired future fails to be the anchor; thus, the negative reality cannot be interpreted as an obstacle preventing the desired future. Because people do not understand that there is an obstacle, they will not feel engaged to overcome it, even if it is surmountable, and they will not feel disengaged from insurmountable obstacles. Similar patterns of behavior apply for indulging and dwelling. In indulging, there is no obstacle to energize the person, while in dwelling there are no fantasies about the future to provide the direction in which to act.

The imagery procedure of mental contrasting induces recognition of the obstacle standing in the way of wish fulfillment and makes expectations of success relevant for behavior rather than changing the level of expectations. Several studies confirmed that there are almost perfect correlations between the expectations of success measured before and after people engage in mental contrasting. In addition, when the levels of expectation of success are compared across the four modes of thought (mental contrasting, indulging, dwelling, and reverse contrasting), no differences between the groups emerge (Oettingen, Pak, & Schnetter, 2001).

**Mental Contrasting Regulates Behavior**
Evidence

There is a host of experimental studies supporting the described effects of mental contrasting on behavior change. These experiments pertain to a variety of life domains, including the academic domain, the professional domain, the health domain, and the domain of interpersonal relationships. In the following, we report about an experimental study that has been conducted in the domain of interpersonal relationships and then summarize other experiments showing the same pattern of results in other life domains.

Regulating Interpersonal Relationships

University students named their most important wish or an important concern they wanted to solve that pertained to their family or friends. They then indicated their perceived likelihood that the wish or concern would have a happy ending (Oettingen et al., 2001). Students’ wishes were “getting closer with my mother” or “find a compromise with my roommate.” Student participants were then asked to find the best outcomes of their wish coming true and the critical obstacles of reality that might prevent them from fulfilling their wish. Then, the four conditions were established: Participants were to imagine the best outcomes and the critical obstacles (mental contrasting), the best outcomes only (indulging), the obstacles only (dwelling), or the obstacles and then the best outcomes (reverse contrasting). As dependent variables, students reported how energized they felt right after the experiment, and 2 weeks later, they indicated when exactly they undertook the most difficult actions to fulfilling their wishes. Students in the mental-contrasting group felt energized and acted on wish fulfillment in line with their expectations of success, more so than in the three control conditions (indulging, dwelling, reverse contrasting). When the obstacles were surmountable (expectations of success were high), participants reported feelings of high energy and acted immediately to fulfill their wishes; when the obstacles were insurmountable (expectations of success were low), participants reported feelings of low energy and took a long time to act. Under these bleak prospects, the participants were mindful of their energy and resources to be prepared for acting on more promising and feasible endeavors.

Regulating Achievement, Health, and Everyday Life

Mental contrasting of positive future fantasies has benefitted insight and prioritization in behavior in a host of life domains. In the academic domain, mental contrasting facilitated excelling in a foreign language (A. Gollwitzer, Oettingen, Kirby, Duckworth, & Mayer, 2011; Oettingen, Höning, & Gollwitzer, 2000); taking the opportunity to go abroad (Oettingen et al., 2001); adhering to vocational trainings (Oettingen, Mayer, Thorpe, Janetke, & Lorenz, 2005); and doing well in mathematics (Oettingen et al., 2001). Mental contrasting of positive future fantasies benefitted coping with everyday life and coming up with integrative (win–win) solutions (Kirk, Oettingen, & Gollwitzer, 2011); fostered successful decision-making (Oettingen, Mayer, & Brinkmann, 2010); and enabled the willingness to integrate work and child care in women who were students in graduate programs (Oettingen, 2000). Regarding health behavior change, mental contrasting facilitated the actions needed to reduce or stop smoking (Oettingen, Mayer, & Thorpe, 2010); facilitated physical exercise in obese men of low socioeconomic status (Sheeran, Harris, Vaughan, Oettingen, &
From Feeling Good to Doing Good

Gollwitzer, 2013); and eased coping with Type 2 diabetes (Adriaanse, de Ridder, & Voorneman, 2013). Mental contrasting helped relationships in dyads and groups by inducing conciliation after a transgression (Schrage, Schwörer, Krott, & Oettingen, 2019); facilitating tolerance and taking responsibility for peers who were members of an out-group (Oettingen et al., 2005); asking fellow students for help in a learning context; and giving help to pediatric patients and their parents in emergency care nurses (Oettingen, Stephens, Mayer, & Brinkmann, 2010).

Processes

The question remains how mental contrasting works in achieving these effects. As said previously, using the strategy involves conscious imagery of the future and the obstacle of reality. Though conscious images are involved when performing mental contrasting, the self-regulation tool of mental contrasting works by drawing on processes outside a person’s awareness. The three types of nonconscious processes that mediate the effects of mental contrasting on behavior change pertain to cognition, motivation, and coping with setbacks. First, mental contrasting fosters the identification of the critical obstacle, and it instigates nonconscious associative links between the future and the obstacle as well as between the obstacle and the action to overcome it. Second, mental contrasting instigates mobilization of energy to achieve the goal. Third, mental contrasting guarantees effective responses to setbacks. By triggering these three types of processes outside of people’s awareness, mental contrasting allows people to actively strive for feasible wishes and disengage from unfeasible ones, without even realizing that self-regulation is at play. We now present research regarding each of these processes in more detail.

Nonconscious Cognition

Regarding the nonconscious cognitive processes, there are again three processes one can distinguish. The first of the three processes pertains to recognizing obstacles. Events and scenarios of current reality will identify themselves as obstacles to the desired future when the desired future is mentally elaborated before the reality. Now, the future works as an anchor against which the reality presents itself as an obstacle. Imagine a person who is preparing her application to a vocational program and facing an impending deadline. She fantasizes about excelling in her application and the joy of being admitted. At the same time, she thinks about an attractive party invitation she has received. Going to the party is seen as an obstacle only when contrasted against the vividly imagined success in the application process—the joy of receiving the acceptance letter, the happy faces of the relatives, and the first day in school. If the person imagines going to the party before she imagines her excitement at being accepted to the program, she might in fact go to the party and risk failing to complete her application materials in time (Oettingen, 2000; Oettingen et al., 2001).

In three experiments, A. Kappes, Wendt, Reinelt, and Oettingen (2013) observed that people in the mental-contrasting conditions (vs. relevant control conditions such as reverse contrasting) nonconsciously recategorized idiosyncratic reality words as obstacles. Using a task-switching paradigm (Kiesel et al., 2010), the authors found that participants cate-
organized the reality words as obstacles in line with their expectations of success. The categorization of obstacles in turn mediated the effects of mental contrasting on effortful action and success in fulfilling the respective wish. A. Kappes et al. (2013) also found that mental contrasting allowed people to discover previously unknown real-life obstacles while trying to attain the desired future.

The second of the nonconscious cognitive processes pertains to the strength of future-obstacle associative links. Imagining the desired future and the obstacle of reality should build a strong nonconscious associative link between future and obstacle, which in turn should mediate the effects of mental contrasting on effort and success. A. Kappes and Oettingen (2014) used an acute stress paradigm to test this hypothesis. They asked college students to present a talk on their personal attributes that qualified them as a good job candidate. They learned that human resource experts would judge their performances. Before giving the talk, they had to mentally contrast their success in the job talk, reverse contrast, or mentally elaborate irrelevant positive and negative thoughts and images. Mental-contrasting participants, versus those in the reverse-contrasting and irrelevant thought control groups, formed stronger future reality associative links when their obstacles were surmountable (expectations of success were high), but formed weaker future reality associative links when their obstacles were insurmountable (expectations of success were low). The strength of the nonconscious associative links mediated participants’ level of performance. Experimental studies that focused on affective and behavioral measures of performance (self-rated and other-rated) replicated these results. In a final study, A. Kappes and Oettingen (2014) told half of the participants who had mentally contrasted that they had successfully accomplished their wish. For those participants, mental contrasting lost its energizing power, and they no longer evidenced the expectancy-dependent pattern in the strength of the implicit associative links. These findings are in line with the literature on goal pursuit: When people feel their goals are attained, they end their goal striving ( Förster, Liberman, & Higgins, 2005; Masicampo & Baumeister, 2011; McCulloch, Fitzsimons, Chua, & Albarracin, 2011).

The third of the nonconscious cognitive processes mediating mental-contrasting effects pertains to obstacle–behavior associative links. In order to overcome the obstacle and translate the desired future into reality, action is required. Thus, nonconscious associative links between the obstacle of reality and an effective action to surmount the obstacle should mediate mental-contrasting effects on wish fulfillment. Indeed, when obstacles were surmountable (expectations of success were high), mental contrasting led to strong nonconscious associative links between the obstacle and the action to surmount the obstacle; when obstacles were insurmountable (expectations of success were low), mental contrasting weakened this association (A. Kappes, Singmann, & Oettingen, 2012). The nonconscious obstacle–action associative links in turn mediated exerted effort and successful performance.
Nonconscious Energization

Indulging in positive future fantasies sapped energy (H. B. Kappes & Oettingen, 2011). When these fantasies are contrasted with obstacles of reality, however, energization should depend on whether the obstacle can be surmounted or not. Oettingen et al. (2009) observed that nonconscious energization mediated the effects of mental contrasting on efforts to realize the desired future. Like H. B. Kappes and Oettingen, they assessed energization via a nonconscious measure: participants’ SBP (Wright, 1996). Student participants generated a wish that was important to them, reported about their expectations of success, and then either mental contrasted or indulged in fulfilling that wish. Energization measured via SBP mediated the effects of mental contrasting on wish fulfillment. Measuring SBP and feelings of energization in a series of other experimental studies supported the described pattern of results (Sevincer, Busatta, & Oettingen, 2014).

Coping With Setbacks

Constructive coping with setbacks is pivotal in leading a happy and constructive life because it favors growth and learning of new knowledge and valuable skills (Ball, Hoyle, & Towse, 2010; Nussbaum & Dweck, 2008). However, people may interpret setbacks, especially in the form of negative personal feedback, as insults, and by searching for external attributions, people will not process the valuable information entailed in most setbacks. Information processing is different for positive feedback. People readily embrace it and take it as self-affirmation (Sedikides & Green, 2009).

Helping people to constructively deal with setbacks, mental contrasting works via two pathways: It modulates the effective processing of information entailed in setbacks (A. Kappes, Oettingen, & Pak, 2012), as well as in people’s subjective competence. When the obstacles are surmountable (expectations of successfully reaching the desired future are high), participants who engaged in mental contrasting effectively processed the information entailed in negative feedback. They even used that information for subsequently forming constructive plans. Mental contrasting also upheld participants’ feelings of competence. On the contrary, when obstacles were insurmountable (expectations of successfully reaching the desired future were low), participants who engaged in mental contrasting distanced themselves from the negative feedback. They adopted a low subjective feeling of competence regarding wish fulfillment, liberating them to pursue more promising endeavors. In the indulging and dwelling control groups, participants showed the same level of information processing in response to setbacks irrespective of whether they thought the wish was reachable or not. These results suggest that when people have high expectations to fulfill their wish, mental contrasting helps them to effectively process negative feedback and maintains their feelings of competence. No effects of condition evinced for positive feedback, regarding neither the processing of information nor the level of subjective competence.

The Spontaneous Use of the Four Modes of Thought
How does pure positive fantasizing versus mental contrasting unfold in the stream of consciousness? Sevincer and Oettingen (2013) content analyzed participants’ spontaneous thoughts and images as a response to participants being asked to generate free thoughts and images regarding an important wish and to write their thoughts down; from these thoughts, independent raters extracted sentence units and evaluated these units as belonging to one of the four modes of thoughts: mental contrasting, indulging in the positive future, dwelling on the negative obstacles of reality, and reverse contrasting. Sevincer and Oettingen (2013) observed that mental contrasting that was spontaneously generated showed the same pattern of results as experimentally induced mental contrasting: It predicted effort and success in line with a person’s expectations of success (H. B. Kappes, Oettingen, Mayer, & Maglio, 2011; Sevincer & Oettingen, 2013).

**Indulging in Positive Fantasies is the Most Popular Mode of Thought**

Across three studies, Sevincer and Oettingen (2013) observed the relative proportions of the four modes of thought. Sixteen percent of the participants spontaneously mental contrasted, 41 percent indulged in the positive future, 17 percent dwelled on the obstacle of reality, 11 percent reverse contrasted, and 14 percent did not fall in any of the categories. One may interpret these numbers from at least two angles. The one-sided modes of thought (indulging and dwelling) were more frequent than the two-sided modes of thought (mental contrasting, reverse contrasting); the numbers were 58 versus 27 percent, respectively.

Apparently, in people’s stream of thought, spontaneous changes of valence are rare. Such changes cost mental effort because the activation of a concept with a certain valence makes the activation of another concept with the same valence more likely (Bargh, Chaiken, Raymond, & Hymes, 1996). When people start to think in positive or negative terms, they are tuned toward producing more thoughts that are positive or negative, respectively, as is true for indulging and dwelling. They are less likely to switch to thoughts of opposite valence as in mental contrasting or reverse contrasting. Supporting this interpretation, neuropsychological findings showed that mental contrasting demanded more cognitive effort than indulging or resting (Achtziger, Fehr, Oettingen, P. M. Gollwitzer, & Rockstroh, 2009). Further support that switching valence of thought costs mental energy came from a study showing that people who were energy depleted (vs. not depleted; Muraven & Baumeister, 2000) were less (vs. more) likely to mental contrast (Sevincer, Schlier, & Oettingen, 2015).

When observing the distribution within the two-sided modes of thought, there was no difference between mental contrasting (16 percent) and reverse contrasting (11 percent). However, within the one-sided modes of thought, there were more than twice as many people who spontaneously indulged (41 percent) than spontaneously dwelled (17 percent). This observation is in line with findings that positive thinking is more frequent than negative thinking (Markus & Nurius, 1986; Perloff & Fetzer, 1986) and reveals how tempting it is to simply stay in a state of positive fantasy.
Situational Variables and Using Mental Contrasting

Discovering a content-analytic way to measure spontaneously generated modes of thought permitted us to investigate context and person determinants of the spontaneous use of mental contrasting. Providing people with cues of future and reality fostered the use of mental contrasting (Sevincer et al., 2015), and when participants foresaw having to solve an impending task, they also generated more mental-contrasting thoughts. When applying a choice paradigm rather than content analysis, H. B. Kappes et al. (2011) observed in four studies that those participants who were put into a sad mood (vs. a happy or neutral mood) spontaneously generated more mental-contrasting thoughts. Sad mood might have indicated that there is a problem that needed to be solved.

Person Variables and Using Mental Contrasting

Mental contrasting involves mental effort (Achtziger et al., 2009). Thus, people with a high need for cognition (i.e., who enjoy effortful processing; Cacioppo, Petty, & Kao, 1984) and a high need for achievement (i.e., who enjoy solving challenging tasks; McClelland et al., 1949) should be particularly prone to spontaneously using mental contrasting. Mental contrasting should also go along with self-reports of being successful in self-regulation (Baumeister & Heatherton, 1996; Tangney, Baumeister, & Boone, 2004). As for the big five personality dimensions, high extraversion and high openness to experience should be those that are conducive to the spontaneous use of mental contrasting. Sevincer, Mehl, and Oettingen (2016) reported studies supporting these ideas. In addition, across all studies, only about 15 to 20 percent of the participants spontaneously used mental contrasting. This finding highlights that it is important to develop interventions that teach people how to use mental contrasting in their everyday lives.

Mental Contrasting as a Metacognitive Tool

If mental contrasting supports people in prioritizing future endeavors that are important and feasible and in delegating or letting go of those that are less crucial or are impossible to realize, teaching people how to use mental contrasting during everyday life should foster getting through the day in a more effective way.

Evidence

A series of intervention studies attested to the ecological validity of mental-contrasting effects. When taught as a metacognitive strategy or tool, mental contrasting (vs. indulging) facilitated effective decision-making in middle managers during their professional and private everyday lives. They reported being more prepared for making decisions, having improved time management, finishing some tasks, and letting go of others (Oettingen, Mayer, & Brinkmann, 2010). In a negotiation setting, those who were taught mental contrasting (vs. indulging, dwelling, or no instructions) were more successful in finding win-win solutions as a dyad, and they treated their negotiation partner more fairly (Kirk et al., 2011). More intervention work using mental contrasting has been done in the health domain (e.g., Sheeran et al., 2013; Adriaanse et al., 2013) and in the education domain (A. Gollwitzer et al., 2011; summaries by Oettingen, 2012, 2014).
Mental contrasting is a tool to find clarity about whether to pursue or not pursue a desired future, and it helps people on the way to wish fulfillment. There are situations in life, however, when distancing oneself and letting go from wish fulfillment is not possible or not advisable. Examples are people who need to change their habits for health reasons or students who must acquire basic skills at school. In such cases, intervention studies need to guarantee that people can find an obstacle that is surmountable (expectations of success are high) so that they pursue the desired future. Mental-contrasting interventions conducted so far guaranteed high expectations. Participants were given desirable tasks to complete that were challenging but still solvable, or they were asked to focus only on those wishes that were feasible.

**Guaranteeing High Expectations of Success**

Expectations of success are based on a person’s past performance. Thus, in areas where people do not have much experience, their expectations are flexible and easily influenced by new information (Bandura, 1977; H. B. Kappes, Oettingen, et al., 2012). Based on this reasoning, in two experimental studies, students learned that their creative potential was either high or moderate and then were randomly assigned to a mental-contrasting, an indulging, or a dwelling group. The modes of thought referred to students excelling on an impending creativity test. Students who were in the mental-contrasting group and who were told that they had a high creative potential were more creative than those in the mental-contrasting group who were told their creative potential was moderate. Students in the positive feedback (high creative potential) and mental-contrasting conditions showed stronger creative performance than those in the conditions thinking about the desired future only (indulging), thinking about the obstacles of reality only (dwelling), and unrelated content control conditions, regardless of whether they had been told that their creative potential was high or moderate.

Another way to guarantee high expectations of success, especially in the context of group interventions, is to provide participants with tasks that are clearly manageable and that still demand effortful action in order to be solved. A. Gollwitzer et al. (2011) applied such a task in a school context. In one study, German elementary school students of low-income families, who did not have English classes yet, were taught words in English and then learned that there would be a short quiz in 2 weeks where all students who performed above a certain level would get a little prize. Then, they were taught either how to engage in mental contrasting or how to positively think about succeeding in the quiz. The results showed that as early as second grade, teaching mental contrasting (vs. indulging) led to better performance on the language quiz. A. Gollwitzer et al. observed the same pattern of results in fifth graders at a low-income school in Texas. Here, the tasks were to learn to say the words Thank you in a variety of languages. These two studies showed that even in large group settings, a short mental-contrasting intervention led young and middle-aged children to excel on manageable academic tasks.

A more straightforward way of guaranteeing that mental contrasting is applied to wishes of high expectations is to ask people to generate a wish that they themselves judge as feasible. Students who were interested in eating more healthily and losing weight were
asked to mental contrast a wish regarding diet and weight loss that they estimated as attainable during the 2 weeks of the study. Those in the mental-contrast group evidenced lower calorie intake and did more vigorous exercise than those in the indulging and no intervention control groups. The last result indicates that the effects of the brief mental-contrasting exercise focusing on eating transferred to exercising (Johannessen, Oettingen, & Mayer, 2012).

Mental Contrasting of Positive Future Fantasies: Summary

Mental contrasting of positive future fantasies grounds these fantasies in reality. More than just opening up a discrepancy between future and reality, mental contrasting points out that obstacles of reality need to be overcome to achieve the desired future. It also points out which obstacles of reality need to be surmounted so that the positive future fantasies can be attained in real life. Note that the mere activation of the positive future and the obstacle of reality are not enough to attain mental-contrasting effects. Only when people vividly imagine the desired future outcome and the obstacle of reality standing in its way will the nonconscious processes be triggered that predict the desired behavior change (A. Kappes & Oettingen, 2014; Oettingen et al., 2001; summary by Oettingen, 2012, 2014).

These nonconscious processes pertain to identifying obstacles to wish fulfillment, linking the future, the obstacle, and the behaviors to overcome the obstacle, to energization, and to effective information processing in light of setbacks. Mental contrasting is a tool that people do not spontaneously embrace as it demands cognitive effort. When left by themselves, people prefer to engage in one-sided modes of thought, especially in positively fantasizing about the future. Interventions teaching mental contrasting have been found to support people’s management of everyday life (time management, disease management) and long-term development (academic performance in schoolchildren).

But, what can we do if the obstacle a person identifies for him- or herself is surmountable, but it is really hard to master, such as an ingrained bad habit or impulsive behavior or when strong emotions are at play (e.g., anger, anxiety). Mental contrasting forms nonconscious links between the obstacle and the behavior to overcome the obstacle and thus has been shown to be an effective way to overcome the obstacle (A. Kappes, Singmann, et al., 2012). It should be even more effective if we complement mental contrasting with a strategy by which a person can explicitly connect the obstacle of reality with the behavior to overcome the obstacle, forming implementation intentions (P. M. Gollwitzer, 1999, 2014). Therefore, we combined mental contrasting with implementation (p. 607) intentions (abbreviated MCII), a strategy that has been shown to be most effective in attaining desired futures once people have fully committed to realizing these futures.
Mental Contrasting With Implementation Intentions

Implementation intentions are “If situation X, then I will perform goal-directed behavior Y!” plans (P. M. Gollwitzer, 1999, 2014). They form nonconscious links between the situation specified in the if part and the behavior specified in the then part. These links lead to automatic goal-directed responses when the specified situation is encountered. In a wealth of studies, implementation intentions or if–then plans have been shown to support goal attainment ($d = .65$; meta-analysis by P. M. Gollwitzer & Sheeran, 2006). Implementation intentions have been found to benefit the attainment of set goals regardless of whether these goals pertain to the regulation of thoughts, actions, or emotions (Sheeran, Webb, P. M. Gollwitzer, & Oettingen, 2019; Webb, Schweiger Gallo, Miles, P. M. Gollwitzer, & Sheeran, 2012).

There are three prerequisites for implementation intentions to show effects: first, a strong commitment to attain the desired future or goal (Sheeran, Webb, & P. M. Gollwitzer, 2005); second, the situation in the if part of the plan has to be relevant for goal attainment; and third, the behavior specified in the then part of the plan needs to be instrumental for goal attainment. In most research on implementation intentions, the content is provided by the experimental setup, which guarantees that these three prerequisites are fulfilled (e.g., Armitage, 2004; P. M. Gollwitzer & Sheeran, 2006). However, when people use implementation intentions outside an experimental setting, they are left to themselves to fill in the content of their plans. They now need a tool that allows them to fill the plans with this relevant content just by themselves.

This tool can be mental contrasting. First, mental contrasting creates a strong commitment and active goal pursuit; second, it specifies the situation for the if part of the plan (obstacle); third, it specifies the behavior for the then part of the plan (behavior to overcome the obstacle). That is, mental contrasting allows people, just by themselves, to insert the obstacle into the if part and the effective behavior to overcome the obstacle into the then part of the if–then plan or implementation intention. These considerations led us to combine mental contrasting with implementation intentions (MCII; Oettingen 2012, 2014; Oettingen & P. M. Gollwitzer, 2010).

MCII: Interventions

Mental contrasting emancipates people because they can use the strategy by themselves and with respect to any wish they might have. The wish can be trivial or life changing, short term or long term, and relating to the self or relating to one’s context. Mental contrasting is content independent and thus can be taught to anyone who is open to going through its four steps: identifying a wish, identifying and imagining the best outcome, identifying and imagining the most critical inner obstacle, and generating a plan in the form of “if ... obstacle, then I will ... behavior.” Because it can be applied as a metacognitive strategy, once people have learned it, they can take it as a tool to apply in any life sit-
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uation. Using MCII does not demand the presence of educators, trainers, or researchers who give advice on the content of MCII.

Kirk, Oettingen, and P. M. Gollwitzer (2013), using an integrative negotiation task, found that MCII led to more win-win solutions than using either mere mental contrasting or mere implementation intentions. Heightened cooperation mediated this effect. Student participants made more plans to cooperate and took more perspective of their negotiation partner when they had mentally contrasted prior to forming implementation intentions. In the fitness domain, MCII led to breaking bad habits related to snacking, again, more so than either one of the strategies alone; mental contrasting provided insight into personal obstacles, which then helped make effective if-then plans (Adriaanse et al., 2010).

MCII in Health, Work, and Relationships

The effects of MCII on behavior change have been shown in various life domains. In the health domain, it fostered vigorous and regular sport activities over 4 months (Stadler, Oettingen, & P. M. Gollwitzer, 2009) and eating more fruits and vegetables over 2 years (Stadler, Oettingen, & P. M. Gollwitzer, 2010). It benefitted sport activities and weight reduction in patients who had a stroke (Marquardt, Oettingen, P. M. Gollwitzer, Sheeran, & Liepert, 2017), and it helped patients with chronic back pain to increase their physical capacity (Christiansen, Oettingen, Dahme, & Klinger, 2010). In the academic domain, MCII supported working mothers from low-income backgrounds to manage their time and to succeed at a vocational program in which they were enrolled (Oettingen, H. B. Kappes, Guttenberg, & P. M. Gollwitzer, 2015). It increased the homework quality and quantity of children at risk for attention deficit hyperactivity disorder (Gawrilow, Morgenroth, Schultz, Oettingen, & P. M. Gollwitzer, 2013), and over the period of 2 months, it helped to solve practice tasks for a standardized test (Duckworth, Grant, Loew, Oettingen, & P. M. Gollwitzer, 2011). Finally, it improved attendance and course grades in middle school children from low-income homes (Duckworth, Kirby, P. M. Gollwitzer, & Oettingen, 2013). In the relationship domain, it reduced insecurity-related behaviors (Houssais, Oettingen, & Mayer, 2013), and it helped couples talk about sensitive topics (Oettingen & Cachia, 2016).

MCII and Regulating Positive Affect

An important question that remains is how people can use MCII for downregulating emotions or mental states that are in themselves enjoyable. Examples of such states are addictions (e.g., alcohol) or states involving excessive positive emotions (e.g., as in bipolar disorder; Du Pont, Welker, Gilbert, & Gruber, 2016; Ford, Mauss, & Gruber, 2015). There are no studies yet on the effects of MCII on regulating excessively positive affective states, but there are a number of studies teaching people how to downregulate their alcohol consumption, which might provide advice on how one can go about helping people to regulate their excessively positive affective states.
In one online intervention study with a diverse community sample (recruited via Amazon Mechanical Turk [Mturk]), Wittleder, A. Kappes, Oettingen, P. M. Gollwitzer, Jay, & Morgenstern (2019) investigated whether MCII helped to reduce alcohol consumption in people who were worried about their drinking. More than 200 participants either were taught MCII or were given a distractor task. Those who had received the MCII intervention (vs. distractor task) felt more committed to reducing their drinking, and 4 weeks later they took more effective action to reduce their drinking (measured by the short Readiness to Change [RTC] drinking scale; Rollnick, Heather, Gold, & Hall, 1992). Participants, who had engaged in hazardous drinking at baseline and who received the MCII intervention were 43% less likely to report drinking days at 1-month follow-up than respective participants in the control condition, and 53% less likely to report drinks consumed. That is, the effects of the MCII intervention were particularly strong when drinking was hazardous, reflecting past research that MCII effects are strongest for people who need self-regulation the most.

Even though the participants in the described study wanted to reduce their alcohol consumption, the state of being intoxicated was still wanted. Not drinking would be great, but drinking would also be great! To help people furnish their wish of not drinking with purpose and passion, Wittleder et al. (2019) proceeded as follows: Participants were first asked to practice MCII using a wish of general importance (e.g., I wish to mend the relationship with my partner; I want to get to work on time), and only then were participants requested to practice MCII with a wish related to their alcohol consumption. By applying MCII to a wish of general importance first, participants were able to realize that the inner obstacle standing in the way of fulfilling that wish might be their excessive alcohol consumption. This insight gave them the purpose for reducing their drinking. Thus, the subsequent second MCII exercise could meaningfully focus on a wish related to reducing or stopping to drink. Finally, to demonstrate everyday applicability, participants performed a third MCII exercise for a wish they wanted to realize within the next 24 hours.

Similar to how the described study on reducing alcohol consumption applied MCII, one might use MCII to reduce the state of excessive positive affect. Through a first MCII exercise, participants may discover that excessive positive affect may interfere with fulfilling the most important wishes they have in their everyday life and long-term development. This insight might provide the purpose for regulating such excessive positive affect (even though the positive affect might feel pleasurable at the very moment). If participants succeed to practice MCII on a daily basis they might be particularly well sheltered from falling prey to states of excessive positive affect.

**Mental Contrasting With Implementation Intentions: Summary**

Combining mental contrasting with implementation intentions unites the effects of both components: Implementation intentions strengthen the obstacle–behavior link that mental contrasting instigates even further, which is important when the obstacles are particularly hard to overcome. Mental contrasting provides the three prerequisites of implementation intentions to be effective, and it enables people to make their own idiosyncratic if-
then plans in an autonomous manner. We reported research showing that teaching mental contrasting and MCII as a metacognitive strategy helps people to find clarity in their lives, to wisely select which of their wishes to pursue, and to fulfill their wishes even when obstacles are particularly hard to overcome. These interventions have been successful in participants of different ages, backgrounds, and cultures. Many of the intervention studies were conducted online, showing that MCII benefits people even when applied in a brief and written format. The intervention studies also showed that mental contrasting and MCII can target any wish as long as the wish is important to the person. Being a content-independent, imagery-based, self-regulation tool, people just need a few minutes of calm and uninterrupted time to go through the four steps of MCII, which are wish, outcome, obstacle, plan (WOOP). Without the help of others, people who use WOOP can find clarity in their everyday lives and long-term development (for more information, see http://woopmylife.org/).

**Conclusion**

Coming back to the positive fantasies about Hillary Clinton winning the 2016 presidential election, the described research alludes to the perils of such soothing fantasies. Sheer positive thinking, though pleasant and relaxing, fails to clarify that effortful action and complex problem-solving are necessary to make the wished-for future come true. Maybe reflecting on the obstacles that stood in the way of Hillary Clinton’s success would have made more people aware of the impending danger and thus would have spurred action at a time when the race was still open.

**References**


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