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Culture and Cognition: the Case of Irrational Beliefs About Luck

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Culture and cognition: The case of irrational beliefs about luck
Session chair: Rashmi Adaval, Hong Kong University of Science & Technology
Discussion leader: Robert S. Wyer, Hong Kong University of Science and Technology
1. The effects of luck and self-esteem: Cultural differences in risky decision making
Ana Valenzuela, Baruch College
Peter Darke, University of British Columbia
Donnel A. Briley, University of Sydney
Previous literature has found that lucky experiences have a paradoxical effect on expectations of future performance. These results are quite similar to findings in the self-esteem literature concerning ego-threat. The present study investigates whether cultures with different control orientations (American vs. Chinese) differ in their sensitivity to luck and self-esteem using a risky decision task. Three different studies show that cultures with an internal locus of control engage in more risky decision-making when self-esteem is enhanced. On the other hand, cultures with an external locus of control make more risky choices when they believe that they are personally lucky.
2. Priming lucky numbers: Effects on attributions and performance
Yuwei Jiang, Hong Kong University of Science & Technology
Angela Cho, Hong Kong University of Science & Technology
Rashmi Adaval, Hong Kong University of Science & Technology
Three studies demonstrate how numbers symbolize luck in Asian cultures and can prime attributions that people make as well as behavior. One study shows how participants who are primed with lucky or unlucky numbers attribute success or failure to internal (personal) or external (outside) factors. Two other studies show the impact of such priming on performance. Priming with lucky or unlucky numbers influences performance on an anagram task. Further, the use of lucky and unlucky numbers in product pricing influences the amount of money that people are willing to pay and reduces the anchoring effects that price anchors typically have.
3. Retrospective evaluations: Will chance versus luck oriented individuals select different moments of an experience?
Elizabeth Cowley, University of Sydney
Colin Farrell, University of Sydney
Previous research has shown that retrospective evaluations of purely painful or purely pleasant experiences are based on a few select moments of an experience. Specifically, the most intensely painful or pleasurable moments and the last moments of the experience are heavily weighted in memory. We investigate how and when the peak win, the peak loss, and the last moments of a gambling experience are used to estimate remembered utility (or liking) and remembered disutility (or disliking) in a mixed experience. The results show that the moments selected for the retrospective evaluation depend on whether the person is luck-oriented or chance-oriented.

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SPECIAL SESSION SUMMARY

Culture and Cognition: The Case of Irrational Beliefs about Luck

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SESSION OVERVIEW

*Fortune is merry,
And in this mood will give us anything.
- William Shakespeare*

People often attribute life's vicissitudes to luck. Such attributions are particularly common among certain Asian cultures where fortuitous events are regularly attributed to luck or fate. Even if an event occurs randomly, individuals' implicit beliefs about luck might lead them to contradict the claim that this event occurred purely by chance. Further, anecdotal evidence suggests that people are also irrational in their interpretations of situations involving luck or chance. For example, some poker players talk to the dice before throwing it (Hayano 1978) perhaps believing that they can influence the outcome. Yet, the systematic investigation of why people behave in these ways has received scant attention from researchers.

Beliefs about luck play an important role in a number of consumption situations. For example, shoppers in Hong Kong pay very high prices for license plates that are considered lucky (Vanhonacker 2004) and a large number of retailers use the lucky number "8" in the prices and phone numbers. More importantly, both retailers and manufacturers in China use luck-based promotional games and events to boost sales, and many marketers depend on such tactics for their promotional strategies. An understanding of how consumers interpret these luck-related offers has obvious implications for consumer welfare. In addition to the typical consumption situations described here, luck-related behaviors have a dark side. In several other countries, addiction to gambling is a social problem that affects large sections of the population. Many such addictive behaviors result from a lack of self-control and irrational beliefs that the next attempt at the wheel will be lucky. As large sections of the population in several countries succumb to the gambling addictions and various "come-ons" that lure them into thinking that today will be their "lucky day", policy makers need to be aware of tactics that are used to exploit vulnerable sections of the population. To be fair, however, beliefs in luck are not necessarily always bad for the individual. In some cases they might serve as a sort of positive illusion (Darke and Freedman 1997), an important source of optimism for people in their daily lives and, therefore, might be functional to a degree.

Our session provides a theoretical understanding of luck-related phenomena using existing models of information processing. The first paper in the session by Valenzuela, Darke and Briley investigates whether cultures with different control orientations (American vs. Chinese) differ in their sensitivity to luck. Beliefs in luck and personal self-esteem are relied on differentially in these cultures and this difference might influence the extent to which they rely on luck in opting for a risky choice. The paper reports findings from two cross cultural studies and shows that people from cultures that have an internal locus of control are likely to engage in more risky decision-making when self-esteem is enhanced. On the other hand, cultures with an external locus of control make more risky choices when they feel lucky.

The second paper by Jiang, Cho and Adaval provides a different perspective on how luck might have an impact on behavior. According to this research, objects and symbols can be associated with luck and this association might exist in memory around

the concept "luck". Once this concept is activated, it can influence our behavior regardless of our individual beliefs about luck. Thus, within Asian cultures, the symbolism associated with lucky and unlucky numbers can prime luck related concepts in memory. Once activated, this primed luck concept can influence a) people's subjective feeling of how lucky they are and the positive affect they experience, b) their interpretation of situations, c) motivation and performance on a cognitive task and d) product choices.

The fact that numbers can be used to prime luck related concepts suggests that beliefs about luck and events or objects associated with luck are represented in memory in some form and can be selectively retrieved. The third paper by Cowley and Farrell identifies how such luck related events might be stored and retrieved from memory. This paper identifies how people who believe in luck remember different things relative to those who don't believe in luck. A large study using data from real gamblers provides insight into the memories of these luck or chance oriented gamblers and shows that they remember different aspects of the experience. Some focus on peak wins and losses while others focus on the last experience.

Collectively, these papers provide a coherent message about how chronic and temporarily activated beliefs about luck have an impact on memory, motivation, decision making and performance.

"The Effects of Luck and Self-Esteem: Cultural Differences in Risky Decision-Making"

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Previous literature has found that lucky experiences have a paradoxical effect on expectations of future performance (Darke and Freedman 1997). Subjects who thought luck was a personal, stable factor reacted to a lucky event with higher expectations for performance, while those who perceived luck as completely random had lower expectations following initial luck. As a consequence, beliefs in good luck may buffer people from feelings of uncertainty and enhance risk taking. These results are quite similar to findings in the self-esteem literature concerning ego-threat (e.g. Baumeister et al. 1993). In fact, self-esteem has been shown to predict risk-taking particularly in the domain of gains (Josephs, Larrick, Steele and Nisbett 1992). However, respondents' cultural identity is expected to moderate these effects. People have implicit theories about whether behavior is driven merely by an individual's ability (internal locus of control) or by situational forces (external locus of control). Individual responses to success or failure are likely to differ depending on the theory to which they subscribe (Rotter 1966). Individuals that believe in external locus of control may be more likely to shift their expectations for future performance depending on whether they are lucky or not (Hong and Chiu 1988). Research by Weisz, Rothbaum and Blackburn (1984) indicates that East Asians tend to exhibit more external locus of control than North Americans. Additionally, Heine and Lehman (1997) also identified cultural differences in self-esteem maintenance for Japanese vs. North Americans. They found that many self-esteem related effects such as post-decisional dissonance occur with North Americans but not with Japanese. As a consequence, we expect that individuals who subscribe to different implicit theories of behavior (North American vs. Chinese) will differ in their sensitivity to luck

and self-esteem in risky decision-making. In other words, people seem to use important dimensions of their self-concept as a buffer against different kinds of threats—in this case the risk of getting no money when taking a chance on winning a larger sum of money. Self-affirmation on the dimension of ability should be more effective in buffering the risk of the gamble in western cultures while self-affirmation on personal luck should be more effective in buffering risk in the eastern cultures. Three studies investigate this proposition.

In Study 1, we use a risky decision task (e.g. Tversky and Kahneman 1981) to analyze whether cultures differ in their sensitivity to luck and self-esteem. Subjects were asked to choose between an option with a certain outcome and another option (or prospect) with a probabilistic outcome. Despite differences in the level of risk involved, the expected outcomes were the same for both options. In addition, decisions pertained to either gains or losses, depending on the decision frame. For example, positively framed decisions gave subjects a choice between a sure gain of \$30 and an 85 percent chance to gain \$45. Whereas, subjects chose between a sure loss of \$30 and an 85 percent chance of losing \$45 when the decision was framed negatively. We ran the study using undergraduate students from both Canada and Hong Kong. Subjects completed a set of 10 decisions (5 with a gain frame and 5 with a loss frame) presented on a computer screen. The order was randomized by subject. The alternatives in each decision differed only in terms of the amount of risk involved. When subjects chose a risky option, the final outcome was determined using a lottery procedure. There was also an initial luck manipulation: Half of the subjects got \$5 from the start while half had to participate in a lottery to win it (although everyone won). We measured Beliefs in Good Luck (Darke and Freedman 1997) and self-esteem (Rosenberg 1965).

Results show that neither self-esteem nor beliefs in luck affect behavior in loss domains for either culture. People seem to be so averse to losses that individual differences are just not that important. In other words, loss aversion seems to be universally felt, though gain pursuit was not. In the gain domain, Canadian (but not Hong Kong) respondents chose the risky option more often when they rated high on self-esteem. Also in the gain domain, Hong Kong (but not Canadian) respondents chose more risky options when they had stronger beliefs in good luck. Only in Canada did the initial luck manipulation interact with self esteem: High self-esteem subjects took more risks after winning the initial lottery. In the case of Hong Kong, the initial luck manipulation did not interact with individual's beliefs in good luck. Instead, those who believed in luck tended to take more risks regardless of context induced by initial luck.

Study 2 replicated Study 1's design (without the initial luck manipulation) and added a between-subjects priming manipulation. U.S. Caucasian and Hong Kong undergraduate students were primed to think either about their good luck or their strong ability by describing a situation in which they were either lucky or skillful. The results showed that U.S. Caucasian respondents that were primed to think about their skill tended to choose more risky options than those that were primed about luck. Respondents that had to describe a skill-based situation felt that they were describing something more important about themselves than those that described a high ability situation. In the case of Hong Kong students, luck-beliefs priming did not enhance the effect of individual's beliefs in good luck, which again support the idea that beliefs in good luck are not as context-dependent as individual self-esteem.

In sum, our results support the idea that cultures differ in the way people deal with uncertainty in everyday life (Weisz, Rothbaum and Blackburn 1984). North Americans tend to believe in their own capability to control the situation. As a consequence, they are

willing to make more risky decisions when a positive event enhances their self-esteem. In contrast, Asian cultures tend to assess the favorability of the situation and take more risk when they believe their personal good luck will put the situation in their favor. In addition, the effects of self-esteem on risk taking seem to be more context-dependent than beliefs in good luck. Further study in risky domains that are skill-based instead of luck-based would bring more light to this research question.

“Priming Lucky Numbers: Effects on Attributions and Performance”

Yuwei Jiang, Hong Kong University of Science and Technology
Angela Cho, Hong Kong University of Science and Technology
Rashmi Adaval, Hong Kong University of Science and Technology

Social psychologists have typically considered luck as an external, unstable factor in explaining social events (Rotter, 1966; Weiner et al., 1987). Those who attribute an event to luck are asserting that they were not responsible for it and that it has no implications for similar events in the future. Nevertheless, this definition of luck is not universally agreed on (Meyer 1980; Meyer & Koelbl 1982) and people's own perception of luck differs from that of researchers. Fischhoff (1976) suggests that this disagreement arises because of the tendency to confuse luck with chance. While chance is more consistent with the notion of an external, unstable factor, luck might or might not fit into this classification. For example, when people think about luck, they might be referring either to attributions about the person (e.g., he is an unlucky person) in which case luck is seen as stable or, they might be referring to an event (an external, unstable factor caused his house to burn down).

Although chronic beliefs about how lucky one is are widely held (Darke and Freedman 1997) we suggest that in addition to these chronic beliefs, people might be influenced by transient factors that make luck salient. Our conception of luck is therefore somewhat different. While we agree that people might have chronic beliefs about luck, we also believe that luck exists as a concept in memory. Like any other concept, it is associated with luck-related objects (e.g., lucky numbers, a four-leaf clover) and events (e.g., situations in which a person was lucky) in addition to individual beliefs about how lucky one is. If luck exists as a concept in memory, it can be made more or less accessible through standard priming techniques (or situational factors). Thus, even though people may vary in the degree to which they hold chronic beliefs about how lucky they are, they might be influenced by objects and events around them that prime luck related concepts and make them more accessible.

We expected that when luck is made salient, people will expect lucky events to occur in the immediate future and will be less protective of their resources, and slower to exercise cognitive effort in tasks. Further, their interpretation of events (with positive or negative outcomes) might also reveal a bias towards luck related attributions. To examine these general hypotheses, we primed individuals with lucky or unlucky numbers. It is worth noting that there is ample anecdotal and some empirical evidence that numbers in Chinese cultures symbolize luck. (For example, numbers such as 8, 88, etc. are considered to be lucky, and are consequently believed to bring good luck whereas numbers such as 4, 44, etc. are considered unlucky and ostensibly bring misfortune. The sale of lucky license plates and use of lucky prices suggests that people acquire these goods with the belief that these objects will bring them additional luck (Vanhonacker, 2004).)

In the first study, we subliminally primed research participants with the lucky number “8”; the unlucky number “4”; the word “lucky”; the word “unlucky” or meaningless symbols “~”, and

asked them to indicate how lucky they felt and how happy they felt. Participants who were primed with a lucky number or a lucky word felt luckier and happier than those primed with unlucky numbers and words. Further, there were no differences between the priming of numbers or words and between control and unlucky prime conditions. It is important to note that perceptions of luck and positive affect that resulted as a consequence of priming were independent of each other.

In the second study, we primed research participants with lucky numbers, unlucky numbers or neutral numbers and provided them with scenarios where the protagonist of a story either succeeded or failed in a task. Participants were asked to attribute success or failure to personal effort or external factors. When the luck concept was activated (by priming either lucky numbers or unlucky ones), participants tended to attribute positive outcomes to external factors (e.g., the person was lucky) and negative outcomes to internal factors (e.g., the person did not work hard). The latter finding is intriguing because it suggests that even though luck was salient, people attributed negative outcomes to personal effort—perhaps because they felt the person did not succeed despite having luck on their side.

In a third experiment, we examined how priming luck would influence participants' actual task performance. We found that exposing participants to either lucky or unlucky numbers decreased their performance on a subsequent anagram-solving task especially when the anagrams were difficult. Thus, activating concepts about luck stimulated participants to believe that performance outcomes were out of their control and, therefore, they did not try as hard as they might have otherwise.

Studies 2 and 3 did not show a difference between lucky and unlucky numbers (i.e., both types of numbers made the luck dimension salient). However, a difference emerged when the numbers pertained to price. For example, in Hong Kong, a price of HK\$74 is considered unlucky, whereas a price of HK\$88 is considered lucky. In our fourth experiment, research participants were given two size options of the same brand of ice cream. One option had a lucky price HK\$88 (for a 600ml pack); the other had an unlucky price HK\$74 (550ml). In some conditions, we provided participants with the unit price while in other conditions this information was not provided. Further, we asked participants to make a choice either for themselves (self-relevant) or for their office (not self-relevant). We observed that when the choice is difficult to make (unit prices were not given) or the purchase is not self-relevant (i.e., participants are told to choose one option for their office) they were more likely to pick the lucky priced option. This finding is consistent with study 3 and suggests that priming luck might influence people's motivation and might lead to greater use of the lucky price as a heuristic in decision-making.

In sum, our four studies suggest that luck related concepts are stored in memory and may be activated through simple priming tasks. Their accessibility relative to other concepts can influence not only how people interpret situations but also their motivation to perform in a cognitive task and their purchasing choice in the consumer domain.

“Retrospective Evaluations: Will Chance versus Luck Oriented Individuals Select Different Moments of an Experience?”

Elizabeth Cowley, University of Sydney
Colin Farrell, University of Sydney

People's evaluations of past experiences, such as liking and disliking, guide their decisions about the future. A recollection of the pleasure or pain felt during an experience could be retrieved directly from memory if the to-be-remembered event was a precise

instant, but typically people consider affective episodes, not single moments. To remember how much we enjoyed an experience, we need to recall how we felt during the target episode, which consists of many moments, and summarize those feelings. Retrospective evaluations of an experience draw on select moments of the experience. The peak-end rule predicts that the most influential moments will be the most extreme moment and the final moment (Fredrickson and Kahneman, 1993; Redelmeier and Kahneman, 1996). People also tend to prefer an improving trend or a happy ending (Ross and Simonson, 1991).

Most of the research investigating retrospective evaluations examines the disliking of painful situations (Ariely, 1998; Kahneman *et al.*, 1993; Kahneman *et al.*, 1997; Redelmeier and Kahneman, 1996; Schreiber and Kahneman, 2000). Although many of our experiences are a mixture of pleasant and painful moments, little is known about how people summarize feelings for mixed episodes. The experience examined here is a gambling session which includes wins and losses. We look at two 'types' of gamblers; luck-oriented gamblers (LGs) and chance-oriented gamblers (CGs). Our proposition is that gamblers with different orientations will draw on different moments of the experience when constructing retrospective evaluations.

What is the difference between luck and chance? Luck is a causal category used to explain successes and failures that cannot be attributed to ability, effort, or task difficulty (Weiner *et al.*, 1987). Chance distributes events fairly and evenly, producing all possible outcomes with equal frequencies in the short and long term (Wagenaar, 1989; Wagenaar and Keren, 1988; Keren, 1994; Friedland, 1998).

Luck Orientation. LGs expect carryover from one random or independent event to another. LGs often believe they have an advantage when betting because they are lucky. Given that being lucky is an enviable quality and interrupting a lucky streak is brings bad luck (Wagenaar, 1989), we expect LGs to remember when outcomes indicate they are lucky and the moment a 'lucky streak' is interrupted.

Chance Orientation. CGs believe that outcomes will be the same regardless of the person involved. CGs also expect that chance will distribute events evenly such that all possible outcomes will occur with equal frequency (Wagenaar, 1989; Wagenaar and Keren, 1988; Keren, 1994; Friedland, 1998). CGs have also been found to believe that there is no reliable process for predicting the outcome of uncertain events (Darke and Freedman, 1997). Since CGs believe outcomes are due to chance, CGs should remember a more positive experience when there is a happy ending as most people like to save the best for last.

To investigate this issue, one hundred and two gamblers were recruited via posters displayed in a gambling establishment. Participants were given \$75 of tokens to bet 22 times. Their winnings were converted to club membership points.

Five items were used to measure a participant's retrospective evaluation. All statements about the experience (gave me pleasure, gave me a sense of excitement, brought me happiness, made me feel delighted, made me feel good) were answered with Likert scales ($r=0.79$). Four items were used to assess remembered irritation. Again, all items (made me feel angry, gave me a sense of frustration, gave me a feeling of dissatisfaction, brought me disappointment) were answered with Likert scales ($r=.81$).

After gambling and completing the dependent measures, participants assessed four chance/luck scenarios adapted from Friedland (1992; 1998) to determine their LG or CG status. Participants distributed 100 points between luck and chance to indicate the cause of each outcome. This categorization was used as an independent variable in the results described below.

Remembered Liking (Retrospective Evaluation). Remembered liking for LGs and CGs was tested with separate regressions including the value of the peak win and peak loss, the slope of moments for the session, the value of the final bet, and the final cash position. Remembered liking for LGs was determined by the peak win only ($F(1, 40)=2.55, p<0.05$): the larger the win, the more positive the retrospective evaluation. The memory of liking for CGs was determined by the slope ($F(1, 50)=3.13, p<0.01$): the more lucrative the ending, the more positive the memory. Importantly, the final cash position was not significant for either LGs or CGs. All moments are not weighted equally in the construction of a retrospective evaluation.

Remembered Disliking (Irritation). Consistent with previous research asserting that positive and negative responses to the same event are independent and distinct responses (Cacioppo and Bernston, 1994; Eagly and Chaiken, 1998; Herr and Page, 2004), liking and disliking were not significantly negatively correlated for LGs ($r=-.01, ns.$). The final bet was the only significant variable for remembered irritation ($F(1, 40)=3.43, p<0.01$): the larger the win on the final bet, the greater the reported irritation. This suggests that LGs felt irritated given that the session ended just as their luck turned. Irritation felt because they did not have a chance to benefit from the lucky streak as it just began is consistent with previous research by Wagenaar (1989). The remembered irritation for CGs was determined by the slope ($F(1, 50)=-2.49, p<0.05$). This is interesting because it suggests that liking and disliking may not be independent for this group ($r=-.31, p<.05$).

The results indicate that LGs and CGs select different moments of a mixed experience to construct retrospective evaluations. LGs enjoy an experience that reinforces their *luckiness*, but become irritated by having a lucky streak interrupted. CGs remember more happiness when things get better at the end of the experience. For CGs, the outcome is due to chance, so the best case scenario is that the best is saved for last. It is also interesting that CGs use the same moments to remember liking and irritation while LGs use two very different moments in their retrospective evaluation.

Discussion

Robert S. Wyer, Hong Kong University of Science & Technology

People's perceptions of luck are certainly one of the more interesting topics in both psychology and consumer research. This interest was stimulated in part by Weiner's typology of the explanations that people give for their own and others' behavior. In particular, he classified the outcomes of performance in terms of both stability and agency, and assumed that luck was an unstable factor that was externally determined. Although this characterization of luck is intuitively reasonable, however, it does not always correspond to people's actual perceptions.

For example, many people believe that certain individuals are inherently lucky whereas others are chronically unlucky. That is, they perceive luck to be a stable dispositional determinant of behavioral outcomes. Several examples of people's illusions of control over chance events are provided by Langer (1975). The research reported in this symposium has similar implications. Cowley and Farrell, for example, also identified chronic individual differences in gamblers' belief that luck is at least temporarily stable. Thus, individuals often believe that their wins and losses over a series of trials are not independent. Rather, they perceive their outcomes to be guided by winning and losing streaks and base their bets accordingly.

In this regard, people may acquire implicit theories about the antecedents of their own and others' behavior that they apply when making judgments and decisions (cf. Ross, 1989; Dweck, Chiu, &

Hong, 1995; Wyer, 2004). Indeed, they may have several such theories, the application of which may be influenced by the theories' accessibility in memory and, therefore, the likelihood that they come to mind at the time a decision is made. For example, people may have both a skill related theory ("I am skilled, and so I will be successful") and a luck-related theory ("I am lucky, and so I will be successful"). The application of these theories may depend on both individual differences in their chronic accessibility and situational factors that make them temporarily salient.

Valenzuela et al.'s research exemplifies this possibility. Their results suggest that although skill-related and luck-related theories may exist to different degrees in Americans and Asians, they differ in their chronic accessibility. Americans are more likely to have a skill-related theory accessible in memory than a luck-related theory. Consequently, Americans with high self-esteem, who believe they are skillful, are likely to infer they will succeed on a task and are more likely to take risks than are those with low self-esteem. Although these individuals may also have a luck-related implicit theory, it is not highly accessible in memory, and so their beliefs in luck typically have little impact on their decisions.

In the case of Hong Kong Chinese, however, a luck-related theory may be more chronically accessible in memory than a skill-related theory. Thus, individual differences in these individuals' beliefs that they are lucky predict their risk-taking behavior whereas their beliefs in their skillfulness, do not.

As I've speculated, however, both types of theories may coexist in memory, and the cultural differences identified by Valenzuela et al. may only reflect differences in their chronic accessibility. If this is so, situational factors that influence the relative salience of the two theories could often override the differences they detected.

The research by Jiang, Cho and Adaval provides evidence that situational factors can, in fact, influence the extent to which implicit theories about luck are applied. Their research is particularly interesting in that it identifies motivational influences of these theories. Briefly, they show that activating concepts about luck in one situation can influence not only individuals' beliefs that others' outcomes are due to luck but also their own behavior and judgments. For example, priming luck-related concepts, which may activate an implicit theory that behavioral outcomes are not under one's control, decreases the effort that participants expend in achievement-related activity. Correspondingly, it increases the tendency to use heuristics in judgment task rather than expending the effort necessary to make a more reliable judgment.

However, the fact that these effects are influenced by situational factors emphasizes the fact that luck-related implicit theories may not be applied unless situational factors call them to people's attention. Jiang et al.'s work was done using Hong Kong subjects who are typically bicultural. As Valenzuela et al.'s findings also indicate, these individuals are more likely than Westerners to have luck-related theories chronically accessible in memory. Nevertheless, the chronic accessibility of these theories do not always guarantee their use when situational conditions make other bases for judgments and decisions more salient.

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