

## The unique consequences of feeling lucky: Implications for consumer behavior

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### Abstract

Cognitive priming procedures were used to identify the unique effects that luck-related concepts have on consumer behavior. The effects of these concepts could theoretically influence behavior through the elicitation of positive affect or via temporary changes in participants' self representations of how lucky they feel. An initial experiment showed that priming Asian consumers with lucky numbers independently influenced both their perceptions of personal luck and the positive affect they reported experiencing. Subsequent experiments, however, showed that the effect of these primes on consumer behavior was mediated by momentary changes in how lucky people felt (i.e. changes in the self concept) rather than by the positive affect they were experiencing at the time. Exposing consumers to lucky numbers influenced their estimates of how likely they were to win a lottery (Experiment 2), their willingness to participate in such a lottery (Experiment 4), their evaluations of different promotional strategies (Experiment 3), and also the amount of money they were willing to invest in different financial options (Experiment 4). The effect of luck on behavior was also moderated by a person's regulatory focus.

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For centuries, people have believed that the use of certain objects or the performance of certain rituals will influence their own (or others') luck. Beliefs in luck also appear to be an important source of optimism for people in their daily life (Darke & Freedman, 1997a). Consequently, a large number of people across the globe carry lucky charms and engage in luck related behaviors everyday (Griffiths & Bingham, 2005; Kramer & Block, 2008; Simmons & Schindler, 2003). Examinations of consumers' chronic beliefs about luck and their perceptions of how lucky they feel at the point they make a decision have become increasingly relevant to marketing because of the increased use of promotional strategies such as contests and sweepstakes (McDaniel, 2002; Mogelesky, 2000; Ward & Hill, 1991; Wood, 1998) and the growth of the gambling industry. Despite these trends, however, it is unclear *why* consumers are drawn to choices that have risky outcomes and *when* is this tendency more pronounced.

Previous empirical investigations that examine luck-based choices either use an attribution theory perspective (Rotter,

1966; Weiner et al., 1987) or an individual difference approach (Darke & Freedman, 1997a). Studies using the attribution theory perspective vary the type and the chance of different outcomes and allow participants to attribute these outcomes to different sources (luck being one of them). The individual difference approach focuses on identifying stable differences in beliefs about luck and examines how people with these chronically different beliefs respond to chance related outcomes. More recent work (DeMarree, Wheeler & Petty, 2005; Kramer & Block 2008) has used cognitive priming procedures to examine the effect of superstitious beliefs on behavior. However, much of this work has not disambiguated and articulated the processes by which luck influences behavior.

The reason for this ambiguity is that manipulations of luck could potentially elicit positive affect. Consequently, it is unclear whether people choose risky outcomes because the experience of positive affect influences their estimations of risk (Arkes, Herren & Isen, 1988; Isen & Patrick, 1983) or if there is a change in their subjective perceptions of how lucky they feel they are (DeMarree et al., 2005). For example, consider findings reported by Kramer and Block (2008) who show that participants feel more dissatisfied after a product failure if the product is associated with good luck (e.g., a red colored rice

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cooker which is considered lucky in Chinese cultures). Multiple explanations for this effect exist. If exposure to the lucky color elicits positive affect, then people are more likely to provide extreme responses and evaluate negative things like product failures more negatively (Adaval, 2003) or be more sensitive to losses (Isen, Nygren & Ashby, 1988). Alternately, the effects could be driven by greater accessibility of self-relevant superstitious beliefs (DeMarree et al., 2005) that alter expectancies about product performance and lead to greater disappointment when the product fails.

Given that positive affect and luck are two feelings that often co-occur (Duong & Ohtsuka, 2000; Wiseman, 2003) it becomes important to isolate the unique effects that luck has on behavior and the mechanism by which this influence occurs. Recent work by Wheeler and his colleagues suggests that the activation of social constructs can influence behavior by temporarily affecting self-representations in working memory (the “active-self”) in ways that are either consistent or inconsistent with the primed constructs (Wheeler, DeMarree & Petty, 2007; see also DeMarree et al., 2005). This can occur through the biased retrieval of information about the self or through temporary changes in the self concept. We suggest that the effects of luck on behavior occur through a similar process. That is, the increased accessibility of luck related concepts (through exposure to lucky symbols or numbers) might temporarily change people’s self perception of how lucky they feel they are and influence behavior in situations where luck is relevant via a biased assessment of chance related outcomes. Positive affect, that might be elicited concurrently, could have a more general effect when it is used as a source of information about how one is feeling and is misattributed to anything being judged (Schwarz & Clore, 1983). Thus, although these subjective experiences of feeling lucky and feeling happy are similar, the situations in which they influence behavior might be quite different.

Four experiments investigated the effects of activating luck-related concepts on consumer judgments and behavior. Experiment 1 showed that priming consumers subliminally with luck-related concepts influenced not only how lucky they felt but also the affect they reported experiencing suggesting that effects on behavior could be driven by either of these feelings. Experiments 2 and 3, provided preliminary evidence that the effect of luck on behavior was mediated by changes in self-perceptions of how lucky participants felt. Experiment 4 replicated these effects and showed that they were not mediated by the positive affect that participants were experiencing. In addition, it showed that the effect of activating luck-related concepts on risk-taking behavior was more evident among individuals whose chronic self orientations emphasized the positive consequences of their behavior rather than its potential negative consequences.

## Conceptual framework

We begin with an overview of the various psychological approaches that have been used to understand the effect of luck on behavior and, in that context, discuss how procedures used to manipulate luck might inadvertently elicit positive affect

leading to some ambiguities in the interpretation of the results. We then suggest two underlying cognitive mechanisms by which luck could influence risk taking behavior and distinguish between them empirically.

### *Psychological approaches underlying research on luck*

#### *The attribution theory perspective*

Weiner et al. (1987) initially conceptualized luck as one of four factors to which people attribute their own and others’ behavior. It was seen as having an external locus of control and was considered unstable. This classification of luck as externally determined and unstable has been questioned (Meyer, 1980; Meyer & Koelbl, 1982) and disagreements appear to arise because of the tendency to confuse luck with chance (Fischhoff, 1976). Although chance is more likely to be an external, unstable factor, luck can sometimes be regarded as an attribute of the individual (and, therefore, more stable) and at other times could describe an event (e.g., a forest fire) that is external and unstable (Chandler & Spies, 1984).

#### *The personality trait perspective*

A second perspective extends this literature and examines individual differences in *beliefs* about luck (Darke & Freedman, 1997a,b; Wiseman & Watt, 2004). According to this perspective, people believe in luck for a variety of reasons. For example, luck can give people an illusion of control (Langer, 1975; Langer & Roth, 1975) and can be a source of optimism in their lives (Darke & Freedman, 1997a; Taylor & Brown 1988). The “Belief in Good Luck” scale developed by Darke and Freedman (1997a) helped measure individual differences in these beliefs and furthered understanding of how these beliefs in good luck influenced responses to different outcomes (Darke & Freedman, 1997b).

#### *A cognitive priming approach*

Two recent studies have primed luck using cognitive priming procedures (DeMarree et al., 2005; Kramer & Block, 2008). The research to be reported used a similar approach and was guided by the assumption that “luck” is a concept that is stored in memory and functions in much the same way as other concepts. It is associatively linked to other evaluatively similar concepts such as words, objects (e.g., horse shoes, four leaf clovers etc.), events (lucky or unlucky events that one knows of or has experienced), numbers (the lucky “8” or the unlucky “4” in Asia), beliefs about the role that luck plays in one’s life and subjective feelings. Situational factors can make luck-relevant concepts temporarily accessible in memory allowing them to exert an influence on behaviors to which they are *applicable* (Bargh, Chen, & Burrows, 1996; for a review, see Dijksterhuis & Bargh, 2001).

Research on knowledge accessibility suggests that any knowledge structure can guide information processing and behavior if it is both applicable and accessible in memory (Higgins, 1996; Wyer & Srull, 1989). Further, concepts and knowledge can vary in their *chronic* accessibility, depending on the frequency with which they have been activated and used in the past (Higgins, 1996). If people’s beliefs in luck are

chronically accessible, their judgments and behaviors are often guided by these beliefs. However, the accessibility of luck related concepts can also depend on the *recency* with which they have been used. Recency effects can override frequency effects a short time after a concept has been activated (Higgins, Bargh & Lombardi, 1985). To this extent, the chronic accessibility of luck-related concepts may be stable across individuals, but their influence in any given situation can be influenced by situational factors that have led to their recent activation. Thus, recent activation of luck related concepts could exert an influence on behavior over and above these chronic effects. This conceptualization helps reconcile the dispute about whether luck is an external, unstable factor or a stable internal, belief and suggests that both situational and individual difference factors play a role.

A cognitive priming approach is also useful in the identification of the underlying process by which behavior is influenced. Although the antecedents of luck have been extensively studied (e.g., Darke & Freedman, 1997a; Fischhoff, 1976; Teigen, 1995, 1996, 1998; see Pritchard & Smith, 2004 for an extensive review), researchers have seldom examined the consequences of luck perceptions on people's judgments and behaviors (for exceptions, see Darke & Freedman, 1997b and Kramer and Block 2008). In the consumption context, such behaviors could be influenced by alternative paths. For example, exposure to lucky colors or numbers or promotions such as sweepstakes and games could elicit positive affect (Naylor et al., 2006). Or, they could temporarily change consumers' self-perceptions of how lucky they feel (see Wheeler et al., 2007). Evaluations of chance related outcomes and risk taking behavior could then be influenced by either of these pathways. By manipulating the accessibility of luck-related concepts using priming techniques, one can determine which (if any) of these pathways is responsible for the influence of luck on behavior. We discuss these two paths in greater detail after pointing out some ambiguities in interpreting the results of previous research on luck.

#### *Past studies: an evaluation of the underlying process*

Previous research has rarely, if ever, measured both feelings of luck and happiness, let alone assessed their unique effects on behavior. Research on luck typically uses an initial lucky event (e.g., a win during gambling) to examine future expectations and risk taking (Darke & Freedman, 1997b; Wohl & Enzle, 2003). Darke and Freedman (1997b), for example, manipulated an initial lucky event and examined the impact it had on betting behavior among people with strong beliefs in luck. They found that after experiencing a lucky event, those who believed in luck were more confident and bet more, whereas those who did not believe in luck were less confident and bet less. The authors suggest that a belief in lucky streaks led to increased expectations following initial good luck, which in turn led to increased risk taking.

This type of manipulation raises some interesting questions. A previous win or loss is a fairly salient event that could prime preexisting beliefs about one being a lucky or unlucky individual, as Darke and Freedman (1997b) suggest. However,

it could influence risk taking through at least two processes. First, it could provide new information that changes expectancies about future events (e.g., "I just won; I must be a lucky person and will win more"). If the initial lucky event provides new information, this information could confirm existing beliefs among strong believers, leading to more confidence. Second, a previous win or loss could also elicit positive affect. This positive affect could either confirm or disconfirm the implications of information that is consistent with it leading to greater weighting of affect-consistent information (Adaval, 2001). Thus, the increased betting that occurs when people already have prior beliefs about themselves as lucky individuals could be the result of these confirmatory processes.

In another study, Wohl and Enzle (2003) found that participants bet more money on a subsequent gambling task after having nearly experienced a big loss than a big win. This behavior was mediated by changes in feelings of luck that participants experienced. Specifically, participants in the near big loss condition felt luckier than those in the near big win condition. Although these findings are suggestive, an alternative explanation of Wohl and Enzle's findings could lie in the fact that the avoidance of a big loss elicited positive affect (leading to bigger bets) whereas the avoidance of a big win elicited negative affect (leading to smaller bets).

More recent studies that have used priming procedures have also not measured affect. DeMarree et al. (2005), for instance, found that exposure to lucky numbers elicited greater subjective feelings of luck. However, they did not measure the affect (mood) that might have been elicited by exposure to lucky and unlucky primes. It is conceivable that the greater selection of luck congruent words in their implicit measure of luckiness was driven by greater attention to mood congruent concepts (Adaval, 2001; Wyer, Clore, & Isbell, 1999). In another set of studies, Kramer and Block (2008) examined the nonconscious nature of superstitious beliefs but did not manipulate luck directly by priming procedures. Rather, they examined how consumers are more dissatisfied when lucky/unlucky products fail. If positive affect was elicited by the choice of lucky products, then people could be more dissatisfied after a product failure because positive affect can make people more sensitive to losses (Isen et al., 1988). Alternately, it can increase extremity of responses making something negative (e.g., a product failure) seem worse (Adaval, 2003). Thus, in a large number of studies discussed, it is unclear if the effects can be clearly attributed to luck. In addition, the process by which luck can exert an influence is unclear. We discuss two possible underlying cognitive mechanisms and discuss implications of each.

#### *Underlying cognitive mechanisms*

##### *Positive affect as an underlying mechanism*

Researchers have suggested that good luck and good mood often co-occur (Duong & Ohtsuka, 2000) and that lucky people are happy and optimistic whereas unlucky people feel anxious and depressed (Day & Maltby, 2003; Wiseman, 2003). Thus, increasing the accessibility of luck related concepts could elicit positive affect which could influence perceptions of risk (Arkes

et al., 1988; Isen & Patrick, 1983; Monga & Rao, 2006) and increase risk taking. The effects on risk-taking observed in several studies could, therefore, have nothing to do with luck and might be mediated by positive affect.

Positive affect elicited by a manipulation of luck (e.g., a previous win or loss, exposure to a lucky or unlucky number) could influence risk taking behavior in several ways. For example, Isen and Patrick (1983) find that people tend to take more risks if they are feeling happy and the risks are small. This suggests that positive affect biases estimation of risks (i.e., the evaluation of gains and losses) and the increased risk-taking occurs because facts are interpreted in a biased manner. Another possible mechanism is suggested by Schwarz and Clore (1983). According to their affect-as-information conceptualization, the experience of positive affect can be misattributed to the object being judged. When confronted with a choice that has risks associated with it (e.g., “Should I buy this lottery ticket?”), people might ask themselves how they feel about it and come up with a favorable or optimistic response. Taylor and Brown (1988) suggest that happy people tend to be unrealistically optimistic lending further credence to the idea that positive affect might bias estimations of chance outcomes. Affect could exert such an influence by altering the weight that people attach to information. For example, people who have just won something and are feeling happy could weight information that is positive (aspects about the win) more heavily while making future judgments and decisions (see Adaval, 2001).

#### *Temporary changes in self-perception of luck*

The effects of luck could also operate through an alternative mechanism. After exposure to a lucky prime, the concept of luck might become more accessible and could influence behavior in much the same way as other primes have been shown to influence behavior (Bargh et al., 1996). In this context it is worth noting that although the effects of priming on judgments and behavior are well known, the cognitive processes that underlie such effects are less clear. Wheeler et al. (2007) have recently suggested that the self can play an important role in affecting both the magnitude and direction of prime-to-behavior effects. According to their active-self account, primes can influence behavior by creating changes in the self-concept that is in working memory (the active-self) either through the biased retrieval of information from the chronic self-concept or through the introduction of new material into the active self-concept. This conceptualization suggests that priming people with concepts of luck could change their active-self concept and make them feel more lucky, temporarily, leading to changes in behavior. Such transitory changes in self-concept could be independent of the more stable and chronic beliefs that people have in good luck (Darke & Freedman, 1997a) or of the positive affect that might be elicited concurrently.

#### *Implications of the underlying cognitive mechanism for risk-taking*

The processes articulated above have different implications for risk taking in consumption domains. If the effects of luck priming on behavior occur through the mediating effect of

positive affect, then one would expect to see effects that are more general in nature. That is, when risks are small, people experiencing positive affect might be more likely to take these risks (Isen & Patrick, 1983) and the use of affect as information might make them feel more optimistic about the outcomes of decisions they have to make. If, however, the effects of luck on behavior operate through temporary changes in self-concept (i.e., how lucky people feel) then this has implications for *when* primes would be more likely to manifest in behavior change. According to Wheeler et al. (2007); see also DeMarree et al., (2005), primes are more likely to change the active-self for people who are not troubled by inconsistencies between their beliefs and behaviors. We suggest that in the domain of luck, the effect of such primes might be guided by the extent to which “being lucky” is considered a desirable state and people are motivated to attain this state or positive self image. For example, Dunning (2007a) suggests that people have a general tendency to harmonize their beliefs about themselves so as to maintain a positive self image (see also Dunning, 2007b; Kruger, Galak & Burrus, 2007; Sedikides, Gregg, Cisek & Hart, 2007). Thus, a person’s motivational disposition (e.g., regulatory focus) might play a key moderating role.

According to Higgins’ (1998) conceptualization of regulatory focus, individuals might exhibit two general motivational dispositions. One, a *promotion focus*, is characterized by an emphasis on hopes and aspirations and, therefore, on positive consequences of one’s behavior. The other, a *prevention focus*, is reflected in a concern with duties, responsibilities, and obligations and consequently with the avoidance of negative behavioral outcomes. A manifestation of this difference is that people with a promotion focus typically frame positive and negative outcomes in terms of gains (positive) and non-gains (neutral), respectively, whereas those with a prevention focus frame them in terms of non-losses (neutral) and losses (negative), respectively (Idson, Liberman & Higgins, 2000; Lee & Aaker, 2001; Monga & Zhu, 2005). If being lucky is considered a desirable state, then one would expect that people who are relatively more promotion focused would be more motivated to incorporate changes in their active-self or be tolerant of such changes when primed with luck related concepts. However, if the effects of luck occur through the mediating effect of positive affect, then such contingencies should not be apparent. We examined this possibility in the research to be reported by looking at these chronic differences in regulatory focus (Lockwood, Jordan & Kunda, 2002).

To summarize: The research to be reported attempted to distinguish between two underlying processes by which luck primes could influence risk-taking behavior. We examined this issue in two consumption contexts where people choose to participate in behaviors when the outcome is uncertain — lotteries as well as certain types of promotions (e.g., sweepstakes and contests). In four experiments, we unobtrusively exposed participants to luck-related stimuli and observed their effect on behavior through the mediating effect of positive affect or temporary changes in self-perception of luck. Because all the participants in our experiments were Hong Kong Chinese undergraduate students, we used numbers to prime luck. Many

numbers in Chinese culture (e.g., 8 and 88) are believed to be bring good luck whereas others (e.g., 4 and 44) ostensibly bring misfortune (for a detailed interpretation, see Lip, 1992). This method of priming participants with numbers has two advantages. First, a symbol of luck that is encountered routinely in everyday life is primed rather than the word “luck.” Second, priming with numbers prevents possible confounds and demand effects that could result from direct semantic priming.

## Experiment 1

If exposing participants to lucky or unlucky numbers increases the accessibility of luck related concepts, it may also elicit affective reactions that are associated with these concepts (see Wyer et al., 1999 for a discussion of how concepts can elicit affect). Experiment 1 investigated this possibility. We expected that priming people with stimuli associated with good luck would increase the accessibility of concepts associated with these stimuli and consequently would influence both their perceptions of themselves as lucky and the positive affect they experienced. Exposing participants to stimuli associated with bad luck should have the opposite effects.

### Method

Seventy-one Hong Kong Chinese undergraduate students participated in the experiment for extra course credit. They were randomly assigned to cells of a 2 (Prime: lucky vs. unlucky prime)  $\times$  2 (Prime type: word vs. number prime) design. Thus, participants were subliminally primed with either lucky or unlucky words or lucky or unlucky numbers. Then, after exposure to the subliminal primes and a filler task, they reported both how lucky and how happy they felt at that moment.

### Procedure

#### Subliminal priming task

Participants were told that they would be asked to take part in a number of short studies that were unrelated to one another but were being run together to give them one full hour of experimental credit. They were then presented with the subliminal priming task. The procedure we used was similar to that employed by Adaval and Monroe (2002) and followed the general guidelines established by Bargh and Chartrand (2000). Participants were told that the first study was on visual perception and would require the use of a computer. The instructions went on to indicate that the objective of the task was to determine how quickly and accurately people could respond to visual stimuli. Participants were told that when they started the program, a string of letters would appear in a small box on the screen (e.g., “aaaaaaa”) and that they should report as quickly as possible whether the string of letters contained consonants or vowels by pressing a designated key on the computer keyboard. They were told that as soon as they responded to one string of letters, they would see a series of dashes (e.g., “- - - - -”) after which another string of letters would appear (e.g., “ppppppp”). They were informed

that the presentation of different strings of letters would continue for a number of trials and that on each trial, they should indicate if the string of letters contained vowels or consonants. The computer ostensibly recorded their responses and provided researchers with the data necessary to assess visual perception skills.

Participants performed 48 trials of the task just described. Either a word (“lucky” or “unlucky”) or a one-digit number (“8” or “4”) was presented subliminally before each of the stimuli to be judged. Specifically, after a letter string had been judged, a series of dashes appeared on the screen for 1.5 s. Then, either a word or a number (the subliminal prime) appeared for 16 ms followed immediately by a mask that remained on the screen for 120 ms to prevent an afterimage. After the mask, the next letter string to be judged was presented. Each word or number was positioned in the same location as the letter string. After participants completed the 48 trials, they were given a filler task and then asked to report their feelings.

#### Subjective feelings

On completion of the subliminal priming task and the filler task, participants were told that the next task was a paper and pencil study on personality assessment. They were asked to answer several questions. The target question about their perception of personal luck was buried in between a few filler questions. Participants were asked to answer “To what extent do you agree with the statement ‘I often feel it’s my lucky day’” along a scale from 1 (Strongly Disagree) to 5 (Strongly Agree). After the personality assessment task, participants were asked to indicate their current mood (“How happy do you feel right now?”) by circling a number along a scale from -5 (Extremely Unhappy) to +5 (Extremely Happy).

### Results

#### Perception of luck

Participants’ estimates of how lucky they felt were analyzed as a function of prime type (number vs. word) and prime implication (lucky vs. unlucky). As shown in Fig. 1, participants felt luckier when lucky concepts were primed ( $M=3.02$ ) than when unlucky concepts were primed ( $M=2.51$ ),  $F(1, 69)=8.13$ ,  $p<.01$ , and this difference did

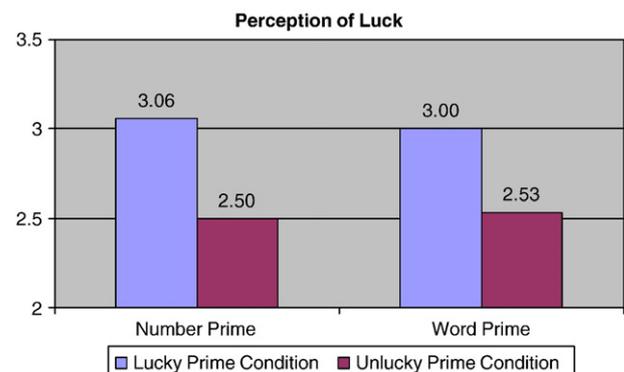


Fig. 1. Perception of luck (Experiment 1).

not depend on whether concepts were primed by numbers (3.06 vs. 2.50) or words (3.00 vs. 2.53),  $F < 1$ .

### Happiness

Analyses of happiness judgments yielded similar conclusions. As seen in Fig. 2, participants felt happier when good luck was primed ( $M = 1.97$ ) than when bad luck was primed ( $M = .80$ ),  $F(1, 69) = 7.17$ ,  $p < .01$ , and this difference was similar regardless of whether numbers were primed (1.89 vs. .72) or words were primed (2.06 vs. .88),  $F < 1$ .

Although our priming manipulation affected feelings of luck and feelings of happiness, these variables were correlated only .21 ( $p < .05$ ). This suggests that the effects of priming on the two variables were fairly independent. To confirm this, we conducted two covariance analyses. In the first analysis, we treated feelings of luck as the covariate and feelings of happiness as the dependent variable. The effect of primed concepts on feeling of happiness was still significant ( $F(1, 68) = 5.68$ ,  $p < .05$ ) and the effect of the covariate (luck) on these feelings was not significant ( $F(1, 68) = 1.18$ ,  $p > .28$ ). The second covariance analysis used feelings of happiness as a covariate. In this case, the effect of primed concepts on feelings of luck was significant ( $F(1, 68) = 4.77$ ,  $p < .05$ ) and the effect of the covariate (happiness) on these feelings was not ( $F(1, 68) = 1.18$ ,  $p > .28$ ). Based on these analyses, it seems reasonable to conclude that activating luck-related concepts elicits both feelings of luck (i.e., people temporarily feel that they are luckier) and affect and that these reactions are independent.

To determine if the effects of luck on behavior occur through the mediating influence of subjective feelings of luck or affect, we conducted three additional experiments. Experiment 2 provided a basic test of how chance encounters with luck related symbols can alter estimations of risk through the mediating effect of luck. Experiment 3 used an indirect technique to rule out the possibility that the effects of luck on evaluations were mediated by affect and Experiment 4 used a direct test to rule out this mediating influence as well. In addition, it demonstrated how the identification of the underlying process could provide a more nuanced set of predictions about when the effects of luck would be more likely to be observed.

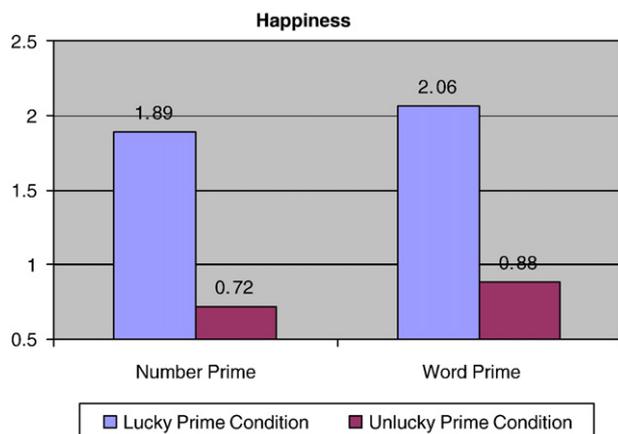


Fig. 2. Happiness (Experiment 1).

## Experiment 2

Experiment 1 confirmed our expectation that increasing the accessibility of luck-related concepts can not only change self-perceptions of luck but also elicit positive affect. It seemed desirable to validate further the idea that a subtle priming manipulation (of the sort that is likely to be encountered in the market) can influence consumers' estimates of winning something (e.g., a promotional offer like a lottery or sweepstake) through changes in self-perception of luck. If activating luck-related concepts temporarily influences people's feelings of being lucky, it should correspondingly influence their belief that objectively chance events with positive consequences are likely to occur in their lives. Experiment 2 determined whether activating these concepts through a brief encounter with luck-related symbols would influence participants' estimates of winning a lottery and if this effect was mediated by changes in their self-perception of luck.

### Method

One hundred six undergraduate students at a major Hong Kong university participated in the experiment for extra course credit. We used a between-subjects design and participants were randomly assigned to one of six conditions: two experimental conditions (lucky vs. unlucky number primes) and four control conditions (two controls for each type of priming condition).

Participants were told that they would be asked to take part in a number of short studies that were unrelated to one another but were being run together to give them one full hour of experimental credit. (The present experiment was conducted after several irrelevant studies, adding further credibility to the cover story.)

### Number priming

To prime concepts associated with good and bad luck, we used a supraliminal priming technique with an elaborate cover story. Participants were told that we were interested in students' expectations for the prices of school bags available in Hong Kong. We indicated that in order to help them think about this issue, we would provide them with a number that was generated randomly by a computer and that they would be asked to indicate if a school bag costs more or less than this number. In *good luck priming* conditions, participants were given the number "88," and in *bad luck priming* conditions, they were given the number "444." (Note: US\$ 1 = HK\$ 7.78).

Corresponding to each experimental condition, we ran two control conditions in which the primed numbers were neutral and had approximately the same average value as the corresponding luck-related number. (Specifically, primed numbers in the control conditions for good luck primes were "75" and "101", whereas for bad luck primes, they were "390" and "500".) This procedure permitted us to control for possible anchoring effects of exposure to high and low numbers that might occur for reasons unrelated to the numbers' luck-related implications (see Strack & Mussweiler, 1997).

### Lottery

After participants responded to the question about whether the price of a school bag was greater or less than the given number, they answered a few other questions that were related to prices of schoolbags. That is, they were asked to estimate the average price of school bags and indicate how much they would be willing to pay. They were told that in order to encourage and reward participation in experiments, the department of marketing often distributed gift certificates donated by neighboring shops and restaurants to students who had participated in experiments. Their names were entered automatically in a lottery to be held at the end of the semester. Participants were then given an entry form and asked to write down their contact details as an official submission to participate in the lottery. After they had done this, they were told that in order to come up with more efficient ways to administer the lottery, we wanted to ask them a few questions about it. On this pretense, they were asked a few questions about lotteries and in that context indicated their likelihood of winning the lottery on a scale from 0% to 100% and estimated how lucky they felt “right now” along a scale from 0 (not at all lucky) to 10 (very lucky).

### Results

#### Feelings of luck

Participants felt luckier when they had been primed with a lucky price “88” ( $M=4.65$ ) than when they had been primed with an unlucky price “444” ( $M=3.13$ ),  $F(1, 31)=5.21, p<.05$ . In contrast, the feelings reported by participants in the corresponding control conditions did not differ (3.33 vs. 3.82, respectively),  $F<1$ . The interaction of priming conditions and participant group (experimental vs. control) was significant,  $F(1, 102)=5.10, p<.05$ .

#### Likelihood of winning

Participants’ estimates of their likelihood of winning the lottery were influenced similarly. Specifically, participants indicated that they were more likely to win the lottery if they had been primed with lucky numbers (23.1%) than if they had been primed with unlucky ones (7.8%),  $F(1, 31)=4.00, p<.05$ , whereas the corresponding control groups did not differ (13.8% vs. 19.7%),  $p>.10$ . The interaction of priming and participant group was again significant,  $F(1, 102)=5.44, p<.05$ .

Participants’ feelings of how lucky they were and their estimates of how likely they were to win the lottery were correlated  $.475 (p<.01)$ . A mediation analysis under experimental conditions alone showed that estimates of winning the lottery were significantly influenced by priming manipulations when subjective feelings of luck were not taken into account ( $\beta=.33, p<.05$ ). However, priming also influenced feelings of luck ( $\beta=.39, p<.05$ ). Finally, an analysis of winning estimates that included both priming and feelings of luck as predictors reduced the effect of priming to nonsignificance ( $\beta=.17, p>.10$ ) whereas the significance of subjective feelings was maintained ( $\beta=.45, p<.05$ ). The conclusion that feelings of luck mediated the effect of priming was supported by a marginally significant Sobel test statistic of 1.74 ( $p<.08$ ).

### Experiment 3

Although Experiment 2 established that luck related primes can alter people’s subjective perceptions of how lucky they feel and influence their likelihood estimates for the occurrence of lucky events, it had a few shortcomings. First, if incidental exposure to the lucky and unlucky prices elicited affect (as seen in Experiment 1), estimates of winning the lottery might have been influenced by the affect that participants experienced. Second, although the effects of luck priming on estimates of winning were mediated by changes in how lucky participants felt, the Sobel test was only marginally significant. It therefore seemed desirable to replicate this finding under conditions in which luck and affect were likely to have different effects. Experiment 3 was conducted to address these issues and used an indirect test to diagnose the underlying process by which luck related primes influenced behavior. As noted earlier, if the effects are mediated by positive affect and affect is used as a source of information, one would expect to see effects that are more general in nature. On the other hand, if the effects are mediated by temporary changes in the active self-concept these effects should be more circumscribed and should occur only when feelings of luck are relevant to the judgment or decision to be made.

Promotional offers to consumers provide one such setting where the changes in self perception of luck vs. positive affect could lead to differential consumer response. Early research on promotions has typically taken the view that when consumers are exposed to promotions, conscious cognitive processes lead to an increase in the likelihood of purchase (Bagozzi, Baumgartner & Yi, 1992; Inman, Peter & Raghuram, 1997; Wansink, Kent & Hoch, 1998). More recently, other researchers have argued that affect might play a role in the evaluation of promotions (Honea & Dahl, 2005; Naylor et al., 2006; see also Heilman, Nakamoto & Rao, 2002). Naylor et al. (2006) suggest that promotional material of any kind (sale signs, price offs) can elicit affect and that these feelings can have a direct impact on evaluations and purchase likelihood. If feelings have a direct impact on evaluation of promotions, it becomes important to identify what types of feelings exert an influence and when this influence occurs.

As an example, consider promotional games (such as contests, lotteries and sweepstakes) that are becoming increasingly popular (Mogelefsky, 2000). The reasons for their success are unclear. According to Naylor et al. (2006), promotions (in general) could elicit positive affect and could exert an influence on behavior because of these feelings. In the context of promotional games, their findings would imply that such games are successful because they elicit positive affect that has a direct impact on evaluations (Schwarz & Clore, 1983). However, our conceptualization suggests that these types of promotional games could not only elicit affect but also temporarily change consumers’ subjective perceptions of how lucky they feel when they encounter luck related symbols (e.g., signs on packaging or advertising saying “Win” “This could be your lucky day”). Thus, when considering why promotional games are evaluated favorably by consumers, it is hard to determine if the

evaluations are guided by positive affect or if consumers actually feel that they are more likely to win something because of temporary changes in their self-concept (i.e., how lucky they feel). It may, however, be possible to tease apart these two effects by examining how luck related primes influence evaluations of not just promotional games but also other types of promotions (such as straight discounts). Although the affect that is elicited by promotions (Naylor et al., 2006) might have a more general influence on all types of promotional offers (e.g., straight discounts and sweepstakes), temporary changes in self-perceptions of luck are likely to have an effect only on promotional games since they are inapplicable to the evaluation of straight discounts. Further, although both affect and luck perceptions could exert an impact on the effectiveness of promotional games, our conceptualization suggests that the effects of changes in self-perception of luck could occur without awareness of their antecedents, and independently of the affect that consumers are experiencing.

The promotional strategies used by firms provide a setting that allows one to observe how the two types of feelings might manifest themselves differently. Suppose that consumers encounter two types of promotions: one in which the product is sold using a straight discount and the other in which the product is sold at the regular price but the purchase allows them to participate in a contest or a sweepstake. If the activation of luck related concepts in the environment alters consumers' affective state, the effect of affect could generalize to all types of promotional offers (Schwarz & Clore, 1983). Thus, both promotions will be liked equally well. However, if the activation of luck related concepts temporarily alters subjective feelings of luck, this should lead to increased liking for the lottery when good luck is primed because feelings of luck are applicable only to this promotion option (Higgins, 1996). Experiment 3 investigated this possibility.

### Method

One hundred six Hong Kong Chinese undergraduates participated in the experiment for extra course credit. They were randomly assigned to one of the two priming conditions (lucky vs. unlucky). Participants were told that they would be asked to take part in a number of short studies that were unrelated to one another but were being run together to give them one full hour of experimental credit.

### Number priming

To prime concepts associated with good and bad luck, we used another supraliminal priming technique. Participants were told that this was a study on numerical cognition and that the researchers were interested in students' perception of different numbers. Under this pretext, they were asked to indicate how much they liked each of 20 numbers along a scale from  $-5$  (dislike extremely) to  $+5$  (like extremely). In *good luck* priming conditions, 12 of the 20 primes contained the number "8", and in *bad luck* priming conditions, 12 of the 20 primes contained the number "4". The remaining primes contained neither of these numbers. The extent to which the numbers were

considered lucky or unlucky was confirmed in a separate pretest involving 16 participants who rated each number along a scale from  $-5$  (very unlucky) to  $5$  (very lucky). The mean ratings of unlucky, neutral and lucky numbers were  $-1.43$ ,  $.16$ , and  $3.34$ , respectively.

### Product evaluation

After completing the priming task, participants were told that the next study was on product evaluation and that we were interested in the effect of different promotion strategies companies used. They were then presented with two promotional offers and asked to evaluate each one. The two promotional offers were for the same product (a bag of Calbee<sup>®</sup> potato chips). However, they differed in the promotion strategy used. In one option (*lottery option*), the product was sold at the regular market price HK\$10.50, but purchasers had the opportunity of joining a lottery. The advertising said, "Open the pack and find the token inside. Scratch it with a coin or sharp edge and see if you have won a free pack of chips or two free tickets to any UA movie." (Note: "any UA movie" refers to films screened at a local cinema chain.) In the other option (*straight discount option*), the product was sold at a discounted price of HK\$9. Each participant was asked to evaluate the two product options separately on 11-point scales that ranged from  $-5$  (Dislike a lot) to  $5$  (Like a lot).

The discounted price (HK\$9) was selected from a "matching pretest" that provided us with a product promotion that was as attractive as the lottery option. Participants ( $N=15$ ) read the content of the lottery option first, and then were asked to provide a discounted price that would make it equivalent to the lottery option. The mean price obtained in this pretest was HK\$8.86. A rounded off price of HK\$9 that was neutral with respect to luck was then used in the main experiment.

### Manipulation check and funnel debriefing

After the product evaluation task, participants were asked to indicate how lucky they felt "right now" along a scale from 0 (Not at all) to 10 (Very much). Finally, because the priming manipulation was a little more obvious than in previous experiments, participants were asked to complete a funnel debriefing form that probed for awareness or suspicion concerning the purpose of our priming manipulation consistent with guidelines suggested by Bargh and Chartrand (2000; see also Chartrand & Bargh, 1996). As noted by Bargh and Chartrand (2000) the extent to which the prime is subliminal or supraliminal is not important. What is critical is whether participants are able to detect the relationship between the prime and the task. Participants were therefore probed for their ability to detect this relationship. They were asked (a) whether they noticed anything unusual about the contents of the questionnaires, (b) whether they noticed any theme in the questionnaires and, (c) whether anything they had done on the first task had affected what they had done on the second product evaluation task. No participant showed any awareness or suspicion of the true relation between the different tasks of the experiment or indicated that what they had done on one task might have affected how they performed on another task. Thus, our number priming manipulation did not

alert participants to the actual relation between different tasks. After completing the funnel debriefing form, participants were thanked and dismissed.

## Results

### Priming task

The mean favorableness of the lucky and unlucky numbers used in the priming questionnaire was analyzed as a function of luck priming conditions. Participants indicated that they liked the lucky numbers better ( $M=1.45$ ) than the unlucky numbers ( $M=.08$ ),  $F(1, 104)=38.458$ ,  $p<.001$ .

### Changes in perceptions of luck

Consistent with our expectations, participants felt luckier when they had been primed with lucky numbers ( $M=5.79$ ) than when they had been primed with unlucky numbers ( $M=4.72$ ),  $F(1, 104)=7.80$ ,  $p<.01$ .

### Product evaluation

We expected that if temporary changes in self perception of luck mediated the effects of priming, then the evaluation of the lottery option should increase (decrease) when people were primed with good (bad) luck. However their evaluation of the discount option should not vary as a function of luck priming. To investigate this, a 2 (prime: lucky vs. unlucky numbers; between subjects)  $\times$  2 (promotion strategy: discount vs. lucky draw; within subjects) mixed design ANOVA was conducted on product evaluations. As expected, only the overall interaction was significant ( $F(1, 104)=4.43$ ,  $p<.05$ ). As shown in Fig. 3, planned contrasts revealed that lucky prime participants evaluated the lottery option more favorably ( $M=2.04$ ) than unlucky primed participants ( $M=1.04$ ;  $F(1, 104)=7.02$ ,  $p<.01$ ). However they did not differ in their evaluations of the discount option ( $M=1.69$  vs.  $1.67$ , respectively;  $F<1$ ).

### Feelings of luck as a possible mediator

A mediation analysis showed that evaluations of the lottery option were significantly related to priming manipulations when subjective feelings of luck were not taken into account ( $\beta=1.00$ ,  $p<.01$ ). However, priming also influenced feelings of luck

( $\beta=1.00$ ,  $p<.01$ ). Finally, an analysis of lottery option evaluation that included both priming and feelings of luck as predictors reduced the effect of priming to non significance ( $\beta=.68$ ,  $p>.07$ ) whereas the significance of subjective feelings was maintained ( $\beta=.31$ ,  $p<.001$ ). The conclusion that feelings of luck mediated the effect of priming was supported by a Sobel test statistic of 2.13 ( $p<.05$ ).

## Experiment 4

The results of Experiments 2 and 3 suggest that priming people with lucky and unlucky numbers influences their estimates of the probability of winning a promotional game (e.g., a lottery) as well as their evaluations of such a promotion. These effects were mediated by their altered perceptions of how lucky they felt. This finding lends support to our speculation that situational primes can make concepts of luck more salient and elicit diffuse feelings of being lucky or unlucky and these temporary changes in self perception influence behavior whenever these feelings are relevant.

Experiment 4 extended our conclusions in several ways. First, although the findings of Experiment 3 suggest that the effects we observed were not driven by affect, this inference was based on indirect evidence. Specifically, we assumed that the changes in self-perception of luck would manifest in differential consumer responses to the two types of promotions. It seemed desirable to rule out the possible influence of affect in a more direct manner. Second, our conceptualization assumes that people's beliefs in luck are stable and the nature of these beliefs does not vary with situational primes. Rather, the primes elicit diffuse feelings of positive affect or alternately change how lucky people feel they are temporarily and these alternative mechanisms have an impact on behavior. It therefore seemed desirable to show that the priming manipulation did not change chronic beliefs about good luck but nevertheless had an impact on actual behavior through temporary changes in how lucky people felt (the active-self account). Third, and more important, it placed constraints on the conditions in which luck-related concepts exert an influence. In particular, if the underlying cognitive process is through changes in the active-self, this influence may occur only among individuals who have an a priori disposition to focus their attention on the positive consequences of decisions rather than their negative consequences.

The effect of activating luck-related concepts and feelings on risk taking should, therefore, depend on different motivational dispositions such as promotion and prevention focus (Higgins, 1998). Although these dispositions may be situationally induced (Briley & Wyer, 2002; Briley, Morris & Simonson, 2005; Liberman, Idson, Camacho & Higgins, 1999; Sengupta & Zhou, 2007), chronic individual differences in regulatory focus exist as well (Lockwood et al., 2002). These differences in regulatory focus reflect differences in how these positive and negative outcomes are *evaluated* whereas the activation of concepts associated with good luck typically influence beliefs in the *probability* of a positive outcome (e.g., winning a lottery, making money on the stock market etc.). Two conditions might be necessary for a person to take a risk. First, they may need to

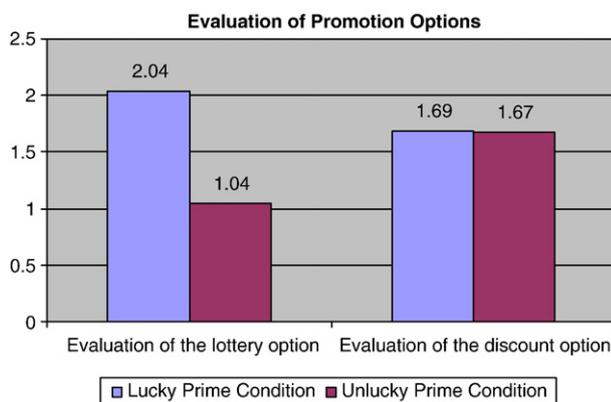


Fig. 3. Evaluation of promotion options (Experiment 3).

focus more on the desirability of winning (hopes and aspirations) than on the cost of losing. Second, they may need to believe that the probability of winning is fairly high. To this extent they may be inclined to take a risk only if they are both high in promotion focus (and focus on the hope of better outcomes) and concepts associated with good luck are primed (leading them to feel that they are likely to win). If they are inclined to focus on losses rather than gains (prevention focus), or if they feel that a positive outcome is unlikely, their likelihood of taking a risk may be low. This possibility was examined in Experiment 4.

### *Method*

Thirty-eight Hong Kong Chinese undergraduates were paid HK\$60 to participate in the experiment. They were randomly assigned to one of two priming conditions (lucky and unlucky). As in previous studies, participants were told that they would be asked to take part in a number of short studies that were unrelated to one another but were being run together to give them one full hour of experimental credit. The study was run in two adjacent labs and participants moved from one to the other for reasons to be described shortly.

### *Regulatory focus questionnaire*

After the preliminary instructions participants were asked to participate in a personality survey and asked to complete a few questionnaires that assessed various aspects of their personality. A regulatory focus questionnaire was administered along with several other personality measures. We adopted a questionnaire that has been shown to capture differences in regulatory focus from Lockwood et al. (2002) to measure participants' dominant regulatory focus. Following Lockwood et al.'s procedure, each participant's average response to prevention focus scale items was subtracted from his or her average response to promotion focus items.

After participants finished the personality measures, they were led to another room ostensibly to participate in a different study. A second experimenter then instructed participants for the remainder of the study, which consisted of a number priming task, a lottery choice decision, financial investment decisions and completion of the mood and Belief in Good Luck (Darke & Freedman, 1997a) scales.

### *Number priming*

The first task that participants completed in the second room was the number priming task that was administered in Experiment 3.

### *Lottery choice*

After completing the priming task, participants were told that as a token of appreciation, the marketing department was offering participants a chance to take part in a draw where a "Dinner buffet for two" gift certificate from a prestigious hotel in Hong Kong valued at over HK\$700 was being offered as a prize. They were also told that approximately 180 participants who had participated in various studies were

eligible. A computer would randomly pick the winner from among the individuals who decided to participate. However, participants were told that it would cost them HK\$5 to join the draw and that persons who wished to join could pay the experimenter after the session. Those who wished to participate were then asked to sign a lottery participation form and leave behind their contact details. Those who chose not to participate were asked to leave the lottery participation form blank. Thus, unlike previous experiments in which participants were asked to decide between a cash payment and lottery chance (e.g., Kivetz & Simonson, 2002), participants in our study actually had to use the money they earned to pay for the lottery. We expected that this would provide a stronger indication of participants' risk-taking behavior outside the laboratory.

### *Financial investment choice*

To obtain an additional index of risk taking, participants received a revised version of the financial investment questionnaire developed by Zhou and Pham (2004) after they had made their lottery choices. Participants were asked to imagine that they had inherited HK\$15,000 and had to decide between two different types of investment opportunities. One option was to deposit the money into an individual retirement account (IRA). They were told that the IRA's objective was to look for long-term growth and income, and that a financial planner typically managed the account. The other option was to deposit their money into an online trading account (e.g., E\*Trade). Such an account could ostensibly be set up by the individual investor and allowed investors to buy and sell stocks online. It required active monitoring on a day-to-day basis and investors would personally be in charge of buying and selling. (Such an option was ostensibly more risky.) Participants were asked to indicate how much of the HK\$15,000 inheritance they would allocate to each type of account.

### *Mood check, BIGL scale, and funnel debriefing*

After the financial investment choice task, participants were asked to indicate how happy they felt "right now" along a scale from -5 (Extremely Unhappy) to +5 (Extremely Happy). Participants then completed Darke and Freedman's (1997a) 12-item Belief in Good Luck (BIGL) scale that measures chronic differences in beliefs about luck.

Finally, participants completed a funnel debriefing form similar to the one administered in Experiment 3. No participant showed any awareness or suspicion of the true relation between the different tasks of the experiment or indicated that what they had done on one task might have affected how they did on another task. Thus, as in Experiment 3, our number priming manipulation did not alert participants to the actual relation between different tasks. After completing the funnel debriefing form, the experimenter collected the payment for the lottery participation from participants who wished to participate, thanked and debriefed them. The lottery was actually conducted later in the semester and a gift certificate was given to the winner.

## Results

### Priming task

The mean favorableness of the lucky and unlucky numbers used in the priming questionnaire was analyzed as a function of luck priming conditions. Participants indicated that they liked the lucky numbers better ( $M=2.45$ ) than the unlucky numbers ( $M=-.63$ ),  $F(1, 36)=63.43$ ,  $p<.01$ .

### Chronic beliefs in luck

An index of participant's chronic belief in luck was inferred from the measured Belief in Good Luck (BIGL) scale. Consistent with our expectation, primed luck concepts did not influence participants' chronic belief in luck (35.79 vs. 36.26,  $F<1$ ). This is consistent with our expectation that the nature of these chronic beliefs is not likely to change because of the priming manipulation.

### Lottery participation

We speculated that although participants would be more inclined to join the lottery if they had been primed with lucky numbers than if they had been primed with unlucky numbers, this might only be apparent among participants with a disposition to focus on positive consequences of their decision (i.e., the reward they could obtain) rather than negative consequences (the cost of participating). We first formed an interaction item by multiplying the mean-centered continuous variable (the dominant regulatory focus scores) by the categorical variable (the priming conditions). We then regressed the proportion of participants who chose to join the lottery on priming conditions, the dominant regulatory focus scores, and the interaction item. Consistent with our expectation, the regression analysis revealed a significant interaction of regulatory focus and priming conditions ( $\beta=-.23$ ,  $t=-2.22$ ,  $p<.05$ ), suggesting that the effect of the luck prime on lottery participation rate was moderated by participants' regulatory focus.

To assist in the interpretation of this interaction, we then used the more traditional median split procedure (e.g., Cesario, Grant & Higgins, 2004; Idson et al., 2000). Participants were classified into those who were relatively more promotion focused vs. relatively more prevention focused on the basis of a median split of the dominant regulatory focus scores. Then, the proportion of participants who chose to join the lottery was analyzed as a function of the priming conditions and regulatory focus. The main effect of priming was significant,  $F(1, 34)=4.65$ ,  $p<.05$ , and indicated that participants were more likely to join the lottery if they had been primed with lucky numbers (62.2%) than if they had been primed with unlucky numbers (27.6%). In fact, however, this difference was evident only among participants who were relatively promotion focused (80% vs. 16.7% in good luck vs. bad luck priming conditions, respectively) and was not at all apparent among participants who were prevention oriented (44.4% vs. 38.5%, respectively). The interaction of priming conditions and regulatory focus was marginally significant,  $F(1, 34)=3.18$ ,  $p<.10$ . Furthermore, a planned contrast showed that promotion-focused participants who were primed with lucky

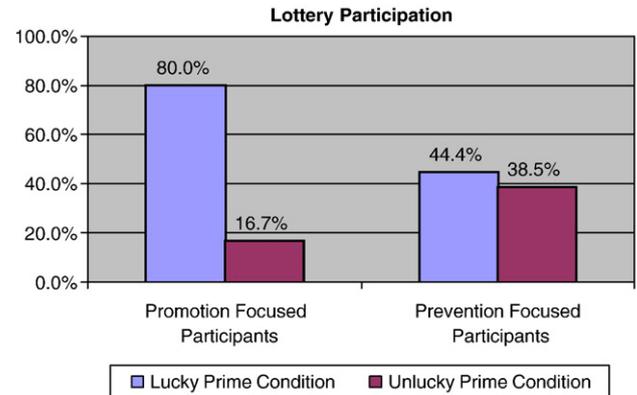


Fig. 4. Lottery participation (Experiment 4).

numbers were more likely to participate in the lottery (80%) than participants in the other three conditions combined (35.7%),  $F(1, 34)=6.30$ ,  $p<.05$  (Fig. 4).

### Investment decisions

Participants' investments in the online trading account provided an additional indication of the risk they were willing to take. Similar to the analysis we did for the lottery participation rate, a regression analysis of the participants' investments in the online trading account on priming conditions, the mean-centered dominant regulatory focus scores, and the interaction item revealed a significant interaction of regulatory focus and priming conditions ( $\beta=-1859$ ,  $t=-2.61$ ,  $p<.05$ ), suggesting that the effect of luck prime on investment decisions was moderated by people's regulatory focus.

A subsequent ANOVA analysis of investments as a function of priming conditions and regulatory focus yielded two marginally significant main effects and an interaction. The main effect of luck primes suggested that participants were likely to invest more money in the online trading account when they were primed with lucky numbers ( $M=\$8586$ ) than when they were primed with unlucky numbers ( $M=\$5962$ ),  $F(1, 34)=3.89$ ,  $p<.10$ . The main effect of regulatory focus suggested that they were also likely to invest more money in this account if they were promotion focused ( $M=\$8025$ ) than if they were prevention focused ( $M=\$6017$ ),  $F(1, 34)=3.49$ ,  $p<.10$ . The interaction of these variables was also significant,  $F(1, 34)=7.45$ ,  $p<.05$ , and was similar in form to the corresponding effect on lottery decisions. That is, promotion-focused individuals invested more money in the online trading account if they were primed with lucky numbers ( $M=\$10,550$ ) than if they were primed with unlucky numbers ( $M=\$5500$ ), whereas prevention-focused participants did not ( $\$5611$  vs.  $\$6423$ , respectively). Furthermore, participants who were promotion focused and were primed with lucky numbers were willing to invest more money ( $M=\$10,550$ ) than were participants in the other three conditions combined ( $M=\$5964$ ),  $F(1, 34)=15.27$ ,  $p<.05$  (Fig. 5).

### Influence of affect

Consistent with the results of Experiment 1, participants reported feeling happier when they had been primed with lucky numbers ( $M=1.44$ ) than when they had been primed with

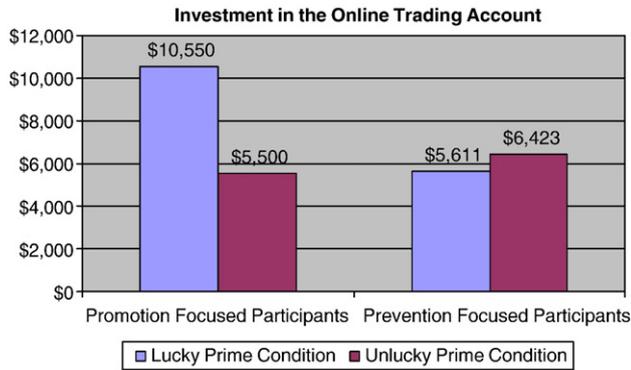


Fig. 5. Investment decisions (Experiment 4).

unlucky numbers ( $M = -.05$ ),  $F(1, 35) = 9.62$ ,  $p < .05$ .<sup>1</sup> However, these feelings did not mediate the interaction effect of priming and regulatory focus on participants' decisions to participate in the lottery. When feelings of happiness were introduced as a predictor of lottery decisions along with priming, regulatory focus and their interactions, the previously observed significant interaction was still significant ( $\beta = -.25$ ,  $p < .05$ ) and feelings of happiness had no impact at all ( $\beta = -.03$ ,  $p > .69$ ). Affect also did not mediate the interactive effect of priming and regulatory focus on participants' investment decisions. When feelings of happiness were introduced as a predictor of investment decisions along with priming, regulatory focus and their interactions, the previously observed significant interaction was still significant ( $\beta = -.1882$ ,  $p < .05$ ) and, feelings of happiness had no impact at all ( $\beta = -.225$ ,  $p > .62$ ).

Thus, although priming lucky vs. unlucky numbers influenced the positive affect that participants experienced, these feelings did not influence their decision to participate in the lottery and invest in different types of financial assets. Rather, these decisions were driven by temporary changes in participants' perceptions of how lucky they felt they were at that moment, as implied by the results of Experiments 2 and 3.

## General discussion

Although previous studies have explored the antecedences and consequences of luck using attribution theory (e. g., Fischhoff, 1976; Weiner et al., 1987), personality variables (Darke & Freedman, 1997a;b), and more recently a cognitive priming approach (DeMarree et al., 2005; Kramer & Block, 2008), research on the underlying mechanism of how luck influences consumer judgment and behavior has been noticeably absent in the extant literature. Moreover, in much of this previous work, luck is manipulated in a way that is very likely to elicit positive affect as well. Thus, it is difficult to articulate whether the observed effects of luck are due to chronic beliefs about luck, temporary changes in how lucky people feel, or because of changes caused by the positive affect that is experienced.

In the current research, we showed that priming participants subliminally with luck-related stimuli made them feel luckier

and happier (Experiment 1). We also found that the effects of priming luck increased participants' estimates of the likelihood of favorable events, their participation in lotteries, the amount of money they invested in relatively risky financial options and these effects appeared to be mediated by temporary changes in perceptions of luck (Experiments 2 and 3) rather than by affect (Experiment 4). Moreover, the effects of such primes were more evident when a consumer has a promotion orientation rather than a prevention orientation. Several aspects of these findings are noteworthy.

First, even though primes influenced people's mood (i.e., participants primed with lucky numbers felt happier) these feelings were apparently not responsible for the effects we observed in later experiments. This does not mean that positive affect does not play a role. Rather, it suggests that the influence of affect is more general and even though it could lead to feelings of optimism as Darke and Freedman (1997a) suggest, they do not influence risk taking behavior. The primes, however, do lead to temporary changes in how lucky participants feel (without participants being aware of what has made them feel that way) and these feelings have a more specific effect on risk taking.

Second, our conceptualization that luck primes can influence behavior by temporarily altering how lucky participants feel they are provides preliminary empirical support for the active-self account proposed by Wheeler et al. (2007). As noted at the outset, the effects of primes on knowledge accessibility and behavior are well documented. However, the processes that underlie the prime to behavior link are less clear because primes don't always have the same directional impact on behavior. The active-self account suggests that primed concepts might influence aspects of the self in working memory (the active-self) and these temporary changes might be responsible for the more circumscribed effects on judgments and behavior. Specifically, one important implication of the active-self account is that temporary changes in the active self are likely to have more of an influence if people do not try to resolve inconsistencies between the temporarily altered self concept in working memory and the chronic self concept. In our research, we found evidence for this in Experiment 4. That is, people who had a promotion orientation (i.e., focused on positive outcomes, hopes, aspirations etc.) were more likely to be influenced by such primes. It is conceivable that people with these orientations did not perceive the conflict between their temporarily altered self concept and their chronic beliefs in luck.

In this context, it is worth noting that feelings of luck might play a different role depending on the cultural context. Previous research suggests that beliefs about good and bad luck are related to different psychological constructs (Darke & Freedman, 1997a). It is therefore conceivable that people from different cultures might be more or less sensitive to symbols of good vs. bad luck and these sensitivities might, in turn, be linked to their promotion and prevention orientation. The extent to which luck related symbols exert an influence on different consumer behaviors across cultures would be a useful avenue for future research.

<sup>1</sup> One respondent failed to fill out this scale measure and was omitted from the analysis.

Third, our findings have specific implications for marketing practice and consumer risk taking behavior more generally. For instance, they suggest that promotions might be effective for different reasons. Some might be effective because of the positive affect that is elicited. Others (such as promotional games) might be effective because the presence of luck related cues in the environment can change consumers' self-perceptions of how lucky they feel at the point of purchase. The more general implications of our findings lie in the domain of risk taking in consumer decisions. Experiments 2 and 4 showed that people who had been primed with good luck not only overestimated their probability of winning but were also more likely to participate in lotteries and choose riskier financial options for investments. Given that the primes we showed were unobtrusive (and quite likely to be the sort that will be encountered in an everyday setting) their effects on behavior are noteworthy for public policy makers who might wish to note that although luck related symbols make people feel good (Experiment 1), they lead to poorer decisions not because of the affect they experience but because of temporarily altered self-perceptions.

As we noted earlier, our findings do not suggest that positive affect does not play a role. The effect of positive affect (elicited by the priming of luck-related concepts) was not evident in the domains we considered. It might, however, operate in other domains. For example, positive affect is known to lead to increased sociability and benevolence (cf. Taylor & Brown, 1988). Future research could identify if feelings of luck and positive affect (elicited, for example, among lottery winners) have directionally opposite effects on helping behavior. Although the effect of positive affect on helping is well documented, it is unclear if people who feel lucky, temporarily, will consider helping those that are less fortunate. It would also be interesting to determine if the effects of these two feelings on desire to take subsequent risks depends on the size of the risk. People experiencing positive affect after a win, might be more likely to take small risks but less likely to take big risks. However, those feeling temporarily lucky might decide to take risks regardless of the magnitude of the risk.

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