

## HOW CONFIDENCE AND UNCERTAINTY AFFECT CONSUMERS' ENJOYMENT OF GAMBLING

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In this research we explored the moderators that affect enjoyment when consumers gamble on predictions. We provide evidence that consumers who make predictions with great confidence will have more enjoyment and will increase the amount of their bet in a situation of high uncertainty. The findings have implications for marketing managers in that marketers may be able to create a controllable, yet risky, environment for consumers to increase their enjoyment. The results can also be applied by gambling companies to strategically enhance consumers' confidence and further encourage them to increase betting amounts. This research reinforces existing theories that levels of confidence and uncertainty can influence willingness to bet.

*Keywords:* confidence, uncertainty, enjoyment, prediction, gambling.

People often try to predict the outcome of an upcoming event. For example, during football season, thousands of people log onto Yahoo's fantasy sports (<http://fantasysports.yahoo.com>) to predict results of upcoming National Football League and college football games (Simmons & Nelson, 2006). Some television contest programs, such as *Survivor*, also encourage audiences to vote for their favorites in order to increase viewer enjoyment and ratings (Mandel & Nowlis, 2008). There is also a group of people who like to bet on races, such as car racing, to enhance enjoyment and in the hope that their bet will provide them with extra income. Indeed, prior researchers have found that having viewers make predictions about the outcome of an event can dramatically increase enjoyment.

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Marketers encourage consumers strategically to perform such behaviors (Kivetz & Simonson, 2000). Thus, our basic research focus was determining what factors can have effects on consumers' enjoyment of predicting outcomes. Prior researchers have suggested that the degree of uncertainty can have an impact on the enjoyment of predicting the outcome of an event (Mandel & Nowlis, 2008). Furthermore, the level of confidence can influence the individual's actions and decision making (Ülkümen, Manoj, & Morwitz, 2008). In this study, we investigated the moderating role of the degree of confidence as this related to the outcome of an event in determining how predictions might affect enjoyment and the magnitude of a bet placed on a race, or other event or outcome. By studying how predictions interact with various factors to affect enjoyment, we made a contribution to the literature.

### **Uncertainty and Enjoyment**

When a consumer predicts the outcome of an event, the prediction may have a positive or negative effect on the enjoyment of the event that this individual experiences. As described by Wilson, Centerbar, Kermer, and Gilbert (2005) positive uncertain prospects can elicit positive feelings from events with uncertain outcomes. Individuals can experience greater pleasure from uncertainty than from certainty (Lee & Qiu, 2009). The findings in those two studies can be applied by marketers to encourage consumers to vote for their favorites on websites as a means of stimulating involvement and increasing the enjoyment driven by their predicting behavior. Consequently, consumers will experience greater enjoyment while waiting to learn the outcome of their prediction. On the other hand, uncertainty has been found to be linked with worry and difficulty in adapting to new environments and cultures (Gordon, 2003). Although people are naturally curious, they might feel disappointed when their curiosity is satisfied (Loewenstein, 1994). Calvo and Castillo (2001) also suggested that negative affective consequences of uncertainty can evoke negative feelings. As a result, people may experience displeasure when they participate in an uncertain event.

### **The Role of Confidence**

It has been suggested that confidence plays an important role when people make a decision. *Confidence is a cognitive component that reflects the level of certainty or conviction with which a belief is held* (Bennett & Harrell, 1975). Berger (1992) defined *confidence as an individual's belief that his or her judgment is accurate*. Specifically, confidence has a positive relationship to the amount of information to which an individual has access, and this effect can be generated by providing participants with more information (Dover & Olson, 1977), more repetitions of the same information (Berger & Mitchell, 1989), or variations of the same information (Haugtvedt, Schumann, Schneier, & Warren,

1994). In addition, Ülkümen et al. (2008) explained an individual's attitude toward events, that is, when people believe the question is easy, the probability of their answer being right will be high. On the contrary, when they feel the question is difficult, the probability of their answer being right will be low. In the light of these research findings, we reasoned that the degree of confidence would result in different levels of enjoyment when participating in an event. Consumers with greater confidence would experience more enjoyment because of their positive conviction about the outcome, while those with less confidence would experience less enjoyment because of the anxiety that resulted from their inability to make a prediction. We therefore proposed the following hypothesis:

**Hypothesis 1:** Consumers' degree of confidence will influence their enjoyment when they participate in an event. Their enjoyment will be greater when they participate in an event about which they have high confidence of a positive outcome than when they participate in an event about which they have low confidence of a positive outcome.

#### **What Factors can Affect the Amount of a Bet?**

Degree of uncertainty can affect consumers' confidence, which results in a different level of performance. For example, when gambling, gamblers may increase the amount of a bet if they feel the outcome is very certain. In contrast, they might reduce the amount of a bet if the degree of uncertainty increases. Thus, we reasoned that consumers would increase the amount of bets when they are in situations of low uncertainty because they would be confident of a high probability that their prediction is correct. However, they would not bet when their level of uncertainty was high because they would have less confidence in their prediction. We therefore proposed the following hypothesis:

**Hypothesis 2:** The degree of uncertainty will have an impact on the amount of a bet when consumers gamble. Consumers will increase the amount when uncertainty is low compared to when uncertainty is high.

The level of people's confidence can have an impact on their estimates in future budgets. Whether the estimation is easy may be associated with their level of confidence, which, in turn, is built on beliefs. Thus, if consumers can come up with the answer to a question promptly then the answer is generally right (Simmons & Nelson, 2006). Prior researchers have also found that when consumers make an estimation, they usually have a likely value in their minds, and then revise the value according to the simulations (Tversky & Kahneman, 1974). However, moderation of value happens only when consumers consider their estimates false. Soon after consumers receive the stimulus of information, they will process it in their minds; if they feel their response is easy to decide on, they have more confidence, and they will not easily change their original decision. Conversely, if consumers feel the response is difficult, they become less

confident, and will readily change their original choice. Indeed, Gilboa (2004) also argued that an individual's willingness to bet will increase along with his/her subjective confidence in information available and probability assessments. Kahneman, Slovic, and Tversky (1982) also argue that confidence in relation to probabilities is important since it controls decisions. Ellsberg (1961) and Raiffa and Schlaifer (1961) reported that people prefer to bet on events which have known probabilities rather than on events associated with a combination of uncertainties. Hence, we reasoned that when consumers gamble with high confidence in conditions of high uncertainty, they will place larger bets because they deem the probability of accurate prediction to be high. However, when they gamble in conditions of low uncertainty, they will not easily change the bet regardless of the degree of confidence, because they think the prediction is not difficult. We therefore proposed our last hypothesis:

**Hypothesis 3:** The level of an individual's confidence and uncertainty will interact with the amount they are prepared to bet. In conditions of high uncertainty, consumers with high confidence will significantly increase the amount of a bet compared to those with low confidence. While in conditions of low uncertainty the level of an individual's confidence will not significantly affect the amount of the bet.

## Method

### Participants and Procedure

Participants were 126 undergraduate and postgraduate students (60 male and 66 female) who assembled in a computer classroom with LCD screens. We employed a 3 (confidence: high vs. low vs. control)  $\times$  2 (uncertainty: high vs. low) between-subjects design. The students were told they were going to participate in an online guessing game contest and would be given NT\$40 to use for betting. It was explained that betting was solely for research purposes, as we did not wish to encourage them to gamble on campus. We manipulated the participants' level of confidence by having them guess the color of a ball three times before they started to play the game. We manipulated some participants to feel high confidence by having them obtain the right answer all three times, and others to have low confidence by having them obtain a wrong answer all three times (Simmons & Nelson, 2006). In the control condition, participants started to play the game immediately without guessing three times. Respondents were asked "How lucky do you feel now?" and answered on a scale of 1 = *not at all* to 7 = *very lucky*. We manipulated the level of uncertainty by having participants play a 50-50 (high uncertainty) game or a 90-10 (low uncertainty) game (Mandel & Nowlis, 2008). In the 50-50 game, there were 50 red balls and 50 white balls in the box. In the 90-10 game, there were 90 red balls and 10 white balls in the box.

Participants in the high-confidence condition had first played three times (not betting), and got three right answers. Next, they were asked “How lucky do you feel now?” After that, the instructions indicated the number of red and white balls, after which the computer system randomly showed a ball from the box. The respondents predicted the color of the ball and made a bet before the outcome was announced. If their answer was right they could win double the amount of their bet. If their answer was wrong they lost their money. After that, they viewed the outcome. The prediction was not correct.

Respondents in the low-confidence condition followed the same procedure as those in the high confidence condition, but when the participants played three times (not betting), all answers were wrong. Respondents in the control condition also followed the same procedure as those in the high confidence condition, but they did not have the trial before the formal game.

### Materials and Measures

The participants read the instruction from the computer screen and were given NT\$40 to use for betting in the online guessing game contest. Participants in all conditions rated their enjoyment of the game (on a scale from  $-7 = \textit{not at all}$  to  $7 = \textit{very much}$ ; Kahneman & Snell, 1992).

## Results

**Manipulation checks.** Participants in the high confidence condition experienced a higher level of confidence than those in the low confidence condition ( $M = 6.25$  vs.  $1.55$ ;  $F(1, 80) = 697.5$ ,  $p < .001$ ).

**Enjoyment.** We conducted a 3 (confidence: high vs. low vs. control)  $\times$  2 (uncertainty: high vs. low) analysis of variance (ANOVA) to analyze the results. As we predicted in Hypothesis 1, the level of confidence of participants had significant effects on the enjoyment of participating in a game ( $F(2, 120) = 6.28$ ,  $p < .01$ ). The mean enjoyment of participants in the high-confidence condition was significantly higher than that of participants in the low confidence condition ( $M = -.67$  vs.  $-3.2$ ;  $p < .01$ ).

**Amount of bet.** Consistent with Hypothesis 2, the degree of uncertainty had a significant effect on the amount of the bet when consumers gamble ( $F(1, 120) = 17.82$ ,  $p < .01$ ). Our participants increased the amount of their bet by more when in the low-uncertainty condition, compared with those in the high-uncertainty condition ( $M = 28.5$  vs.  $19.85$ ;  $p < .01$ ). More importantly, the two-way interaction between confidence and uncertainty was significant ( $F(2, 120) = 3.52$ ,  $p < .05$ ). As can be seen from Figure 1, in the high-uncertainty condition, participants with high confidence significantly increased the amount of their bet, compared to those with low confidence ( $M = 25.75$  vs.  $15.3$ ;  $p < .01$ ).

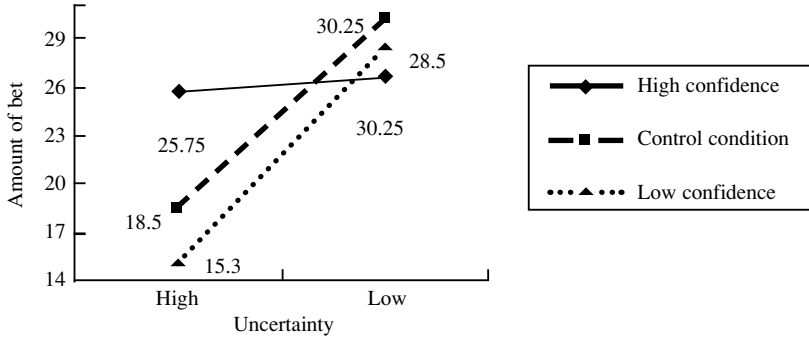


Figure 1. *The interaction of uncertainty and confidence on the amount of a bet.*

Nevertheless, in the low-uncertainty condition the level of confidence made no significant difference to the amount that participants placed as a bet ( $M = 26.75$  vs.  $28.5$ ;  $ns$ ), which supports Hypothesis 3.

## Discussion

Our results in this study support our proposition regarding the effect enjoyment has on the amount of money a consumer will use to bet on an outcome and how this is influenced by different levels of confidence and uncertainty. Consumers experience more enjoyment when predicting with high confidence, and this can result from positive conviction (Bennett & Harrell, 1975). Specifically, the amount of a bet can be moderated when consumers gamble with high confidence in conditions of high uncertainty, because they deem the probability of accurate prediction to be high. However, in conditions of low uncertainty consumers will not moderate the amount of the bet regardless of the level of confidence. It has been demonstrated that this is because in our study the probability of correct prediction could be quite high in conditions of low uncertainty and participants tended to view the risk for winning the bet as controllable. Our findings confirm those gained in previous studies (Ellsberg, 1961; Gilboa, 2004; Kahneman et al., 1982; Raiffa & Schlaifer, 1961) in that levels of confidence and uncertainty can influence willingness to bet.

The findings in our study have important implications for marketing managers in that marketers may be able to create a controllable, yet risky, environment for consumers. For example, the game marketer can balance both the degree of risk and probability of winning to raise levels of enjoyment. The results of this study can also be applied by gambling companies to strategically enhance consumers' confidence and further encourage customers to increase the amount

of their bets through satisfaction for the consumer in terms of both expectation and performance.

There are certain limitations in this research. First, we gave respondents only NT\$40 (about US\$1.24) to bet with in this study because we had a limited budget. In future investigations a higher amount to bet with would be likely to raise the respondents' degree of involvement and might produce different results. In particular, when respondents become more confident about predictions after winning again and again, to what extent would they stop betting and be satisfied with their performance? Participants could play only once owing to limited resources in our experiment. In addition, in this research we used graduate and postgraduate students as participants and the effect of enjoyment may not be the same for all consumers because students have limited financial resources. Given our understanding of the underlying mechanism, to what extent can our results be generalized to other consumers? Further research can create opportunities to shed light on the specific consequences of this question. Finally, it is possible that personality differences may result in various outcomes across conditions. Therefore, future researchers could explore the moderating role of personality on the effect of prediction of events in the areas of consumer behavior.

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