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Heather Barry Kappes and Gabriele Oettingen

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# Wishful Information Preference: Positive Fantasies Mimic the Effects of Intentions

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## Abstract

When pursuing set goals or intentions, people prefer to acquire information about the pros rather than the cons of their goal pursuit. Little is known about information preferences at earlier stages, when people are not yet serious about pursuing a given future. In the present three studies, positive fantasies that depicted an idealized desired future—compared with fantasies that questioned whether the future would be so ideal—created a preference for pros over cons, just like set goals or intentions have been shown to do. Positive fantasies created a stronger preference for pros versus cons when people were not serious about pursuing an imagined future or had just foregone an opportunity to do so. Results suggest that before people are engaged in serious pursuits, positive fantasies spur the selective acquisition of pro information, which may lead to poor decisions even if the acquired information is carefully deliberated on later.

## Keywords

fantasies, mental simulations, goals, self-regulation, information preference, intentions

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In late 2009, *The New York Times* reported, “The power of positive thinking is under assault” (Ellin, 2009). Relentless focus on the positive had been implicated in transgressions including the recent financial crisis. Sociologist and author Micki McGee offered a representative comment: “If you dream it and believe it, it becomes reality. [That philosophy] contributes to the economic bubble that we just saw explode in enormous ways” (Cohen, 2009, para. 18).

Anecdotal evidence contends that imagining good things coming—a tactic recommended by motivational speakers and self-help gurus, and practiced by novice homeowners and savvy investors alike—steered people into poor decisions (Ehrenreich, 2009). Previous research has identified effects of positive fantasies on effort and achievement over time (e.g., Kappes, Oettingen, & Mayer, 2012; Oettingen & Mayer, 2002), but has not considered how such fantasies could shape decisions. We tested the effect of positive fantasies on one component of decision making: the acquisition of information about pros versus cons of an imagined future experience.

## Information Preference

How do people move from the first inkling of realizing a goal to the decision to pursue that goal? Just because something is desirable does not guarantee that people will seriously

consider the possibility of pursuing it. For example, a person might fantasize about buying a home without seriously considering doing so. Only when she seriously considers this possibility will she deliberate about it by weighing the pros and cons (James, 1890/1950). Such deliberations may be done formally, using a tool like the decision balance sheet (Janis & Mann, 1977; Velicer, DiClemente, Prochaska, & Brandenburg, 1985), informally, or perhaps even nonconsciously (Dijksterhuis, 2004; Dijksterhuis, Bos, Nordgren, & van Baaren, 2006). A substantial body of research has examined the process and consequences of deliberating pros and cons when people seriously consider potential goal pursuits (e.g., Armor & Taylor, 2003; Gollwitzer, Heckhausen, & Steller, 1990). Prior to serious consideration, however, how may fantasies and daydreams about realizing a particular future impact the acquisition of relevant pro versus con information? Relatively little research has investigated the influences of future thoughts on information acquisition at this early stage of fantasy realization.

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On the one hand, there might be no reason to suspect that people who are merely toying with pursuing a desirable future would have any particular preferences for pros or cons, although they do show such preferences at later stages of the decision making and implementation process. For instance, when people do not merely toy with but seriously consider a goal (e.g., deciding whether to travel abroad in the summer), it is effective to consider both pros and cons, and if they are offered both types of information at this deliberative stage, people acquire both in a relatively balanced manner (Gollwitzer et al., 1990). When implementing a set intention (e.g., shopping for a plane ticket and making hotel reservations for the vacation), then people prefer to learn about pros rather than cons, a phenomenon that has been referred to as a “selective exposure bias” (recent reviews by Hart et al., 2009; Smith, Fabrigar, & Norris, 2008). People steer their thoughts away from information about cons (Beckmann & Gollwitzer, 1987; Gollwitzer et al., 1990; Taylor & Gollwitzer, 1995), because such information would “presumably undermine the confidence, determination, and commitment needed for effective goal pursuit” (Armor & Taylor, 2003, p. 87).

Even people who have carefully deliberated are not immune to making poor decisions. For example, many homeowners affected by the U.S. subprime mortgage crisis have been accused of neglecting information about the cons of their home-buying decisions (e.g., Ehrenreich, 2009). One reason for this neglect might be that prior to seriously considering pursuing a goal, people are prone to selectively acquiring information about pros rather than cons. Such selective acquisition could influence decisions even if careful deliberation is used later.

Which factors might spur selective information acquisition in people who are not serious about the intent to pursue a goal? We speculated that the way the particular future is imagined might play a role. Specifically, we examined how fantasies about the future affect information preference in people who are less versus more serious in their consideration of pursuing a desired future.

### Fantasies About a Desired Future

Fantasies are defined as mental images of future events and experiences that emerge in the stream of thought (Klinger, 1990, 1996; Oettingen & Mayer, 2002). When the future events are desired, fantasies about them are experienced as being positive; however, the degree of positivity depends on the way that the events are depicted. One way is to depict an idealized best-case scenario that is easily and smoothly attained: such images are labeled *positive fantasies* (Oettingen & Mayer, 2002; Oettingen & Wadden, 1991). Alternatively, one can depict the desired future in a way that incorporates obstacles, problems, negative aspects, and other questions about whether the desired future will be or can be attained. We refer to such images as *questioning fantasies*. Although

questioning fantasies are experienced less positively than positive fantasies, they need not be strictly negative in tone (Oettingen & Mayer, 2002).

We speculated that fantasizing about a desired future in terms of positive versus questioning fantasies would affect people’s preference for information about the pros and cons of that future. Because positive fantasies depict an idealized state as being easily and smoothly attained, they allow people to mentally experience and enjoy the imagined future without restrictions. Questioning fantasies sow doubt about the idealized state and depict it as potentially problematic to attain, and so they do not allow for unrestricted mental enjoyment. Perhaps engaging in positive fantasies imparts the desire to maintain the enjoyment of the mental picture, to protect or even bolster the idealized imagery. One way to do so would be to acquire information about pros rather than cons. Learning about pros could provide new details to embellish the positive fantasies; avoiding learning about cons would prevent the idealized mental image from being tarnished.

Because questioning fantasies sow doubt about a favorable future, they should create less desire to preserve such an image than positive fantasies. Questions spur people to generate answers and to think about the reasons to accept or reject an imagined task (Senay, Albarracín, & Noguchi, 2010). Thus, questioning fantasies should facilitate the acquisition of both pros and cons, or at least, a weaker preference for pros than positive fantasies. In sum, we hypothesized that positive fantasies would create a larger preference for pros versus cons than questioning fantasies.

### The Present Research

We tested this hypothesis in three studies, by inducing positive or questioning fantasies about wearing high-heeled shoes (Study 1), investing in the stock market (Study 2), and taking a vacation (Study 3). As outlined above, we thought that these fantasies would exert differential effects on information preference when participants were not serious about the intent to act toward a desired future. Therefore, we measured the seriousness of intent as a moderator (Studies 1 and 2) or kept it fixed at low (Study 3). As the dependent variable in all studies, we offered participants a chance to learn about pros and cons of pursuing a particular future, and observed their relative preference: We looked at the difference in time reading about pros versus cons (Study 1), the ranking of interest in pros versus cons (Study 2), and the selection of information that ranged from strongly pro to strongly con (Study 3). Across domains and measures of information preference, induced positive fantasies should result in a larger preference for pros over cons than induced questioning fantasies, as long as participants are not serious about the intent to pursue the fantasized future.

## Study 1: Apparel

In the first test of this idea, we induced positive or questioning fantasies about wearing high-heeled shoes. Participants then browsed a website that contained information about the beneficial and detrimental health consequences (i.e., pros and cons) of wearing high heels. As the dependent variable, we calculated how much more time participants spent reading pros than cons.

To measure seriousness of the intent to pursue the fantasized future (i.e., to wear high-heeled shoes), we asked participants to indicate how often they expected to wear the shoes in the upcoming year. The more often they expected to do so, the more serious we assumed their intent to be. We expected seriousness of intent to moderate the effects of fantasies, so that the difference between positive and questioning fantasies would appear more strongly (or might only be present) when seriousness of intent was low.

If information preference differences following positive versus questioning fantasies stem from a desire to preserve the positive fantasies about the idealized future, then these differences should only apply to information about the fantasized topic. To verify this specificity, we also measured participants' seriousness of intent to wear four other apparel items, and had them browse information about the pros and cons of these items too. If positive versus questioning fantasies operate as hypothesized, then the preference for information about these other apparel items should not be affected by generating positive versus questioning fantasies about high-heeled shoes.

## Method

**Participants and Design.** Participants were 77 female American undergraduate students, aged 17 to 23 ( $M = 20$  years,  $SD = 1.27$ ). They completed the study in partial fulfillment of a course requirement. Participants were told that the study concerned how contemporary women view and think about fashion. They were randomly assigned to a positive fantasies ( $n = 38$ ) or a questioning fantasies ( $n = 39$ ) condition.

The study used a 2 (between-subjects: positive fantasies about high heels versus questioning fantasies about high heels)  $\times$  2 (within-subjects: information about high heels versus information about other apparel items) mixed design with a total of five within-subjects measurements. The preference for information about high heels was measured once, and the preference for information about other apparel items was measured four times (pertaining to skinny jeans, wide belts, underwire bras, and backpacks). The dependent variable was the difference in time reading about the health pros minus cons of an apparel item.

**Procedure and Materials.** Participants completed the study in private computer cubicles. They answered an initial questionnaire about their impressions of several different apparel

items, which helped to conceal the purpose of the study. The items assessing seriousness of intent to wear each item were embedded in this questionnaire. Participants were guided through the fantasies manipulation by computer. Finally, they were given access to the website that assessed the dependent variable.

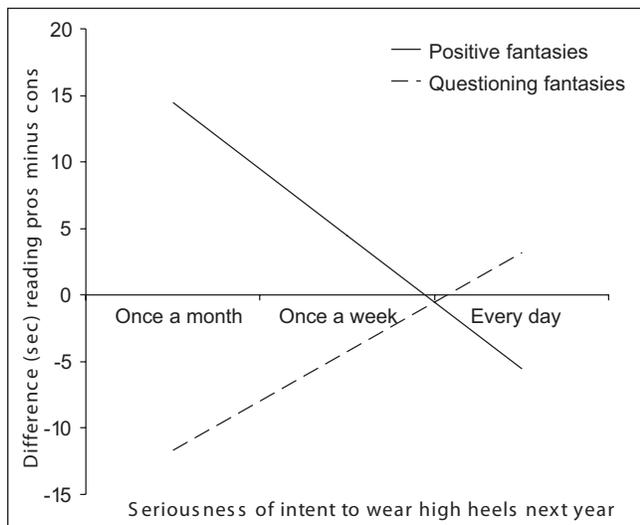
**Seriousness of intent.** Participants indicated their seriousness of intent to wear high-heeled shoes, skinny jeans, wide belts, underwire bras, and backpacks in the upcoming year by marking one of the following eight options: 1 = *never*; 2 = *once a month*; 3 = *twice a month*; 4 = *three times a month*; 5 = *four times a month, i.e., once a week*; 6 = *two to three times a week*; 7 = *four or more times per week*; 8 = *every day*.

**Fantasies.** The fantasies manipulation was administered by computer. There were two prompts, each of which remained on screen for three minutes. On the first screen, participants were told, "Imagine a beautiful pair of high-heeled shoes. Visualize yourself wearing these high-heeled shoes, and how wonderful it is. Please generate and write down some positive thoughts and daydreams about this situation."

After 3 min, participants advanced to a second screen, which differed by condition. In the positive-fantasies condition, instructions read, "Everything about these high-heeled shoes is definitely wonderful. Imagine how cool the shoes are, how good you look, and how much everyone admires you. Please generate and write down some more positive thoughts and daydreams about this situation."

In the questioning-fantasies condition, instructions on the second screen read, "Maybe not everything about these high-heeled shoes is wonderful. Are they really as cool as you thought? Do you look good? Does everyone admire you? Please generate and write down some negative thoughts and daydreams about this situation."<sup>1</sup>

**Information preference.** Subsequently, participants browsed a website titled *Fashion Facts*, supposedly to provide feedback about the clarity and readability of the information presented on the site. The website contained information about the beneficial and detrimental health consequences of high-heeled shoes, skinny jeans, underwire bras, backpacks, and wide belts, matched for word count, valence, and scientific language. Thus, there were 10 separate pages to be viewed, one page each about the pros and cons of each of the five items. Two of the apparel items (pros and cons) appeared before the pages about high-heeled shoes and two appeared after. The page about the beneficial consequences of wearing high-heeled shoes included, for example, the information, "Women who wear high heels at least 3 times per week have increased muscle tone in their calves and gluteus," and the page about the detrimental consequences of wearing high-heeled shoes included the information, "Wearing heels may result in unsightly growths on your feet such as corns, calluses, hammertoe, bunions, and 'pump bump,'" a bony enlargement on the back of the heel.



**Figure 1.** Predicted difference (seconds) in time reading about the pros minus cons of wearing high-heeled shoes, as a function of fantasies condition and the seriousness of intent to wear the shoes, in Study 1

Participants saw a sidebar menu of website content but were only able to read about one topic at a time; once moving to the next page they could not return to previous ones. This ensured that participants visited all pages. Reading time on each page was surreptitiously recorded. For each of the five apparel items, we calculated the difference in time reading about beneficial health consequences minus detrimental health consequences (i.e., time reading pros minus cons).

## Results and Discussion

First, we tested whether positive versus questioning fantasies affected the preference for information about the fantasized topic. Supporting the hypothesis, participants in the positive-fantasies condition spent marginally more time reading about pros versus cons of wearing high-heeled shoes ( $M = 3.92$  s,  $SD = 16.68$ ) than participants in the questioning-fantasies condition ( $M = -3.79$  s,  $SD = 19.74$ ),  $t(75) = 1.85$ ,  $p = .068$ .

Next, we wanted to see whether this difference depended on participants' seriousness of intent to wear high heels in the next year ( $M = 5.17$ ,  $SD = 1.42$ ). We used a linear regression analysis to predict the difference in time reading about pros versus cons of high heels, as a function of fantasies condition (positive versus questioning), seriousness of intent, and their interaction. There was a marginally significant interaction effect,  $t(73) = 1.80$ ,  $p = .075$ , which is depicted in Figure 1. Simple effects tests showed that for those who were not serious about wearing high-heeled shoes (1  $SD$  below the mean seriousness of intent), the positive-fantasies condition produced a stronger preference for reading pros versus cons than the questioning-fantasies condition,  $\beta = .41$ ,

$t(73) = 2.59$ ,  $p = .01$ . However, this difference was not present in participants who were serious about wearing high-heeled shoes (1  $SD$  above the mean seriousness of intent),  $\beta = .01$ ,  $t < 1$ .

Finally, we wanted to see whether the effect of fantasies on information preference was specific to information about the fantasized apparel item. We had a total of five difference scores for time reading pros minus cons: one measurement of preference for information about the fantasized apparel item (high heels) and four measurements of preference for information about other apparel items (skinny jeans, wide belts, underwire bras, backpacks). If these data were analyzed with a typical ANOVA, it would not be possible to use each of the measures of seriousness of intent to wear to predict information preference for only the corresponding item (e.g., using how often the participant expected to wear skinny jeans to predict the difference in time reading about the pros versus cons of the jeans, but not the difference in time reading about the pros versus cons of any other item). Therefore, we used generalized estimating equations (GEE; Schafer, 2006) with robust standard errors, a multilevel analysis that avoids this limitation of the ANOVA approach.

Predictors in the GEE analysis were fantasies condition (between-subjects: positive versus questioning fantasies about high heels), apparel type (within-subjects: high heels versus other apparel items), and seriousness of intent to wear the respective item. To conduct this analysis, data were structured such that each participant had five lines of data that represented each of the five measures of seriousness of intent to wear and the corresponding difference in reading time; each line of data was labeled according to the other predictors (fantasies condition and apparel type). There was a marginally significant three-way interaction effect,  $\chi^2(1) = 3.68$ ,  $p = .055$ . As reported above, the two-way fantasies condition by seriousness of intent interaction effect was marginally significant for time reading the information about high-heeled shoes,  $t(73) = 1.80$ ,  $p = .075$ . A second GEE analysis looking only at time reading about the other four apparel items showed that the fantasies condition by seriousness of intent interaction effect did not approach significance for time reading about these items,  $\chi^2(1) = .26$ ,  $p = .61$ . These results support the hypothesis that differential information preference following the induction of positive versus questioning fantasies would be specific to information about the fantasized apparel item, high-heeled shoes.

These results provide first support for the hypothesis that positive versus questioning fantasies about a desired future shape the preference for information about the consequences of experiencing that future. Because the effect was moderated by the seriousness of intent to bring about that future experience (wear high heels), one might wonder whether those participants who were not serious (who expected to wear high heels only infrequently) actually were able to generate positive fantasies about doing so. We had a naive rater code the written excerpts that participants wrote in response

to the first prompt (this first prompt was identical in both conditions and called for the generation of positive fantasies) using a 1 (*not at all positive*) to 5 (*extremely positive*) scale.<sup>2</sup> There was no substantial relation between seriousness of intent to wear high heels in the upcoming year and the rated positivity of fantasies,  $r(75) = .08, p = .49$ .

Alternatively, one could ask whether participants who had a lot of experience wearing high heels (and so had presumably experienced the not-always-ideal consequences of wearing these shoes) also generated positive fantasies when asked to do so. To address this concern, we asked participants to report how often in the previous year they had worn high heels (which was correlated .79 with the seriousness of intent to wear heels in the upcoming year) and found no correlation between rated positivity of fantasies and this measure of experience,  $r(75) = .13, p = .25$ . These findings support the contention that fantasies are not limited by previous experience or future intent. Moreover, they suggest that the moderating role of seriousness of intent is not due to its potential impact on the generation of positive fantasies. People fantasized positively about wearing high heels regardless of whether they were serious about actually wearing them.

However, people who are serious about the intent to do something can still forgo a specific opportunity to act on it (e.g., not buy *this* house, not wear high-heeled shoes *today*) and doing so might have the same effects on information preference as not being serious about the intent to act in general. That is, declining an opportunity to act could leave people—even those who are very serious about the intent to pursue this future in other instances and at a later point in time—open to the effects of positive fantasies on their information preference. We tested this idea in Study 2. If the mere combination of generating positive fantasies and forgoing an opportunity to act is enough to create a preference for pros over cons, then the effect identified in Study 1 is potentially quite pervasive.

## Study 2: Investments

Study 2 examined information preference in the domain of investing in the stock market. We offered participants a specific opportunity to do so, by inviting them to play a month-long investment game with an attractive prize. Their decision about whether or not to play represented the seriousness of intent to use a relevant opportunity. Note that unlike in Study 1, we examined the seriousness of intent to pursue a specific, imminent opportunity, rather than generally to act toward an imagined future. We induced positive or questioning fantasies about success in the stock market and measured information preference by asking participants to rank-order their interest in reading six articles about investing in the stock market. Included in the list were one article that discussed pros of making money in the stock market and a second that discussed cons of doing so; we calculated the difference in ranking these two articles.

We hypothesized that the positive-fantasies condition would result in a stronger preference for the pro versus the con article than the questioning-fantasies condition, but only for participants who declined the opportunity to play the stock market investment game (i.e., were not serious about immediately acting toward the fantasized future). Moreover, having passed up this opportunity, differential effects of positive versus questioning fantasies on information preference should not depend on how serious participants are about ever investing. That is, declining an opportunity to act should lead people who entertain positive fantasies to prefer pros over cons even if they are serious about realizing the respective future at a later point in time.

We included two additional measures to rule out potential explanations. Specifically, we wanted to verify that the induced positive versus questioning fantasies were something different from just mood or the desirability of the fantasized future. Fantasies might influence mood—previous research has found that imaginary visions of future success elevate positive mood (e.g., Mellalieu, Hanton, & Thomas, 2009; Sheldon & Lyubomirsky, 2006; Tiggemann, Polivy, & Hargreaves, 2009)—but we thought that the key difference between positive and questioning fantasies was the way that they depicted the imagined future, not possible differential effects on mood. Likewise, one could suspect that imagining an idealized future makes that future seem more desirable, although one could also posit that imagining such a bright future leads people to downplay its desirability so as not to be disappointed if it is not achieved. As with moods, though, any effects on the perceived desirability of the fantasized future should only be ancillary consequences of the way that positive versus questioning fantasies depict the future. Thus, the effects of positive versus questioning fantasies should be present over and above any differences in mood or desirability.

## Method

**Participants and Design.** Participants were 207 individuals (145 males, 62 females) recruited through [www.mturk.com](http://www.mturk.com) and paid US\$0.25 for participation. As described in more detail below, one participant also received a US\$200 Amazon.com gift certificate. Their ages ranged from 18 to 66 ( $M = 29$  years,  $SD = 9.12$ ), and 80% were living in a country outside the United States.

Participants were randomly assigned to a positive-fantasies ( $n = 104$ ) or questioning-fantasies ( $n = 103$ ) condition. The dependent variable was the difference in ranking of information about pros versus cons of making money in the stock market.

**Procedure and Materials.** Participants were recruited to complete a survey and “share your thoughts about the stock market.” They filled out the survey on their own computers during their own time, although the entire survey had to be completed in 24 hr.

**Seriousness of intent.** The cover story indicated that the study investigated how people's thoughts about the stock market may change depending on whether they are currently invested in the market. Participants were told that the researchers had organized an online stock-trading game for the upcoming month. They were given some details about how the game would transpire and learned that the player whose portfolio was the most successful at the conclusion of the game would be given a US\$200 Amazon.com gift certificate as a prize. Participants then read, "At this point, you have the option to be included in the stock market trading game," and they were asked to indicate *Yes* if they expected to participate (i.e., were serious about the intent to immediately pursue the fantasized future) and *No* if not (i.e., were not serious about that intent).

We wanted to verify that the effect of positive versus questioning fantasies on information preference would be present in all participants who did not intend to play the trading game, regardless of how serious they were about the intent to invest in stocks in the future. So, after assessing the dependent variable, we asked participants, "How likely are you to invest in the stock market at some point in the future?" with a response scale ranging from 1 (*not at all*) to 7 (*extremely*).

**Fantasies.** Participants were asked to generate a particular type of thought about their future as it pertained to investing in stocks. In the positive-fantasies condition, instructions read as follows:

Please imagine that you have invested in the stock market, and are very successful. With the money that you make, you are able to travel, shop, and live life to the fullest. Think about how wonderful it would be to make your decisions with no regard to cost.

In the questioning-fantasies condition, instructions read,

Please imagine that you have invested in the stock market. Would you be very successful? Maybe you'd make a lot of money, but maybe you wouldn't. If you did make a lot of money, you would be able to travel, shop, and live life to the fullest. Think about how wonderful it would be if you were able to make your decisions with no regard to cost.

In both conditions, participants were asked to write down all the thoughts and images that came to mind.

**Information preference.** Participants read, "Now, we are interested in learning more about what type of information about the stock market you would prefer to receive." Participants were provided a list of six articles (order of presentation was randomized across participants) and asked to rank them to reflect which they would most and least like to read.

One article discussed pros of making money in the stock market: "*Money Ain't a Thing*: Three successful investors talk about how great life is when your pockets are full." A

second article discussed cons of making money in the stock market: "*Poor Little Rich Investor*: Market success may bring wealth, but wealth does not necessarily bring happiness, research finds." The additional four articles were fillers that pertained to useful information about investing. For example, one of the filler articles was titled "*Black Gold Changes the Game*: What you need to know about how the oil market will affect stocks in the next 6 months."

Each article was given a number to reflect its position in the list, from 6 (*most preferred*) to 1 (*least preferred*). As the dependent variable, we calculated the difference in ranking the pro minus con information.

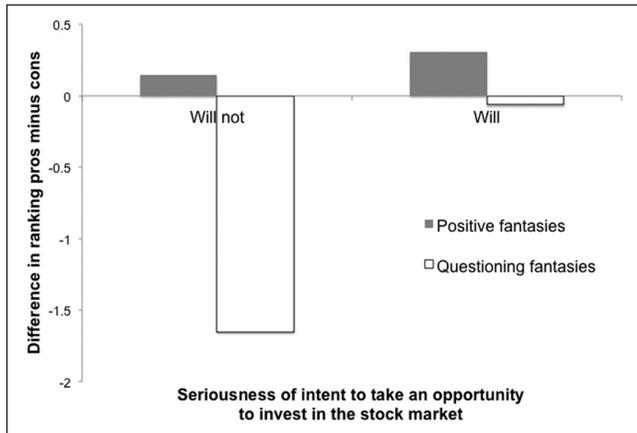
**Control variables: Mood and desirability.** Control variables were assessed after information preference. We asked participants to report their current mood using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) and computed the mean of the 10 items for positive mood ( $\alpha = .90$ ) and the mean of the 10 items for negative mood ( $\alpha = .92$ ). The desirability of stock market success was measured by asking participants, "How much would you like to be successful in the stock market?" The response scale ranged from 1 (*not at all*) to 7 (*extremely*).

## Results and Discussion

Like in Study 1, we first tested whether positive versus questioning fantasies affected the preference for information about the fantasized topic. Participants in the positive-fantasies condition ranked the pro-investment article more favorably relative to the con-investment article ( $M = .29$ ,  $SD = 2.29$ ) than participants in the questioning-fantasies condition ( $M = -.42$ ,  $SD = 2.71$ ),  $t(205) = 2.02$ ,  $p = .04$ . This result conceptually replicates Study 1.

Examining the control variables, we saw that fantasies condition did not affect positive mood,  $t(205) = 1.23$ ,  $p = .22$  ( $M_{\text{pos}} = 3.57$ ,  $SD = .78$ ;  $M_{\text{ques}} = 3.43$ ,  $SD = .89$ ) or negative mood,  $t(205) = .19$ ,  $p = .85$  ( $M_{\text{pos}} = 2.02$ ,  $SD = .89$ ;  $M_{\text{ques}} = 2.04$ ,  $SD = .84$ ). A difference did emerge when it came to desirability: the positive-fantasies condition led participants to report that the fantasized future (being successful in the stock market) was more desirable,  $t(205) = 2.12$ ,  $p = .04$  ( $M_{\text{pos}} = 5.84$ ,  $SD = 1.48$ ;  $M_{\text{ques}} = 5.39$ ,  $SD = 1.57$ ). We included all three variables as covariates in the subsequent analyses to ensure that the effects of fantasies and seriousness of intent were present over and above variations in mood and desirability.

Next, we wanted to see whether the fantasies condition differences in information preference depended on participants' seriousness of intent to play the stock market game. We entered the difference in ranking pros minus cons as dependent variable in an ANOVA with the predictors fantasies condition (positive versus questioning), seriousness of intent to play the stock market game (will versus will not), and their interaction, plus mood and desirability as covariates. This analysis showed an interaction effect of fantasies



**Figure 2.** Estimated marginal mean difference in ranking of information about the pros minus cons of making money in the stock market, as a function of fantasies condition and the seriousness of intent to invest in the stock market, adjusting for mood and desirability, in Study 2

condition by seriousness of intent,  $F(1, 200) = 4.31, p = .04$ ; estimated marginal means are depicted in Figure 2. The pattern of the interaction effect replicated the findings of Study 1. Among participants who did not take the opportunity to invest by playing the stock market game, those in the positive-fantasies condition had a stronger preference for the pro versus con article than those in the questioning-fantasies condition,  $F(1, 44) = 7.99, p = .007$ . Among participants who did take this opportunity, fantasies condition did not affect information preference,  $F(1, 153) = .20, p = .66$ .

Of the covariates, desirability was significantly related to the preference for pros versus cons,  $b = .31 (.13), F(1, 200) = 6.00, p = .02$ . Negative mood also marginally related to the preference for pros versus cons,  $b = .36 (.21), F(1, 200) = 3.00, p = .09$ ; positive mood was unrelated to information preference,  $F < 1$ . Importantly, the interaction effect of fantasies condition by seriousness of intent, as well as the difference between the positive and questioning-fantasies conditions in participants who chose not to play the stock market game, was present over and above these covariates. These findings indicate that fantasies do not influence information preference via mood or the desirability of a fantasized future.

Finally, we verified that the effect of positive versus questioning fantasies in participants who did not intend to play the stock market game was present regardless of how serious they were about investing at some point in the future. Very few participants (2.9%) responded *not at all* when asked how likely they were to invest at some point in the future, and the average seriousness of intent to ever invest was rather strong ( $M = 5.23, SD = 1.51$ ). In a generalized linear model analysis, there was no three-way interaction effect of fantasies condition by seriousness of intent to play the game by seriousness of intent to ever invest,  $\chi^2(1) = .83, p = .36$ . For participants who did not intend to play the trading game,

positive versus questioning fantasies differentially affected information preference, regardless of how serious they were about investing at some point in the future. This finding suggests that the effects of positive fantasies on information preference are applicable even to people who are serious about the intent to pursue a given future. Encountering a relevant opportunity to act—that they were not serious about taking—made these participants vulnerable to the effects of positive fantasies on information preference.

Although positive versus questioning fantasies shaped the preference for information over and above differences in the perceived desirability of that future, it seems that desirability should be a prerequisite for observing this effect. Previous research found that imagining a positive future (versus contrasting that future with thoughts of the obstacles that could prevent it) only made a difference when the fantasies pertained to a desired future (Oettingen, 2000, Study 2). That study measured goal commitment (e.g., willingness to exert effort, anticipated disappointment in case of failure), but the same prerequisite might apply when it comes to information preference. When an imagined future is undesired, even depicting it as an idealized best-case scenario in one's fantasies should not be a very positive experience. Positive fantasies about an undesired future, then, should not be something that people would necessarily desire to bolster and maintain. This would be an important boundary condition of the effect identified in Studies 1 and 2, so we tested this boundary condition in Study 3.

### Study 3: Travel

Studies 1 and 2 indicated that the effects of fantasies on selective information preference are stronger when people are not serious about the intent to pursue the fantasized future. Accordingly, in Study 3, we induced positive or questioning fantasies about trips that participants did not seriously intend to take. Half of the participants had to generate these fantasies about traveling to a desired location, the other half about traveling to an undesired location.

Information preference was measured by having participants choose one of five reviews of a trip to the destination about which they had fantasized; the reviews ranged from extremely con (one star) to extremely pro (five stars). We expected that participants in the positive-fantasies condition would prefer pro information about the trip more so than participants in the questioning-fantasies condition, but only when the fantasies and information pertained to the desired trip.

### Method

**Participants and Design.** Participants were 188 individuals (58 males, 130 females) living in the United States who were recruited through [www.mturk.com](http://www.mturk.com) and paid US\$0.50 for participation. Their ages ranged from 18 to 81 ( $M = 34$  years,  $SD = 12.34$ ). Additional individuals completed the study

materials but were excluded from analysis as described in more detail below.

Participants were randomly assigned to one cell of the 2 (fantasies: positive versus questioning)  $\times$  2 (topic: desired versus undesired trip) between-subjects design ( $n_s = 40\text{--}54$ ). The dependent variable was the selection of one of five reviews, ranging from strongly con to strongly pro.

**Procedure and Materials.** Participants completed the study on their own computers during their own time, although the entire study had to be completed in 24 hr.

**Desired versus undesired future.** Participants were shown a list of 12 destinations (e.g., Maui, Hawaii; Sydney, Australia; Warsaw, Poland; Mogadishu, Somalia) and asked to pick the trip they would most like to take and the trip they would least like to take. The instructions specified that each of these should be a trip that the participant was unlikely to actually take in the upcoming year. That is, participants were instructed to identify trips that they were not seriously considering taking.

To verify that participants were not serious about considering the trips, we asked participants for each trip, “How likely are you to visit [destination]?” They indicated their intentions on a 1 (*not at all*) to 7 (*extremely*) scale. Sixteen participants gave a 5, 6, or 7 in response to the measure of seriousness of intent for the relevant trip (i.e., the one that the fantasies manipulation pertained to). These participants were excluded from analysis and are not included in the “Participants” section above.

As a manipulation check of the desirability of the trips, we asked participants of each trip, “How much would you like to visit [destination]?” which they answered on a 1 (*not at all*) to 7 (*extremely*) scale. As intended, participants reported that they would much rather take their desired trip ( $M = 6.34$ ,  $SD = 1.20$ ) than their undesired trip ( $M = 1.30$ ,  $SD = .86$ ),  $t(187) = 45.40$ ,  $p < .001$ . After answering these questions, participants were randomly assigned to complete the fantasies manipulation about either the desired or the undesired trip.

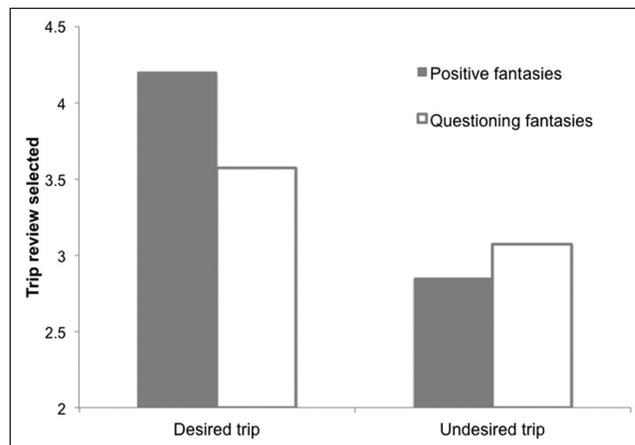
**Fantasies.** Participants read, “Now we want you to imagine yourself taking the trip to [destination].” In the positive-fantasies condition, they read,

Visualize yourself on the trip and how wonderful everything is. From the first day to the last, everything is great. Imagine the things you’re doing on the trip, how smoothly everything goes, and how much fun you’re having.

In the questioning-fantasies condition, they read,

Visualize yourself on the trip. Is everything wonderful? From the first day to the last, maybe everything is great, but maybe it’s not. Imagine the things you’re doing on the trip—does everything go smoothly? How much fun are you having?

Participants in both conditions were asked to write down the thoughts and images that came to mind.



**Figure 3.** Strength of pro-trip review chosen, as a function of fantasies condition and topic (desired or undesired trip), in Study 3

**Information preference.** Participants read, “On www.tripadvisor.com people post descriptions and reviews of their trips. Now we would like to give you the chance to learn more about traveling to [destination].” They were asked to select one of five reviews to read. The reviews were titled “Best trip ever! I loved it,” “Great times, good memories,” “I’d say just OK,” “Not all bad, but not good,” and “Go somewhere else! One of the worst vacations we’ve had,” and illustrated with five, four, three, two, or one star, respectively. For the purpose of analysis, we assigned numerical values of 1 (*strongly con*) to 5 (*strongly pro*) to the reviews based on the number of stars they depicted.

After participants made their selection, they were presented with a message indicating that the browser could not establish a connection to the server where the review was hosted (only one participant expressed the suspicion that this was not genuine). They completed demographic questions before being thanked for their participation.

## Results and Discussion

Unlike in Studies 1 and 2, we did not first test whether positive versus questioning fantasies affected the preference for information about the fantasized topic, because we expected this difference to emerge only when the positive versus questioning fantasies pertained to the desired (rather than undesired) trip. To test this hypothesis, we entered information preference, as indicated by the trip-review selection, as dependent variable in an ANOVA with the predictors fantasies condition (positive versus questioning), topic condition (desired versus undesired trip), and their interaction. This analysis showed an interaction effect of fantasies condition by topic condition,  $F(1, 184) = 3.55$ ,  $p = .06$ , which is depicted in Figure 3.

Among participants who fantasized about the desired trip, those in the positive-fantasies condition preferred information that was more strongly pro ( $M = 4.20$ ,  $SD = 1.32$ ) than those

in the questioning-fantasies condition, ( $M = 3.57$ ,  $SD = 1.53$ ),  $t(92) = 2.12$ ,  $p = .04$ . Among participants who fantasized about an undesired trip, those in the positive-fantasies condition ( $M = 2.85$ ,  $SD = 1.67$ ) did not differ from those in the questioning-fantasies condition ( $M = 3.07$ ,  $SD = 1.62$ ),  $t(92) = .65$ ,  $p = .52$ .

These results establish a boundary condition for the effects of positive versus questioning fantasies. Such fantasies appear not to have the power to transform the preference for information about just any topic; instead, the topic itself must be one that the individual finds desirable. Although this desirability does not account for the effects of fantasies (as indicated by supplemental analysis in Study 2), it seems to be a prerequisite for seeing the effects of positive fantasies on information preference.

## General Discussion

When people are implementing their goals or intentions of doing something, they prefer to hear about the pros rather than cons of doing so (Gollwitzer & Moskowitz, 1996; Hart et al., 2009; Smith et al., 2008). The present three studies show that it is not only implementing intentions that influences information preferences in this way—positive fantasies about an idealized future experience do so too. Apparently by creating the desire to maintain the pleasant imagery, positive fantasies mimic some of the effects of actually pursuing the imagined future.

After generating positive rather than questioning fantasies, participants spent more time reading about the health pros versus cons of wearing high heels (Study 1), more strongly preferred to read about the pros versus cons of stock market success (Study 2), and chose a more strongly pro review of traveling to a particular destination (Study 3). The effects in Studies 1 and 2 are particularly striking because they occurred most markedly among participants who were not serious about the intent to wear the shoes or to accept an opportunity to invest. Little previous research has considered information preference at this stage, and whether people might actually have preferences for one or the other type of information. Instead, previous research has focused on how people prefer to acquire information once they reach the point of seriously deliberating about or actually implementing a goal (Gollwitzer & Moskowitz, 1996). The present results shed light on why people might have already acquired more information about the pros rather than cons of potential goal pursuits by the time they start deliberating whether or not they should actually pursue the goal. Even if they later carefully deliberate on the information they have acquired, the previous selective acquisition of pros could lead to less than optimal decisions.

However, there may also be beneficial consequences of positive fantasies for information preference. The use of fantasies or mental images for exploring possible futures is well documented (e.g., Day, Borkowski, Punzo, & Howsepian,

1994; Fredrickson, 1998; Gilbert & Wilson, 2007; Markus & Nurius, 1986; Oyserman, Bybee, & Terry, 2006). Unless people can imagine the possibility of a favorable future, they have no reason to ever consider whether to strive for it. Positive fantasies, by leading people to acquire information about the pros of potential goal pursuits, might play a key role in transforming these fantasies into a goal or intention to pursue, or at least to seriously consider.

When an object or future experience cannot be immediately pursued, positive fantasies should be important for keeping the idea alive to be sought at a later time. Langens (2002) argued, “The pursuit of long-term goals may benefit from daydreaming because the mental representation of a desirable future state may help people to sustain the motivation to strive for their goals in times when goal pursuit is not possible or feasible” (p. 104; see also Lazarus, Kanner, & Folkman, 1980). When something is a mere wish—the desire to see China or to adopt a pet—positive fantasies may ensure that the wish does not slip away while its pursuit is prevented—when one cannot afford the trip or lives in an apartment where pets are forbidden, for example. Acquiring information about the pros of implementing the wish should help to keep these dreams alive.

This consideration points out that the relationship between positive fantasies and selective information acquisition may well be bidirectional. In the present studies, we considered the effects of (induced) fantasies on the preference for pros versus cons. It seems likely that access to information about pros helps to fuel positive fantasies, since pro information provides details on which people can draw to fuel their mental imagery.

## Alternative Explanations

Study 2 ruled out two possible explanations for the effects of positive fantasies on information preference. First, we established that positive versus questioning fantasies did not differentially affect mood and that their effects on information preference were present over and above effects of mood. Previous research has found that imaginary visions of future success raise positive mood (e.g., Mellalieu et al., 2009; Sheldon & Lyubomirsky, 2006; Tiggemann et al., 2009). However, any effects on mood should be secondary to the key difference between positive and questioning fantasies: the way that they depict the future.

As outlined above, questioning fantasies create doubt about reaching an idealized future. For instance, one series of studies examined the performance effects of questioning one’s engagement in a future action; participants either thought *that* they would solve anagrams or questioned *whether* they would solve anagrams (Senay et al., 2010). Those who questioned their engagement subsequently performed better, which the authors attributed to the questioning inspiring thoughts about the reasons to pursue the goal and ultimately fostering intrinsic motivation. This interpretation

dovetails nicely with our definition of questioning fantasies depicting a bright future as a possibility, albeit one that may entail obstacles or negative aspects (Oettingen, 2012; Oettingen & Mayer, 2002; Oettingen, Pak, & Schetter, 2001). Dogged by these doubts, even when they pertain to a desired experience, questioning fantasies do not depict the unrestricted bright future that people want to continue to enjoy mentally.

Study 2 also ruled out the possibility that positive versus questioning fantasies affect information preference by changing the desirability of the imagined future. Positive fantasies about stock market success led participants to see this future as slightly more desirable than questioning fantasies, but the differential effects on information preference emerged over and above desirability. This result is in line with findings that desirability does not account for the effects of different ways of imagining the future on goal commitment and attainment (e.g., Oettingen et al., 2001). As has been argued previously (Oettingen & Mayer, 2002), positive fantasies are something more than just perceptions of desirability—although the results of Study 3 suggested that perceived desirability of the topic is a prerequisite for the effects of positive fantasies on information preference.

### Future Directions

One important distinction is that between information preference (i.e., selective exposure to information) and information processing (i.e., the use of information to arrive at a conclusion). Much important work has been done to identify motives for information processing (see summaries by Kunda, 1990; Molden & Higgins, 2005). Such work examines how people use information they have acquired: how deeply is it processed? How well is it recalled? How heavily is it weighted in making a decision? In contrast, the present studies focused on the type of information that people prefer to acquire. Future research might consider whether positive fantasies affect information processing in the same ways that they affect information preference. When people want to generate positive fantasies, perhaps they selectively retrieve information that will help them do so—a bored employee might use all the favorable information she has learned about vacations in Hawaii to fabricate positive daydreams about a hypothetical vacation that she would not seriously consider taking.

Future research might identify individuals who are especially prone to generate positive fantasies and show selective information acquisition. For instance, people high in the need for cognitive closure—either because of individual differences or due to situational pressures—are more resistant to persuasion than those lower in the need for closure, once they have an initial informational basis for an opinion (Kruglanski, Webster, & Klem, 1993). It would be interesting to know whether people high in the need for closure are particularly likely to

generate positive rather than questioning fantasies as they consider possible future actions. If so, they might accumulate information about the pros rather than the cons of acting, leading to potentially problematic decisions as well as a resistance to changing those decisions even when they go bad.

### Conclusion

Positive thinking, in the form of envisioning good things coming, has been blamed for precipitating social problems, including the poor investments that spurred financial crisis. One critic took issue with a philosophy that she described in this way:

“visualizing” something—ardently and with concentration—actually makes it happen. You will be able to pay that adjustable-rate mortgage or, at the other end of the transaction, turn thousands of bad mortgages into giga-profits if only you believe that you can. (Ehrenreich, 2008, para. 2)

The present three studies highlight one way that fantasies about an idealized future may indeed lead to poor decisions. Such fantasies create a preference for information about pros rather than cons, particularly when people are not yet serious about pursuing the realization of the future. Turning away from contradictory information allows idealized fantasies to be enjoyed untarnished, but may lead to shunning potentially helpful resources for decision making. Simply dreaming it, then, is not the key to making dreams become true.

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## Notes

1. Systolic blood pressure was measured before and after this manipulation. Partial results are reported in Kappes and Oettingen (2011, Study 1).
2. To verify the reliability, a second rater rated 15 excerpts. As reliability was adequate ( $r = .60$ ), only the ratings of the first rater were used.

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