

Why Happiness Helps You See the Big Picture

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We propose that a positive mood, by signaling that a situation is benign, might allow people to step back and take in the big picture. As a consequence, a positive mood might increase abstract construal and the adoption of abstract, future goals. In contrast, a negative mood, by signaling not only danger but also its imminence, might focus attention on immediate and proximal concerns and reduce the adoption of abstract, future goals.

Ever consider that the pictures of your children smiling on your refrigerator door do more than just make you feel good—that they possibly help you make better and healthier food choices? Might the funnies in the newspaper do more than just make you laugh; do they actually help you get a broader perspective of the daily news? And feeling happy (vs. unhappy) would your food choices or perspective on world issues be any different if you were focused on *why* health or news is important to your future instead of *how* you should improve your health or gain information in the moment?

On the one hand, existing research has argued that a positive mood plays an adaptive role in human functioning (Aspinwall 1998; Isen and Labroo 2003; Raghunathan and Trope 2000). It broadens attention and allows people to focus on future opportunities (Fishbach and Labroo 2007). Therefore, with respect to the foregoing example, a positive mood will signal that long-term goals are an opportunity not to be disengaged from and result in healthy food choices and a broader perspective on the news. However, other research has argued that a positive (vs. negative) mood signals that all is currently well (Andrade 2005; Pham 1998; Schwarz and Clore 1983). Therefore, with respect to the foregoing examples, this latter stream of research would make the opposite prediction; that is, a positive mood will signal that in the moment regulation is not needed, and the person will readily indulge in rich foods and not bother about today's news.

Integrating these findings and building on the mood-as-information perspective (Schwarz and Clore 1983), we argue that by signaling that a situation is benign, a positive mood allows people to distance themselves psychologically from the situation. Psychological distancing results in taking a broader perspective, or seeing the big picture

(Bar-Anan, Liberman, and Trope 2006; Liberman, Sagristano, and Trope 2002; Trope and Liberman 2003; Trope, Liberman, and Wakslak 2007); thus, a positive mood increases abstract construal or high-level thinking. In contrast, by signaling not only danger but also its imminence, a negative mood leads people to take a more proximal perspective, which results in concrete low-level construal. A consequence of seeing the big picture is that compared with people in a negative mood, those in a positive mood not only adopt abstract, future goals and work harder toward attaining them, but also reduce their efforts when goals are proximal or concrete.

In what follows, we present a construal account of mood and then five experiments. We conclude with a discussion of how the findings provide a theoretically new interpretation of mood effects.

## **THEORETICAL BACKGROUND**

It is well accepted that a positive mood signals that the immediate environment is benign and that a negative mood signals imminent danger (Schwarz and Clore 1983). As a consequence, happy people reduce the amount of attention to and effort toward any task in which they are currently engaged, whereas unhappy people become more cautious and vigilant with regard to such tasks (Bless et al. 1990). This view is also compatible with research showing that a positive mood signals to the motivational system the attainment of sufficient progress toward the accomplishment of current goals, indicating that effort can now be conserved. In contrast, a negative mood signals a large discrepancy between a person's current state and his or her immediate goals and thus prompts additional effort in

the moment to accomplish ones goals (Carver and Scheier 1998; Hsee and Abelson 1991). Thus, a positive mood reduces effort and attention to tasks being engaged in currently and lowers openness to new information.

However, other findings point to an adaptive role of a positive mood; specifically, a positive mood enhances efforts to attain future well-being, encourages broader and flexible thinking, and increases openness to information (Aspinwall 1998; Bakamitsos 2006; Bless et al. 1996; Isen 2001; Isen and Labroo 2003; Roehm and Sternthal 2001). For example, consumers in a positive (vs. less positive) mood regulate their actions to attain future well-being (Aspinwall 1998). They also use their mood as currency to overcome challenges (Raghunathan and Trope 2001); for instance, caffeine drinkers are more likely to look at negative information pertaining to the consumption of caffeine when feeling happy (vs. unhappy). This tendency to focus on long range goals might also relate to their ability to engage in broader and flexible thinking, because broad and flexible thinking is associated with accomplishment of long range goals and future concerns (Fujita et al. 2006; Liberman, Sagristano, and Trope 2002).

For example, participants in a positive (vs. negative) mood are more likely to report that unusual brand extensions fit with the parent brand (Barone, Miniard, and Romeo 2000), spontaneously sort a mixed list of products by category (Lee and Sternthal 1999), endorse borderline exemplars (camel) as members of a category (transport; Isen and Daubman 1984), form broader consideration sets (view unusual foods as snacks; Kahn and Isen 1993), and engage in global visual processing (seeing a larger shape rather than several smaller objects that constitute the object; Gasper and Clore 2002). Taken together, all these findings are consistent with happy participants seeing the big picture

and demonstrating an abstract (high) level of thinking, which is characterized by a focus on superordinate or general features of products or objects. In particular, any product (e.g., soda) might be construed at a high level in terms of its superordinate category membership (e.g., beverage) or at a low level in terms of subordinate exemplars (e.g., Coke), and it is possible that people in a positive mood think at a more abstract, or high, level.

Why might a positive mood increase abstract construal, and why might abstract construal explain why happy people disengage from some current tasks (e.g., Bless et al. 1990) but demonstrate broad thinking or work harder to accomplish other tasks (e.g., Isen 2001)? Ample evidence supports the notion that situations that are benign are viewed as psychologically distant, whereas situations that are threatening are viewed as imminent and feel psychologically close (Herzog, Hansen, and Wänke 2007; Trope, Liberman, and Wakslak 2007). Therefore, if a positive mood implies that a situation is benign (Schwarz and Clore 1983), it might result in psychological distancing from the situation, which in turn could result in abstract construal, or seeing the big picture.

Thus, people in a positive mood might feel licensed to step back from the situation which results in their taking in the big picture. As a result, a positive mood might increase a focus on higher-order, primary, abstract representations of the situation and the adoption of abstract, future goals. In contrast, by signaling not only danger but also its imminence, a negative mood might lead to a more proximal focus. A proximal focus is characterized by a focus on lower-order details of the situation in an attempt to deflect the imminent threat (Pennington and Roesse 2003). This implies that respondents in a positive (vs. negative) mood might disengage from important but immediate,

concrete goals. However, by seeing the big picture, they should be better able to perceive the benefits of engaging in activities that provide long-term rewards, consider future activities more important than immediate ones, and adopt whichever abstract goal is accessible.

In five experiments, we investigate whether this is the case. We begin by demonstrating the basic effect—that positive cues (experiment 1a) and positive mood (experiment 1b) evoke abstract construal. Then, in accordance with a construal-level account, we demonstrate that participants in a positive (vs. negative) mood view abstract goals as more important and concrete goals as less important (experiment 2a) and prefer products with abstract, future-oriented benefits (experiment 2b). Finally, we demonstrate that by increasing abstract construal, a positive mood results in an increased adoption of whichever abstract goal is accessible (experiment 3). We argue that these findings are not only compatible with but also offer a new lens through which to view the mood-as-information perspective (Schwarz and Clore 1983).

### **EXPERIMENT 1A: SMILING BULLETS AND ABSTRACT CONSTRUAL**

Experiment 1a investigates the question: Do positive cues induce abstract construal? To test this basic proposition, participants completed Vallacher and Wegner's (1989) personal agency questionnaire, a standard test of construal level that requires participants to provide descriptions of each of several activities, which are subsequently coded for level of construal. To test whether positive cues alter the construal level of an activity, each activity was listed next to a smiling (☺), a neutral (☹), or a frowning (☹)

bullet point. Otherwise, the activities were identical across the three conditions. If positive cues induce abstract construal, then the mere association of these bullet points will alter the level at which the activities are construed. On the basis of existing research, it might be predicted that the cues will lead to valence-congruent descriptions of the activities; however, unless valence either corresponds with or alters construal, there is no reason to predict an effect on the construal level of the descriptions. The type of bullet point served as a between-subjects factor, and the activities served as within-subjects replications of construal level.

## Method

Fifty-eight undergraduate students at the University of Georgia participated in an experiment in which they were asked to describe activities. Each participant provided the first description that came to mind for each of ten activities, which were a subset of those used in Vallacher and Wegner's (1989) study. The instructions indicated that a task can be described in many ways. For example, an activity such as painting a room can be described as beautifying the environment or as choosing a favorite color of paint. On the next page, participants saw a list of different activities and were instructed to provide a description for each activity. Subsequently, two independent coders coded these descriptions for abstractness (intercoder  $r = .86$ ). To test whether a positive (vs. negative) cue elicits abstract construal, items in the survey were listed next to smiling (☺), neutral (☹), or frowning (☹) bullet points. Next to each activity, there was a blank space to fill in a response.

## Results

Each participant's responses to the ten activities were coded for level of construal. For each activity, a response that described the "why" aspect of the activity was coded as abstract and was assigned a value of 1. When a response described the "how" aspect of the activity, it was coded as concrete and was assigned a value of 0. The ratings for each of the ten responses were summed and averaged to form an index of overall abstractness of responses.

*Hypothesis testing.* A one-way analysis of variance (ANOVA), with type of bullet point as the independent variable and the index of abstract construal as the dependent variable, revealed a main effect of type of bullet point ( $F(2, 55) = 19.14, p < .01$ ). Planned contrasts revealed that participants in the smiling-bullet condition were likely to construe the activities more abstractly ( $M = .60$ ) than participants in neutral-bullet condition ( $M = .34; t(40) = 3.93, p < .05$ ). In addition, participants in the frowning-bullet condition were likely to construe the activities less abstractly ( $M = .17$ ) than participants in neutral-bullet condition ( $M = .34; t(34) = 2.49, p < .05$ ). These data show that merely associating a positive cue with an activity evokes an abstract construal. A seemingly irrelevant smiling, neutral, or frowning bullet point next to a statement describing an activity systematically influenced the level at which participants construed the activity.

*Additional analysis.* It is possible that the cues evoked valence-congruent descriptions of the activities that somehow corresponded with construal but did not evoke construal directly. For example, Eyal and colleagues (2004) report that people with an abstract construal generate more positive or pro arguments. If positive arguments are also somehow more abstract, it is possible that positively (vs. negatively) cued participants

simply generated more positive arguments that happened to be abstract and that cue did not affect construal directly. To test for this possibility, the response to each activity was coded for valence ( $-1 = \text{negative}$ ,  $0 = \text{neutral}$ , and  $1 = \text{positive}$ ;  $r = .87$ ), and the ratings to the ten responses were summed and averaged to form an index of overall positivity of responses for each participant. A one-way ANOVA, with type of bullet point as the independent variable and the positivity index as the dependent variable, revealed a main effect of type of bullet point, ( $F(2, 55) = 2.46, p < .10$ ), though the effects were only directional ( $M_{\text{smiling bullet}}$  vs.  $M_{\text{neutral bullet}}$  vs.  $M_{\text{frowning bullet}} = .19$  vs.  $.08$  vs.  $-.03$ , respectively). Correlation analysis confirmed a significant correlation between abstractness scores and positivity scores ( $r = .52, p < .001$ ).

Was the effect of cue on construal level caused by positivity of associations, or did cues evoke construal directly? To test this, we regressed the construal index onto cue ( $\beta = .22, SE = .04; t(57) = 6.16, p < .01$ ), we regressed the positivity index onto cue ( $\beta = .11, SE = .05; t(57) = 2.23, p < .05$ ), and we regressed the construal index onto the positivity index ( $\beta = .49, SE = .10; t(57) = 4.55, p < .01$ ). When we regressed the construal index onto cue and included the positivity index as a covariate (cue  $\rightarrow$  positivity  $\rightarrow$  construal), the effects of both positivity ( $\beta = .34, SE = .09; t(57) = 3.81, p < .01$ ) and cue ( $\beta = .18, SE = .03; t(57) = 5.49, p < .01$ ) remained significant, suggesting that cue exerted an effect on construal that was independent of positivity of association. In contrast, when we regressed positivity index onto cue and included the construal index as a covariate (cue  $\rightarrow$  construal  $\rightarrow$  positivity), we observed a significant effect of construal ( $\beta = .61, SE = .16; t(57) = 3.81, p < .01$ ) but not of cue ( $\beta = .03, SE = .05; t(57) < 1$ ). Thus, the effect of cue on positivity of response was mediated by construal level

(Sobel  $z = 3.13, p < .01$ ), but positive cues evoked abstract construal independent of positivity of response. Presumably, if the situation feels benign, psychological distancing and seeing the big picture is independent of additional positive information coming to mind, but psychological distancing brings additional positive information to mind.

The finding that abstract construal increases positivity of responses is compatible with the literature. For example, Vallacher and Wegner (1987) demonstrate that difficulty (ease) or feelings that actions are going poorly (well) are associated with low-level (high-level) construal. In addition, Eyal and colleagues (2004) demonstrate that an abstract (vs. concrete) construal leads to a greater focus on pros or positive arguments, and positive arguments might correspond with a positive mood. We show that positive cues activate abstract construal and that this is not because the associations with the cues are positive. Importantly, neutral-condition participants were somewhat more concrete than abstract, indicating that it is unlikely that the items included in the list were somehow more compatible with abstract construal. In summary, experiment 1a demonstrates that positive cues evoke an abstract construal. Experiment 1b tests whether manipulated mood also evokes construal level and results in similar effects.

### **EXPERIMENT 1B: MOOD AND CONSTRUAL LEVEL**

Experiment 1b is similar to experiment 1a, except that instead of associating bullet points with Vallacher and Wegner's (1989) questionnaire items, we manipulated participant's mood before they completed a survey. We used three different replications of the construal task: Vallacher and Wegner's open-ended survey and their forced-choice

survey and an adaptation of Peterson and colleagues' (1982) attribution style questionnaire.

## Method

One hundred twenty-nine undergraduate students at the University of Georgia participated in an in-class experiment on consumer decision making. Participants were randomly assigned to a positive- or negative-mood condition and completed two purportedly unrelated questionnaires. The first task was the mood-induction task. In an open-ended questionnaire, participants described either the happiest day or the unhappiest day of their life (Schwarz and Clore 1983). The instructions emphasized that they should try to imagine the event as vividly as possible and to relive the feelings they experienced at that time. When participants completed this task, they indicated how the task made them feel (1 = very unhappy, 7 = very happy).

The second questionnaire measured participants' processing style. Participants were randomly assigned to complete one of three possible replications of an event-description task. Approximately one-third of the participants completed the open-ended version of Vallacher and Wegner's (1989) personal agency questionnaire, which we also used in experiment 1a. Participants then described each of ten activities as best they could. The instructions and abstractness coding procedures were identical to those used in experiment 1a (abstract = 1, concrete = 0;  $r = .88$ ). Approximately one-third of the participants completed a forced-choice version of Vallacher and Wegner's personal agency questionnaire. The forced-choice questionnaire was identical to the open-ended questionnaire, but each activity was followed by two statements. One statement was

associated with abstract construal and addressed the “why” aspect of the activity. The other statement was associated with concrete construal and addressed the “how” aspect of the activity. Participants chose the statements that they believed best represented the activity. The remaining participants completed Peterson and colleagues’ (1982) attribution style questionnaire. Participants were presented with two negative outcomes (“You will not be able to complete your work,” and “You will go out on a date, and it will go badly”). They were asked to imagine each scenario vividly and to indicate a major cause of it. They were told that even though each outcome may have many causes, they should pick only one main cause of the outcome that was happening to them. Each abstract attribution was coded as 1, and each concrete attribution was coded as 0. The scores for each of the two items for each participant were summed and averaged. Participants were then debriefed.

## Results

*Mood manipulation check.* A mood  $\times$  replication ANOVA indicated only a main effect of mood ( $F(1, 123) = 1060.84, p < .01$ ); participants who wrote about a happy life event reported feeling significantly happier ( $M = 6.26$ ) than those who wrote about an unhappy life event ( $M = 1.62, p < .05$ ). No other effects were significant.

*Hypothesis testing.* Each participant’s responses were coded for level of construal, as we described previously (abstract = 1, concrete = 0). The ratings were averaged to form an index of overall abstractness of responses. A mood  $\times$  replication ANOVA, with the construal-level index as the dependent variable, revealed a main effect of mood ( $F(1, 123) = 18.45, p < .01$ ), indicating that participants in a positive mood ( $M = .58$ ) were

more abstract than participants in a negative mood ( $M = .40$ ), and a main effect of replication ( $F(2, 123) = 10.95, p < .01$ ), indicating that participants were more abstract in describing activities when they completed the forced-choice survey ( $M = .54$ ) or the causal attributions survey ( $M = .54$ ) than when they completed the open-ended survey ( $M = .28$ ). As we expected, the mood  $\times$  replication interaction was not significant ( $F(1, 86) = 1.78, p > .15$ ). Thus, regardless of type of replication, participants in a positive (vs. negative) mood were more abstract (open ended:  $M_{\text{positive}} = .42$  vs.  $M_{\text{negative}} = .16$ ;  $t(25) = 3.47, p < .01$ ; forced choice:  $M_{\text{positive}} = .61$  vs.  $M_{\text{negative}} = .46$ ;  $t(61) = 2.46, p < .01$ ; causal attribution:  $M_{\text{positive}} = .65$  vs.  $M_{\text{negative}} = .43$ ;  $t(37) = 2.02, p < .05$ ).

*Additional analysis.* To test whether the effect of mood on construal level was mediated by positivity of associations or resulted directly (presumably because a positive mood would signal that the environment is benign and thus would lead to psychological distancing from the situation, as we propose), we conducted additional analysis similar to that of experiment 1a. However, items in the forced-choice survey are balanced for valence and are almost entirely neutral; therefore, responses to these items could not be coded meaningfully for positivity. In addition, responses to the attributions survey were largely egocentric, and even when a situation was blamed for something negative, the self was made to look good; as a result, coding these surveys for valence was not viable. Thus, responses to the open-ended survey were coded for positivity similar to experiment 1a and revealed similar results. A one-way ANOVA, with mood as the independent variable and the positivity index as the dependent variable, revealed a main effect of mood ( $M_{\text{positive}}$  vs.  $M_{\text{negative}} = .34$  vs.  $.10$ ;  $F(1, 25) = 5.52, p < .05$ ), and correlation

analysis confirmed a relationship between the abstractness scores and the positivity scores ( $r = .73, p < .001$ ).

As in experiment 1a, to distinguish whether the effect of mood on construal level occurred because a positive mood increased positivity of associations that happened to correspond with construal or whether mood changed construal independent of positivity, we conducted additional analysis. We regressed the construal index onto mood ( $\beta = .26, SE = .08; t(25) = 3.46, p < .01$ ), we regressed the positivity index onto mood ( $\beta = .24, SE = .10; t(25) = 2.34, p < .05$ ), and we regressed the construal index onto the positivity index ( $\beta = .60, SE = .11; t(25) = 5.37, p < .01$ ). When we regressed the construal index onto mood and included the positivity index as a covariate, both the effects of positivity ( $\beta = .49, SE = .11; t(57) = 4.29, p < .01$ ) and those of mood ( $\beta = .14, SE = .06; t(25) = 2.25, p < .05$ ) remained significant, suggesting that mood exerted an effect on construal that was independent of positivity of association. In contrast, when we regressed the positivity index onto mood and included the construal index as a covariate, we observed a significant effect of construal ( $\beta = .88, SE = .20; t(25) = 4.29, p < .01$ ) but not of mood ( $\beta = .007, SE = .09; t(25) < 1$ ). Thus, similar to the bullet cues in experiment 1a, mood increased positivity of responses because of construal (Sobel  $z = 2.61, p < .01$ ; Eyal et al. 2004) but evoked abstract construal independent of positive response.

These data extend the findings of experiment 1a to show that participants in a positive mood are likely to construe actions more abstractly than people in a negative mood. Although positive responses corresponded with abstract construal and though abstract construal was more positive than concrete construal, we found that mood exerted an influence on construal independent of valence of association. In line with experiment

1a, it again appears that when the situation feels benign, psychological distancing and seeing the big picture occurs independently of additional positive information coming to mind. In addition, participants who were asked to list causal attributions did so for each of two negative events, which were then coded for the level of abstractness. This further suggests that a positive mood increases abstract construal, regardless of valence of task or associations that come to mind. The findings are consistent with the notion that a positive (vs. negative) mood affects construal by suggesting that the situation is benign, thus allowing for psychological distancing or seeing the big picture.

The purpose of experiments 2a and 2b is to further examine the relationship between a positive mood and abstract construal. In particular, if a positive (negative) mood evokes abstract (concrete) construal, participants in a positive (negative) mood might view goals as more (less) important when they are abstract than when they are concrete. In addition, participants in a positive (negative) mood might find abstract, future-oriented messages more (less) persuasive than immediate, concrete appeals.

## **EXPERIMENT 2A: MOOD AND GOAL IMPORTANCE**

Experiment 2a incorporates current mood as a measured rather than a manipulated variable. Forty undergraduate students at the University of Chicago participated in this study for compensation. They first answered demographic questions and indicated how they felt at the moment (1 = unhappy, 7 = happy). Then, they were randomly assigned to an abstract- or concrete-goal-construal condition. In the abstract-goal condition, participants wrote about *why* they study for an exam, whereas in the concrete-goal

condition, they wrote s about *how* they study for an exam. After this, they indicated how important academic goals are (1 = not at all important, 7 = extremely important) and how positive their thoughts were as they described studying for an exam (1 = negative, 7 = positive).

We conducted a mood  $\times$  construal ANOVA on the goal importance measure, with mood (median split) and construal as independent factors. This revealed only an interaction ( $F(1, 36) = 7.38, p < .01$ ). No other effects were significant ( $F_s < 1$ ). As we expected, participants in a positive (vs. negative) mood indicated that academic goals were more important when they thought about why they studied for exams ( $M = 6.21$  versus 5.17;  $t(36) = 1.69, p < .05$ ), whereas participants in a negative (vs. positive) mood indicated that academic goals were more important when they thought about how they studied for exams ( $M = 6.33$  vs. 5.09;  $t(36) = 2.18, p < .05$ ). In addition, the mood  $\times$  construal ANOVA on the self-report measure of positivity of thoughts revealed only a directional effect of mood; participants in a positive (vs. negative) mood reported more positive thoughts ( $M = 4.88$  vs. 4.13;  $F(1, 36) = 3.52, p < .10$ ).

## **EXPERIMENT 2B: MOOD AND PRODUCTS WITH ABSTRACT BENEFITS**

Participants in a positive, a neutral, or a negative mood evaluated an ad appeal that employed either an abstract or a concrete approach to framing product benefits. We expected that if mood corresponds with construal level, products with abstract framing will be evaluated more favorably by consumers who feel happy than by those who feel unhappy. In contrast, products with concrete framing will be evaluated more favorably by

consumers who feel unhappy than by those who feel happy. This experiment employed a 3 (mood)  $\times$  2 (framing) between-subjects design.

## Method

Ninety undergraduate students at the University of Georgia, all of whom were native speakers of English, participated in this experiment for compensation. Each participant completed an answer booklet that consisted of a mood-induction phase and a test phase. In the mood-induction task, participants were asked to provide their first associations with each of ten positive, ten neutral, or ten negative words. These words have been shown in previous research to induce a positive mood, to maintain a neutral mood, or to induce a negative mood (Fishbach and Labroo 2007), respectively. After completing this task, participants indicated their current feelings (1 = negative, 7 = positive).

Next, participants were shown one of two versions of an advertisement for Simply Orange juice. One advertisement described the product benefits using an abstract, future frame (e.g., “invest in your future health”), and the other advertisement described the product benefits using a concrete, immediate frame (e.g., “ensure your health today”). After viewing the advertisement, participants indicated on a seven-point scale how likely they were to buy the orange juice (1 = not likely to buy, 7 = very likely to buy). In addition, they indicated how much attention they paid to the ad and how arousing the ad was using two seven-point scales (1 = paid little attention, not at all arousing; 7 = paid a lot of attention, very arousing). Then, they responded to some additional questions, including demographic measures.

## Results and Discussion

*Manipulation checks.* A 3 mood  $\times$  2 construal ANOVA conducted on the self-report measure of mood revealed a main effect of mood ( $F(2, 84) = 9.13, p < .05$ ). Participants who provided their first associations with each of ten positive words indicated that their mood was more positive than those who provided their first associations with each of ten neutral words or each of ten negative words. No other effects were significant. Planned contrasts indicated that participants in a positive mood reported feeling more positive ( $M = 4.83$ ) than participants in a neutral mood ( $M = 4.13$ ;  $t(84) = 2.61, p < .05$ ). Furthermore, participants in a negative mood ( $M = 3.52$ ;  $t(84) = 2.02, p < .05$ ) reported feeling less positive than participants in a neutral mood.

A mood  $\times$  construal ANOVA conducted on attention to the advertisement showed that neither of the main effects nor the interaction was significant. This suggests that different groups of participants did not attend to the two advertisements differently (all  $F_s < 1$ ). A mood  $\times$  construal ANOVA conducted on the arousal measure also showed that neither of the main effects nor the interaction was significant (all  $F_s < 1$ ).

*Purchase intent.* The mood  $\times$  construal ANOVA conducted on the purchase-intent measure revealed only an interaction ( $F(2, 84) = 5.25, p < .05$ ). No other effects were significant (mood:  $F(2, 84) = 1.66, p > .15$ ; advertisement:  $F(1, 84) = 2.15, p > .10$ ). As we expected, when participants viewed the abstract advertisement, those in a positive mood indicated higher purchase intent ( $M = 4.11$ ) than those in neutral mood ( $M = 2.76$ ;  $t(84) = 2.55, p < .05$ ) and those in a negative mood ( $M = 2.75$ ;  $t(84) = 2.31, p < .05$ ). In contrast, when participants viewed the concrete advertisement, those in a negative mood

indicated higher purchase intent ( $M = 4.45$ ) than those in a neutral mood ( $M = 3.40$ ;  $t(84) = 1.69$ ,  $p < .05$ ) and those in a positive mood ( $M = 3.41$ ;  $t(84) = 1.72$ ,  $p < .05$ ).

These data show that respondents in a positive mood prefer products that confer future benefits. Note that our effects cannot be explained by heuristic processing or by relying on the notion that a positive (vs. negative) mood reduces attention to tasks at hand. First, experiments 1a and 1b employed standard tests of construal level using Vallacher and Wegner's (1989) questionnaire and demonstrated correspondence between cues/mood and construal level, and the literature (Trope et al. 2007) argues that abstract construal or performance in these tests does not correspond with heuristic processing. Second, the results of experiment 1b demonstrated that participants were more abstract when they completed a forced-choice description task than when they completed an open-ended description task. Presumably, making forced choices is easier than generating activities; therefore, if participants were more likely to be abstract in a forced-choice task than in an open-ended task, the data imply that it was more difficult, not easier, to come up with abstract construal. In addition, if participants preferred to be abstract only as long as it was easy to be abstract, the data imply that abstract construal was easier for people in a positive mood than for those in a negative mood. Third, in experiment 2b, we specifically asked participants for a self-report of their attention to the advertisement. We observed no differences for this measure based on either mood or construal used in the advertisement. Thus, it appears that mood corresponds with construal.

Experiment 3 further tests the relationship between positive mood and abstract construal by investigating whether a positive mood results in the adoption of whichever abstract goal is accessible and the suppression of conflicting goals. For example,

participants studying for an exam might also be faced with a dilemma of wanting to hang out with friends. When an abstract academic goal is accessible, those in a positive mood should exert more self-control and choose to study for the exam more often than those in a negative mood. However, when an abstract goal of hanging out with friends is accessible, participants in a positive mood should choose to study less often than those in a negative mood. Thus, a positive mood will increase adoption of whichever abstract goal comes to mind and reduce self-regulation toward conflicting goals.

### **EXPERIMENT 3: POSITIVE MOOD AND GOAL ADOPTION**

In experiment 3, we cued abstract social goals for half of the participants and abstract academic goals for the remaining participants. Participants were then randomly assigned to a positive- or negative-mood condition. Subsequently, all participants made a choice either to study or to hang out with a friend. If a positive mood leads to abstract construal and if an abstract construal increases the pursuit of abstract goals (Fujita et al. 2006), a positive mood will lead to increased adoption of whichever goal is accessible. That is, when endorsing abstract academic goals, participants in a positive (vs. negative) mood who are more abstract about the academic goal will choose to study. However, when endorsing abstract friendship goals, participants in a positive (vs. negative) mood who are more abstract about the friendship goal will choose to hang out with their friend.

Method

Sixty-nine undergraduate students at the University of Georgia, all of whom were native English speakers, participated in an in-class experiment on decision making.

Participants were instructed that they would be completing four short questionnaires and that they should put each completed survey face down at their workstation.

The first questionnaire, titled “General Questions Survey,” pertained to a goal importance manipulation. In this questionnaire, participants provided their demographic details. In addition, half of the participants were asked to endorse two statements related to abstract academic goals (“In general, investing effort in academic goals is important/good grades are important”; 1 = somewhat, 7 = very important). The remaining participants endorsed statements related to abstract friendship goals (“In general, investing in friendships is important/good friends are important”; 1 = somewhat, 7 = very important; adapted from Fishbach and Labroo 2007). A posttest confirmed that titling the survey in this way and associating the words “In general” with a goal led to abstract (vs. concrete) construal ( $t(9) = 2.24, p < .05$ ). After this, participants completed the mood-induction task. In an open-ended questionnaire, participants described either the happiest or the unhappiest day of their life and then rated the task (1 = boring, bad, unpleasant; 7 = interesting, good, pleasant).

The next task, titled “Task Description Survey,” measured construal level. Participants were instructed that any product (e.g., detergent) can be described in terms of a superordinate category (e.g., cleaning product) or in terms of a subordinate exemplar (e.g., Tide). They were instructed further that they would be provided with the name of a product and that they should list the first associations that came to mind. All participants provided their first associations with the word “soda.” Each participant’s association was

subsequently coded for level of construal. Participants also evaluated their word association in terms of how positive they thought it was (1 = not at all, 7 = very positive), how easy it was for them to come up with the association (1 = not at all, 7 = very easy), how much effort they put into coming up with the association (1 = none, 7 = a great deal), how quickly the association came to mind (1 = very slowly, difficult to generate; 7 = very quickly, easy to generate), how much attention they paid to this task (1 = very little, 7 = very much), how much effort they put into coming up with an unusual association (1 = very little, 7 = very much), and how unusual the association was (1 = not at all, 7 = very unusual).

The final task measured choice between academic pursuits and friendship. All participants were asked to read carefully and imagine themselves in a scenario titled “Making Choices in Daily Life,” which described a situation in which they had to make a choice between studying for an exam and meeting an old and very close friend who happened to be in town for one night (adapted from Koo, Labroo, and Lee 2006). Participants read the following paragraphs (the order of first two paragraphs, except for the first line, was counterbalanced):

Jack is reading his notes for his final exam. Jack has been studying hard and has been over the material several times, but the final is known to be very difficult and the grade from this course is extremely important to Jack. Jack intends to major in this area and feels that his graduate school scholarship may be linked to doing well in this and other similar courses. Academic grades and doing well at college are very important to Jack. Just then, his best buddy from high school, John, unexpectedly calls him on his cell phone. John lives in a different town far away and is visiting only for one night. Jack has not met John in a long while and is unlikely to be meeting with him again anytime soon, because John is going away to college overseas. Jack wants to catch up with his buddy, and John suggests coming over to Jack's place for a few hours. Jack knows that it will be fun to spend time catching up on old times. It's already late in the evening, and Jack wants to spend several more hours reading for his final. On the other hand, John and he go back a long way, and he really wants to spend the time with John.

After reading this scenario, participants answered the following questions: “If you were Jack, how likely would you be to continue studying for the final?” (1 = not at all, 7 = very likely); “If you were Jack, how likely would you be to spend the evening with John?” (1 = not at all, 7 = very likely [reverse coded]); and “If you were Jack, what would you do?” (1 = study for the final, 7 = spend the evening with John [reverse coded]). They also answered additional questions pertaining to the scenario (1 = difficult to read, difficult to imagine, not at all realistic, puts me in a bad mood; 7 = easy to read, easy to imagine, very realistic, puts me in a good mood), and they indicated how much attention they paid to reading and thinking about the scenario (1 = paid little attention, 7 = paid a lot of attention). After this, participants were checked for suspicion, thanked, and debriefed. No participant correctly reported a link between the different questionnaires.

## Results

*Mood manipulation check.* We conducted two separate mood  $\times$  goal ANOVAs on participant’s self-report measures of how the mood-induction task made them feel. As we expected, the two tasks did not differ on interestingness ( $M_{\text{positive}} = 3.63$  vs.  $M_{\text{negative}} = 3.26$ ; all  $F_s < 1$ ). However, a main effect of mood emerged on how good the task was ( $M_{\text{positive}} = 4.13$  vs.  $M_{\text{negative}} = 3.31$ ;  $F(1, 62) = 5.79$ ,  $p < .01$ ) and how pleasant the task was ( $M_{\text{positive}} = 4.29$  vs.  $M_{\text{negative}} = 3.26$ ;  $F(1, 62) = 6.54$ ,  $p < .01$ ).

*Mood and construal level.* The first association of each participant to the word “soda” was coded for whether the association was abstract and superordinate (the following associations were coded as 1: “beverage,” “pop,” “drinks,” “refreshment,” “club,” “carbonated soft drink,” “bubbly drinks”) or concrete and subordinate (the

following associations were coded as 0: “Coke,” “Dr Pepper,” “Coca-Cola,” “Pepsi,” “red can,” “sweet taste”). Note that these associations are relatively ambiguous in terms of valence and could not be meaningfully coded for positivity. A mood  $\times$  goal ANOVA conducted on the abstractness score revealed only an expected main effect of mood ( $F(1, 62) = 8.72, p < .01$ ), indicating that the associations provided by participants in a positive (vs. negative) mood were more abstract ( $M = .53$  vs.  $M = .17$ ; other  $F_s < 1$ ).

We also conducted separate mood  $\times$  goal ANOVAs on the measures that tapped into participants’ evaluations of their associations. None of the effects were significant ( $F_s < 1$ ; association positivity:  $M_{\text{happy}} = 5.24$  vs.  $M_{\text{unhappy}} = 5.25$ ; ease of generation:  $M_{\text{happy}} = 6.67$  vs.  $M_{\text{unhappy}} = 6.60$ ; effort:  $M_{\text{happy}} = 1.86$  vs.  $M_{\text{unhappy}} = 1.79$ ; how quickly the association came to mind:  $M_{\text{happy}} = 6.39$  vs.  $M_{\text{unhappy}} = 6.64$ ; task difficulty:  $M_{\text{happy}} = 6.13$  vs.  $M_{\text{unhappy}} = 6.48$ ; task attention:  $M_{\text{happy}} = 2.28$  vs.  $M_{\text{unhappy}} = 2.31$ ; effort to come up with an unusual association:  $M_{\text{happy}} = 1.58$  vs.  $M_{\text{unhappy}} = 1.97$ ; unusualness of association:  $M_{\text{happy}} = 2.65$  vs.  $M_{\text{unhappy}} = 2.81$ ). Taken together, these data reveal that participants in a positive (vs. negative) mood provided more abstract associations to the word “soda.” These differences in the abstractness of the associations are not accounted for by participants’ perceived differences in positivity or unusualness of the association or how much effort or attention they put into coming up with the association across conditions. It seems that across conditions, participants came up with their associations fairly rapidly, and no differences emerged in how quickly or easily they came up with their association. Therefore, the data suggest that mood altered the level of construal. The effects are not accounted for by self-reported effort or ease in construing an activity.

*Mood and adoption of accessible abstract goals.* We averaged the three items that indicated participants preferences regarding whether, if they were Jack, they would study or hang out with John ( $\alpha = .85$ ; higher numbers indicate a preference for studying), and a mood  $\times$  goal ANOVA revealed only a significant interaction ( $F(1, 62) = 12.20, p < .01$ ; mood:  $F < 1$ , goal  $F(1, 62) = 2.60, p > .10$ ). As we expected, planned contrasts revealed that if participants were cued with general academic goals, those in a positive mood were more likely to study ( $M_{\text{positive}} = 4.94$  vs.  $M_{\text{negative}} = 3.50$ ;  $t(62) = 2.49, p < .05$ ) than those in a negative mood. However, if participants were cued with general friendship goals, those in a positive (vs. negative) mood were less likely to study ( $M_{\text{positive}} = 3.22$  vs.  $M_{\text{negative}} = 4.13$ ;  $t(62) = 2.34, p < .05$ ).

*Mediation analysis.* Choice was moderated by type of goal that was cued among participants. Therefore, we conducted two separate mediation analyses, one for participants cued with general academic goals and one for participants cued with general friendship goals. Among participants cued with general academic goals, regression analysis revealed a significant effect of mood on choice ( $b = .72, se = .29; t = 2.49, p < .05$ ), of mood on construal ( $b = .18, SE = .08; t = 2.79, p < .05$ ), and of construal on choice ( $b = 1.79, SE = .58; t = 3.07, p < .01$ ). When we regressed mood on choice and controlled for level of construal, the effect of mood on choice became nonsignificant ( $b = .48, SE = .28; t = 1.71, p = .10$ ), and a main effect of construal emerged ( $b = 1.45, SE = .60; t = 2.39, p < .03$ ). Thus, among participants cued with academic goals, a positive mood increased abstract construal and choice of studying over friendship, but the effect of mood on choice of studying was mediated by construal level (Sobel  $z = 1.65, p < .05$ ).

Among participants cued with general friendship goals, regression analysis revealed a significant effect of mood on choice ( $b = -.45$ ,  $SE = .19$ ;  $t = -2.34$ ,  $p < .05$ ), of mood on construal ( $b = .18$ ,  $SE = .07$ ;  $t = 2.53$ ,  $p < .05$ ), and of construal on choice ( $b = -1.15$ ,  $SE = .39$ ;  $t = -2.93$ ,  $p < .01$ ). When we regressed mood on choice and controlled for level of construal, the effect of mood on choice became nonsignificant ( $b = -.28$ ,  $SE = .20$ ;  $t = -1.45$ ,  $p > .15$ ), and a main effect of construal emerged ( $b = -.93$ ,  $SE = .42$ ;  $t = -2.22$ ,  $p < .03$ ). Thus, among participants cued with general friendship goals, a positive mood increased abstract construal and choice of friendship over studying, but the effect of mood on choice of friendship was mediated by construal level (Sobel  $z = 1.68$ ,  $p < .05$ ). Thus, these data reveal that mood influences construal level and that choice of abstract goals is determined by level of construal. Additional ANOVAs on questions pertaining to the scenario and attention participants paid to reading and thinking about the scenario did not reveal any significant effects.

Critics might suggest that participants in a positive (vs. negative) mood thought of more positive reasons to follow the primed goal; however, the goal-endorsement task occurred before mood induction, making such a possibility less likely. In addition, level of construal mediated choice. As a set, these data suggest that participants in a positive mood engaged in whatever abstract goal was accessible. They also disengaged from goals that conflicted with the currently accessible abstract goal.

We must note two additional points. First, participants were specifically asked to imagine themselves in the scenario as Jack and thus it is likely that they applied their personal goals to the decision. It is possible that if participants were not asked to imagine themselves as Jack, they may not have applied their personal standards to judging others.

Second, in the priming task, participants endorsed general goals, and the task was titled “General Questions Survey.” The use of this term might have associated abstractness with the goals being endorsed, and we expect that titling the survey as “Immediate” or “Specific” would not lead to similar effects. These are both areas for further research. These findings are consistent with the mood-as-information perspective and suggest when and how a positive mood might facilitate (vs. impair) performance on tasks.

## **GENERAL DISCUSSION**

Five experiments indicated that a positive (vs. negative) mood increases abstract (concrete) construal. Experiment 1a indicated that associating a smiling (vs. frowning) bullet point with an activity led to a more abstract construal of that activity, and experiments 1b, 2a, and 2b replicated these effects by manipulating mood directly. Participants in a positive (vs. negative) mood came up with more abstract descriptions of activities, indicated that abstract goals were more important, and preferred products that were advertised with messages that were compatible with abstract framing. Experiment 3 indicated that the effect of mood on construal results in increased adoption of whatever abstract goal is accessible and that the effects are mediated by construal level. Self-report measures of attention to the task revealed no differences based on mood, suggesting that participants did not put in different effort in completing their assigned tasks.

Thus, the current findings add to the understanding of the influence of mood on consumer judgment and information processing. Building on the mood-as-information perspective, we proposed and found that a positive mood leads to high-level construal,

which facilitates engagement in goals that are abstract and disengagement from goals that are concrete or inaccessible. Our data are consistent with findings in the existing literature but offer a novel reinterpretation of some of the observed effects, which may previously have been attributed to heuristic processing. An important contribution is that our data distinguish that the effect we observed arises not because a positive mood (cue) is itself abstract but rather because a positive mood (cue) activates an abstract construal. This distinction is subtle but important because the former implies that a positive mood (cue) will always be abstract, whereas the latter implies that if a positive mood (cue) can be associated with concrete construal, a boundary condition will be demonstrated for our effects. For example, although we suggested that a positive mood increases abstract construal because it allows a person to distance him- or herself psychologically from a situation that seems to be going well and that, in doing so, the person is able to see the big picture better, what if it is not possible for the person to distance him- or herself psychologically? This might happen if expectancy of success on a task is high or goal completion is imminent. In such a situation, it may not be possible for the person to distance him- or herself psychologically from the outcome; a positive mood might even increase expectation of success relative to a negative mood and reduce distancing. As a consequence, when expectancy of success on an outcome is high, participants in a positive mood may infer task completion or adequate goal progress and reduce their efforts, thus engaging in heuristic processing.

These findings also make a contribution to construal-level theory in several ways. First, they show that independent of mood, valence cues construal level, an effect that has not been shown previously. Whereas construal-level theory (Liberman and Trope 1998)

suggests that abstract, superordinate, or high-level construal cues positive information and corresponds with positive material in memory, we demonstrated that the reverse activation might also occur. Specifically, cueing positive information might automatically lead to abstract construal, whereas cueing negative information might automatically lead to concrete construal. Second, we show that mood also cues construal level. This has systematic effects on evaluations and choices people make. Third, and most important, we show that abstract construal does not increase adoption of *all* goals; rather, it increases adoption of abstract goals. Thus, abstract construal can reduce self-regulation when goals are concrete. This is a novel contribution to construal-level theory.

The current research also suggests several opportunities for further research. For example, Fedorikhin and Patrick (2007) report that a positive mood that is accompanied by high arousal reduces self-regulation, and it is possible that arousal signals immediate concerns or is aversive and does not permit psychological distancing. Other factors that reduce psychological distancing, such as high expectancy of success on a task, might also reduce the adoption of future goals among happy people (Eyal and Fishbach 2006). In addition, scholars could investigate whether some moods (e.g., happiness) correspond more with high-level construal than others (e.g., calmness). For example, Higgins (1997) suggests that happiness results from promotion or eagerness goals and that calmness results from prevention or vigilance goals, and research suggests that promotion goals are more abstract than prevention goals. Similarly, dejection is a promotion emotion, and agitation is a prevention emotion; thus, it is possible that dejection, but not agitation, evokes high-level construal.

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**1) THEORETICAL BACKGROUND****1) EXPERIMENT 1A: SMILING BULLETS AND ABSTRACT CONSTRUAL**

2) Method

2) Results

3) *Hypothesis testing*3) *Additional analysis***1) EXPERIMENT 1B: MOOD AND CONSTRUAL LEVEL**

2) Method

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2) Method

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