

Cognitive Dissonance Among Chinese Gamblers: Cultural Beliefs Versus Gambling Behavior

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Abstract

This study examined the extent to which cognitive dissonance exists among Chinese gamblers as a consequence of gambling while holding negative attitudes toward gambling, which are inherent in China's traditional cultural values. Using the behavioral variable of actual gambling and an attitudinal variable of negative beliefs about gambling, a third, practical measure of cognitive dissonance was developed. By using questionnaires completed by 200 adult Chinese respondents, these measures were examined in relation to a set of relevant independent variables frequently tested in the gambling literature. Cognitive dissonance was expected to have significant negative correlations with traditional Chinese values and family support, and a significant positive correlation with neuroticism. Cognitive dissonance was also expected to be negatively correlated with two personal outcomes, i.e. self-actualization and life satisfaction. The results supported these hypotheses, which confirmed the validity of the new measures, and that cognitive dissonance does indeed exist among Chinese gamblers. The results also found that Chinese gamblers, even though they do gamble, also hold negative attitudes toward gambling, with more cognitive dissonance strongly associated with higher levels of gambling. This provides a new perspective on studying Chinese gambling, and offers a possible strategy to help pathological gamblers, for example, by advising them that their negative beliefs about gambling reflect the positive moral values of their society's traditional culture, an approach that may be effective in reducing excessive gambling.

Keywords: Cognitive dissonance, Chinese, culture, gambling, traditional values

Introduction

Excessive gambling has been suspected to be a precursor of suicide and attempted suicide among Chinese gamblers (Hodgins, Mansley, & Thygesen, 2006). Also, in a recent study of 17 gamblers who had committed suicide, all of them (100%) had been diagnosed as pathological gamblers (Wong, Chan, Conwell, Conner, & Yip, 2010). Consequently, gambling among Chinese people can have dire consequences, and should be studied from a perspective, particularly a cognitive perspective, that may be able to reveal possible ways to reduce or overcome problems associated with gambling.

Although there has been a great deal of research on gambling among Chinese people, including that they gamble to a greater extent than other populations (Oei, Lin, & Raylu, 2008), and have higher rates of gambling addiction (Chen, Wong, Lee, Chan-Ho, & Lau, 1993), there has been almost no mention of the fact that the traditional values of Chinese society condemn gambling as immoral (Cheng, 2009). Additional evidence for the idea that gambling is deemed immoral in Chinese society can be found in research that shows Chinese gamblers under-reporting their gambling (Blaszczynski, Huyuh, Dumlao, & Farrell, 1998) because they see it as a reflection of “personal failure” and do not report it in order to “save face” (Loo, Raylu, & Oei, 2008, p. 1154).

Yet, some authors regard gambling as an acceptable behavior for the Chinese (e.g., Fong & Wong, 2009). But if gambling is accepted by Chinese society, why would the Chinese see their gambling as an admission of personal failure? And why would they think they must avoid admitting that they gamble in order to save face? Moreover, if gambling is acceptable to Chinese society, why do Chinese gamblers experience so much personal and interpersonal stress that many Chinese gamblers are driven to commit suicide (Wong et al., 2010)?

Clearly, based on the historical condemnation of gambling and on the fact that Chinese people see their gambling as a personal failure, it can only be concluded that gambling is indeed regarded as immoral by traditional Chinese culture. In other words, there is a contradiction between the traditional Chinese view of gambling and the act of gambling, which means that Chinese people who live according to traditional Chinese beliefs would be less likely to gamble. Taormina (2009) empirically tested this idea and, as expected, found a strong *negative* correlation (at $p < .001$) between gambling and living by traditional values.

Traditional values pose no problem for people who do *not* gamble; but the fact that the condemnation of gambling is part of traditional Chinese culture should create a feeling of cognitive dissonance among Chinese people who *do* gamble. Cognitive dissonance is an uncomfortable mental state that occurs when two inconsistent (or contradictory) perceptions exist together for any given person (Festinger, 1957). Thus, cognitive theory would predict that Chinese people who gamble and who are also mindful of traditional anti-gambling beliefs would experience cognitive dissonance. This study was designed to test this proposition.

Research Design

The main variable of Cognitive Dissonance was examined as a function of its two component variables, namely, Gambling Behavior and the Negative Beliefs about Gambling that are part of traditional Chinese culture. These three variables represent the dependent variables in this

study because they are the underlying focus of this research. And they are also examined in relation to three antecedent and two outcome variables.

Gambling Behavior. For clarity, gambling is defined as “the betting or wagering of valuables on events of uncertain outcome” (Devereux, 1979, as cited in Scull & Woolcock, 2005, p. 30). The literature on the detrimental effects of gambling is quite extensive. Examples include problems that occur not only for the persons who gamble, e.g., when they become criminal offenders (Rosenthal & Lorenz, 1992), but also for their families (Kalischuk, Nowatzki, Cardwell, Klein, & Solowoniuk, 2006; Kwan, 2004), spouses (Lorenz & Yaffee, 1986), and their children (Darbyshire, Oster, & Carrig, 2001). Additionally, there are numerous social costs (Thompson, Gazel, & Rickman, 1996), as well as economic costs to the society regarding excess gambling (Walker, & Barnett, 1999). As evidence, Bergh and Kühlnhorn (1994) studied more than 100 pathological gamblers and found that over 50% had serious financial problems, difficulties in relationships with family and friends, and a variety of psychological problems. Although many more examples may be cited, this brief summary of problems associated with gambling provides the rationale for examining how gambler’s think. Thus, this article focuses on the critical cognitive elements of the gambling problem.

Negative Beliefs about Gambling in Chinese Society. Chinese society has long considered gambling to be improper and/or immoral. In fact, there is historical evidence that verifies this contention. For example, Cheng (2009) reported that views against gambling date back to Confucius (551-479 BC), who lived 2,500 years ago, and whose moral precepts are still central to Chinese society today. There is also evidence that Buddhism (dating to 500 BC) opposes gambling (Shonin, Gordon, & Griffiths, 2013). Cheng (2009) also identified a stone carving from the Qing Dynasty (1644-1911 AD), which specifically warned people that gambling will lead to the forfeiture of moral decency, illegal behavior, and the dissolution of families and homes, with detrimental effects on families, friends, the community, and, on the society (see Taormina, 2009). Whereas the Chinese people have a long history of negative beliefs about gambling, these beliefs were another component of the present research.

Cognitive Dissonance. This variable has never been used before in gambling research. Festinger (1957) described cognitive dissonance by saying “if a person holds two cognitions that are psychologically inconsistent, he or she would experience dissonance” (quoted in Aronson, 1992, p. 304). “Cognition” is a thought, idea, or perception; and the inconsistency refers to a situation where two perceptions do not fit together in a logical way. Of course, dissonance can occur with any two cognitions that are contradictory, thus, how dissonance works can be demonstrated with a salient example of two dissonant cognitions from everyday life: (1) a man’s girlfriend tells him that she loves only him and wants to marry him, but (2) he learns that she is still dating other men and continues to look for more boyfriends by using her iPhone to search the internet for men on her social networking sites. According to dissonance theory, such inconsistent cognitions create feelings of discomfort in the perceiver because such incongruities can be very disconcerting to a person.

At this point, a note should be made about cultural differences in cognitive dissonance. Some critics think that Chinese people do not experience dissonance. But that is a naïve misconception because they refer to a study (Peng & Nisbett, 1999) that compared American with Chinese college students in America on how much they liked proverbs with apparent contradictions, which the critics suggest create dissonance. But that study did not prove that dissonance does not exist for Chinese people because there was no actual measure of cognitive dissonance, i.e., the study only showed that Chinese students liked the proverbs more than did

the American students. Another reason is that college students are not an appropriate sample for a study on cognitive dissonance among gamblers because they do not represent gamblers or even the general population (Bond, 1988). Yet another reason is that the study only asked the students to read proverbs to which they had no emotional attachment, and which they could easily disregard and forget when they finished the paper-and-pencil test.

In contrast, Chinese people who gamble experience personal negative consequences of their behavior. That is, their gambling leads to loss of money and often to excessive debt that results in family problems, e.g., inability to pay rent that they must live with on a daily basis (Yip, Yang, Ip, Law, & Watson, 2007). They also have constant reminders of their culture's censure against gambling because they see evidence of it every day, particularly in the reminders of the underlying Confucian culture because Confucius condemned gambling (Lau, 1983), and when they see the ever-present statues of Buddha, who pronounced the "six evil consequences of indulging in gambling" (Access to Insight, 1985), and when family members confront them on their gambling because it disrupts the family's harmony, happiness, and living conditions (Leung, Wong, Lau, & Yeung, 2010).

Returning to the cognitive dissonance that exists for Chinese people who gamble, the two perceptions are: (a) the person engages in gambling behavior; and (b) the person is aware of traditional Chinese morality, which is deeply ingrained in Chinese society and which views gambling as immoral. Evidence of the traditional beliefs can be found in various places. For example, Cheng (2009) reported that there are anti-gambling stone monoliths in China that are over a thousand years old, and that the Qin Dynasty (221-206 BC) outlawed gambling, with severe punishments against gambling that included torture and even death. Furthermore, in Mainland China, where gambling is still illegal, Papineau (2005) reported that there have been campaigns that denounce and attempt to eradicate gambling. Yet, there are Chinese people who gamble. Consequently, even though the idea of cognitive dissonance has not been previously researched in the gambling literature, it is inevitable that cognitive dissonance, according to the theory, would have to exist among Chinese gamblers.

H (1a) *The more people gamble, the more cognitive dissonance they will experience.*

H (1b) *The more negative beliefs about gambling that Chinese people have, the more cognitive dissonance they will experience.*

Antecedent Variables

Although this study was not longitudinal, a conceptual approach was used that employed Gambling Behavior, Negative Beliefs about Gambling, and Cognitive Dissonance as dependent variables, and used three variables as antecedents (theoretical precursors). They also were used to test the validity of the new gambling measures because two of these are often found in the literature as correlates of gambling, i.e., Neuroticism and Family Emotional Support. The third, Traditional Chinese Values, was also used for this purpose. The rationales for these variables and their hypotheses are given in their descriptive paragraphs, below.

Neuroticism. This variable was included for two reasons. One was to test the convergent validity of the gambling measure, that is, previous literature has found Neuroticism to be positively related to gambling. For example, Dube, Freeston, and Ladouceur (1996) assessed several variables to distinguish between potential and probable pathological gamblers, and reported that "worry" (a critical component of Neuroticism) was positively and significantly associated with pathological gambling. Steel and Blaszczynski (1996) used three personality measures, and found Neuroticism to be one of the predictors of gambling behavior. Therefore,

Neuroticism was used to confirm the validity of the gambling behavior measure used in this study. The other reason for using this variable was to assess its relationship with the new variable of Cognitive Dissonance.

To clarify these ideas, it should be remembered that “worry” is an integral aspect of the Big-5 personality construct of Neuroticism (and only the worry aspect is being assessed in this study). Furthermore, from past research on pathological gambling behavior, it may be surmised that having a neurotic personality could drive a person to gamble. Support for this idea comes from Bagby, Vachon, Bulmash, Toneatto, Quilty, and Costa (2007) whose research led them to suggest that “pathological gambling... results from maladaptive efforts to regulate affect or dampen the effects of high neuroticism” (p. 878), namely, that neuroticism lays the foundation in a person’s personality that leads one to gamble.

Therefore, whereas worry is characteristic of neuroticism, a measure of worry should be positively related to gambling. Concomitantly, as gambling is one of the two cognitions in cognitive dissonance, worry should also be positively correlated with cognitive dissonance.

H (2) *The more neuroticism (i.e., worry) that people have, the more they will (a) gamble, and (b) feel cognitive dissonance.*

Family Emotional Support. Attachment theory forms a basis for understanding how family support could relate to gambling. Ainsworth (1989) argued that supportive emotional attachment leads to more social competence and emotional adjustment. Likewise, Bowlby (1982) proposed that children who are raised by caring, supportive parents will develop higher levels of self-esteem and be more outgoing and competent in their social lives, which would help them develop a well-integrated (non-neurotic) personality.

Conversely, a lack of family support could lead to risky behavior, including gambling, and there is research support for this idea. Slutske, Caspi, Moffitt, and Poulton (2005) claimed that gamblers tend to have negative emotionality, which may develop as a result of low family support and attachment; and Pietrzak and Petry (2005) found that gambling was associated with poor social adjustment. Also, Hardoon, Gupta, and Derevensky (2004) found gambling to be related to poor family support. Furthermore, Taormina (2009) tested these ideas and found a significant negative relationship between family emotional support and gambling behavior. The same relationship is expected here.

While it may be argued that gambling behavior could result in lower family support, the idea suggested here is in line with attachment theory, which is developmental. That is, a lack of family emotional support in one’s early life could result in adult behaviors later in life, such as gambling, that are not socially approved. In other words, attachment theory provides the logical rationale for gambling to occur in the first place. On the other hand, however, although gambling may cause family members to shun the gambler, that idea alone does not provide a reason for the gambling to begin.

With regard to family support and cognitive dissonance, if a supportive family reduces the probability that one will gamble, then the lower level of gambling would preclude the likelihood and/or the extent of experiencing cognitive dissonance.

H (3) *The more family emotional support that people have, (a) the less they will gamble, and (b) the less they will experience cognitive dissonance.*

Chinese Values. A study conducted in China (Chinese Culture Connection, 1987) identified four factors of traditional Chinese values, one being “Confucian dynamism,” and the other three also related to Confucian philosophy, i.e., moral discipline, human heartedness, and the integration of social mores. Many of the elements of these factors can be understood to be oriented toward social harmony, such as non-competitiveness, reciprocation, saving face, patience, and kindness toward others. These factors foster peaceful coexistence, but gambling puts people in a contentious situation; so it is not surprising that Confucius has been quoted as saying that gambling is immoral (Lau, 1983). Furthermore, in a modern study of attitudes toward gambling, Kwan (2004) found that Chinese people have a moral antagonism toward gambling, with 57% of the respondents agreeing with the statement “I am morally against gambling.” Thus, both tradition and research suggest that Chinese values are negatively related to gambling.

H(4) *The more that people live according to traditional Chinese values, (a) the less they will gamble, and (b) the less they will experience cognitive dissonance.*

Outcome Variables

The final two variables in this study, namely, Life Satisfaction and Self-Actualization, are related to feelings of personal achievement and are used as theoretical outcome variables.

Life Satisfaction. Diener’s (1984) theory of life satisfaction states that happiness with one’s standard of living, job, and family, leads to feelings of life satisfaction. Thus, gamblers should have low life satisfaction because gambling leads to financial loss, which decreases one’s standard of living, jeopardize one’s job, and disrupts family relationships (Wong & So, 2003). Also, Grant and Kim (2005) found pathological gamblers had lower life satisfaction.

H (5): *The more people gamble, the less life satisfaction they will have.*

Regarding cognitive dissonance and life satisfaction, Festinger’s (1957) theory states that whenever two inconsistent perceptions co-occur, psychological distress results. Shaffer and Hendrick (1974) tested this idea using opposite constructs (dogmatism and tolerance of ambiguity) to create cognitive inconsistency and found that participants experienced mental discomfort in the cognitive dissonance condition. As traditional values are lifetime beliefs, and if gambling is done over some time period, the dissonance that is engendered could result in long-term psychological discomfort, and, thus, life dissatisfaction.

H (6): *The more cognitive dissonance gamblers have, the less life satisfaction they will have.*

Self-Actualization. In his theory of motivational needs, Maslow (1943) explained that the highest level of satisfaction a person can achieve in life is Self-Actualization, which is characterized as the ability to fully use one’s personal potential and to experience life fully. To reach this level, according to the theory, a person must first satisfy the other four needs, i.e., physiological, safety, belongingness, and esteem (in that order). For gamblers, however, there is a factor that makes it difficult to satisfy even the lower level needs. That is, the odds are always against the gambler, meaning that they will have financial losses (Walker, 1992), which often place gamblers in debt. As noted by Taormina (2009), the historic censure against gambling was based on the fact that debt disrupts people’s lives because, without money, they cannot satisfy their basic needs, and they will have family arguments, lose friends, and lose esteem from others. Thus, if they cannot satisfy the lower level needs, which is necessary to satisfy the highest level need, gamblers will have difficulty self-actualizing. The logic is the

same for Cognitive Dissonance, which makes it difficult to fully realize one's potential.

H (7): *The more people gamble, the less self-actualization they will have.*

H (8): *The more cognitive dissonance people have, the less self-actualization they will have.*

Method

Respondents

The respondents were 200 adult Macau residents (91 female, 107 male) aged 18 to 67 years ($M = 32.74$, $SD = 10.77$). On marital status, 124 were single, 74 married, and 2 were "other." For education, 32 completed primary school, 100 secondary school, 6 a 2-year college diploma, 56 a bachelor degree, and 6 a master degree or above. For monthly income (in MOP, the local currency), 53 earned below 5,000; 46 earned 5,000-9,999; 63 earned 10,000-14,999; 28 earned 15,000-19,999; 7 earned 20,000-24,999; and 3 earned 25,000 or more. On gambling behavior, the mean score was 1.69 ($SD = 0.65$) on a 5-point frequency measure.

Measures

Measuring Cognitive Dissonance

To measure cognitive dissonance among Chinese gamblers, two variables were needed to compute these values. One was gambling behavior, and the other was a measure to assess traditional Chinese beliefs that reflect gambling as an improper behavior. The two component variables are explained first, followed by a discussion of the Cognitive Dissonance variable, which includes a description of how it was computed.

Gambling Behavior. Actual gambling behavior was the essential element of this research, and was measured by the Gambling Behavior Scale (Taormina, 2009). The scale has 10 items, and asks how often the person had bet money on different types of gambling. The items (games) were "Social gambling with family," "Social gambling with friends," "Mark six lottery betting," "Football betting," "Basketball betting," "Macau casino table games," "Casino slot machines," "Other slot machine venues" (i.e., slot machines that are not located in the casinos), "Dog racing," and "Horse racing." The question was "In the past 12 months, how often have you bet money on these games?" Answers were on a 5-point scale ranging from 1 (never) to 5 (very often), and the responses were averaged.

Negative Beliefs about Gambling. Several sources of Chinese writings (e.g., Confucius, 2007; Qiu, 1984; So, 2002) were consulted to locate famous long-standing sayings and proverbs that reflect negative beliefs about gambling. A total of five statements were selected for use as items for this scale. These were: "Greediness will result in poverty," "Gambling ten times will result in nine losses," "You will win a candy but lose a factory," "Not gambling is winning," and "Losing is all because of an early win." The Chinese wording for these items portrays gambling as an undesirable behavior. Responses were on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), and the responses were averaged.

Cognitive Dissonance. Measuring cognitive dissonance can be difficult because it is a mental state that cannot be directly assessed. This is because two disparate conditions must occur simultaneously, which means that cognitive dissonance must be measured with two variables; and the variables must be examined in a way that would reveal the disparity. These two variables were: (a) the degree to which the person agreed with traditional cultural views against gambling, and (b) how much that person actually engaged in gambling. If dissonance exists, it would be

among individuals who have high scores on both their gambling behavior as well as on how much they see gambling as an undesirable behavior. As the two 5-point scales require a score of 4 or 5 on both scales to indicate high levels of each, adding them would only produce three values (i.e., 8, 9, or 10) to indicate high levels of dissonance. But having only a 3-point scale would constrain the statistics that could be used with the measure. Therefore, the dissonance scale needed to be expanded to allow more sophisticated analyses.

Thus, cognitive dissonance was operationalized for each person by *multiplying* the person's gambling behavior score times that person's score on the measure indicating agreement with statements reflecting *negative* beliefs about gambling. A low score indicates little difference, while a high score indicates that they gamble a great deal while also having strong negative beliefs about gambling; thus, the higher the value, the greater the dissonance. Whereas the Gambling Behavior scale ranged from 1 to 5 and the Negative Beliefs about Gambling scale ranged from 1 to 5, the Cognitive Dissonance scale ranged from 1, the minimum value (no dissonance), to 25, the maximum value (extremely high dissonance).

Chinese Values. This was measured by Taormina's (2009) 12-item Chinese Values scale. Sample items from this scale were "Having a sense of shame," "Personal steadiness," and "Moderation." Respondents were asked to what extent they live their lives by these values, and responses were on a scale from 1 (never) to 5 (always). The Cronbach alpha reliability for this scale was .87.

Family Emotional Support. This measure was from Procidano and Heller's (1983) Family Emotional Support Scale; only the 10 items relating to receiving (rather than giving) support were used. A sample item was "My family gives me the moral support I need," and respondents were asked how much they agreed or disagreed with the statements. Answers were on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability of this scale was .89.

Neuroticism. This was a 5-item scale using items that focused on the "worry" aspect of neuroticism. Two items were from Costa and McCrae's (1992) NEO Neuroticism Domain, e.g., "I am filled with doubts about things," and three items from Peterson and Seligman's (2004) Neuroticism measure, e.g., "I am not confident that things will work out for the best." Respondents were asked how much they agreed or disagreed that the statements described them, and used the 5-point disagree-agree Likert scale. The scale reliability was .74.

Life Satisfaction. This variable was measured by Sirgy et al.'s (1998) 10-item Life Satisfaction Scale. This scale asks respondents to compare their life achievements with various situations by asking how satisfied they are with their life compared with the statements in the items. Sample items were "The life goals you set for yourself" and "The accomplishments of your friends." The responses were on a 5-point Likert scale ranging from 1 (extremely unsatisfied) to 5 (extremely satisfied). The scale reliability was .88.

Self-Actualization. This was a 10-item scale that used three items from Jones and Crandall's (1986) Self-Actualization scale and seven newly developed items. The new items were added to better represent the self-actualization concept. Sample items were "I am very happy being the person I am now" and "I am being the person I always wanted to be." Respondents were asked how much they agreed or disagreed that these statements described them, using the 5-point disagree-agree Likert scale. The scale reliability was .77.

Procedure and Ethics

Data were gathered in Macau from 100 gamblers and 100 people from the general population. For the general population, people passing along the street in densely populated areas were randomly selected. During this time, it was noticed that very few respondents indicated they engaged in much gambling, which led the researchers to add to the sites for gathering data a number of sports betting shops. Thus, for gamblers, data were gathered from bettors as they exited (legal) sports betting shops. (The researchers did not enter any of the shops, but stood outside on the public sidewalk waiting for the patrons of the shops to exit).

All potential respondents were told the nature of the research and asked if they would answer the questionnaire. No incentives of any type were offered; therefore, completion of the questionnaire was entirely voluntary, without the offer of any inducements. Those who agreed to participate were handed a questionnaire, which was collected on site when finished. Also, the ethical guidelines of the American Psychological Association were carefully followed, with respondents free to decline, advised that their identities were not being asked or used, and that their data would be kept strictly confidential.

Results

Demographic Differences

Although no hypotheses were set for the demographics, they were tested (by t-tests and ANOVAs) for differences on Gambling Behavior, Negative Beliefs about Gambling, and Cognitive Dissonance. The only significant demographic differences were for gender. Females gambled less than males ($p < .001$), had more negative beliefs about gambling than males ($p < .05$), and had less cognitive dissonance than males ($p < .001$). For the other demographics, namely, for age, marital status, education level, and monthly income, no significant differences were found on any of the three main variables.

Correlations

Correlations were run to test all the hypotheses. For Cognitive Dissonance, both Gambling Behavior and Negative Gambling Beliefs were positively and significantly correlated with Cognitive Dissonance (both $ps < .001$), which supported **H(1a)** and **H(1b)**, respectively. Neuroticism was positively correlated with Gambling ($p < .01$) and with Cognitive Dissonance ($p < .05$), supporting **H(2a)** and **H(2b)**, respectively.

Family Emotional Support was negatively correlated with Gambling ($p < .001$) and Cognitive Dissonance ($p < .005$), supporting **H(3a)** and **H(3b)**, respectively. Chinese Values was negatively correlated with Gambling ($p < .001$), supporting **H(4a)**, and with Cognitive Dissonance, yielding weak support for **H(4b)** (for further analysis, see Means Comparisons).

For the outcome variables, Gambling was negatively correlated with Life Satisfaction ($p < .005$), supporting **H(5)**. And Cognitive Dissonance was negatively correlated with Life Satisfaction ($p < .05$), supporting **H(6)**. Likewise, Gambling was negatively correlated with Self-Actualization ($p < .005$), supporting **H(7)**. And Cognitive Dissonance was negatively correlated with Life Satisfaction ($p < .05$), supporting **H(8)**.

Table 1

Means, standard deviations, and correlations between Cognitive Dissonance, Gambling Behavior, Negative Gambling Beliefs, and the theoretical test variables (N=200).

Variables	Mean	SD	Cognitive Dissonance	Gambling Behavior	Negative Gambling Beliefs
Cognitive Dissonance	6.62	2.73	---		
Gambling Behavior	1.69	0.65	.82****	---	
Negative Gambling Beliefs	3.99	0.76	.32****	-.25****	---
Chinese Values	3.66	0.49	-.09†	-.24****	.33****
Family Emotional Support	3.35	0.58	-.19***	-.26****	.14*
Neuroticism-Worry	3.07	0.63	.15*	.17**	-.05
Self-Actualization	3.26	0.49	-.12*	-.14*	.07
Life Satisfaction	3.32	0.56	-.16*	-.20***	.06

†p<.10; *p<.05; **p<.01; ***p<.005; ****p<.001.

As a further assessment of Cognitive Dissonance, scores for Negative Beliefs about Gambling were computed as a function of Gambling Behavior and graphically plotted to find respondents who were high on both variables, which would indicate high levels of Cognitive Dissonance. Based on the distributions of the scores on the two scales, high values were set at ≥ 1.70 on Gambling; and set at ≥ 4.00 for Negative Beliefs, as shown in Figure 1. The high dissonance group (N = 45) is shown in the upper-right quadrant of the figure.

To assess the overall relationship between Gambling and Cognitive Dissonance, a line chart was graphed to depict the relationship between these two variables. First, the line was drawn for all of the respondents (N = 200), which is shown in Figure 2(a).

For comparison purposes, another line was graphed for only the group of people who scored high on both gambling and negative beliefs (N = 45); this line is shown in Figure 2(b). Both charts show strongly increasing functions, with the correlation for all respondents (N = 200) being $r = .83$, and the correlation for the people who did more gambling (N = 45) being $r = .96$, which displayed less variation.

Figure 1. Scatterplot of all respondents (N=200) on Gambling and Negative Beliefs about Gambling. Cutoffs show high gambling (score ≥ 1.70) and high negative gambling beliefs (score ≥ 4.00). Respondents who scored high on both variables are shown in the upper-right quadrant.

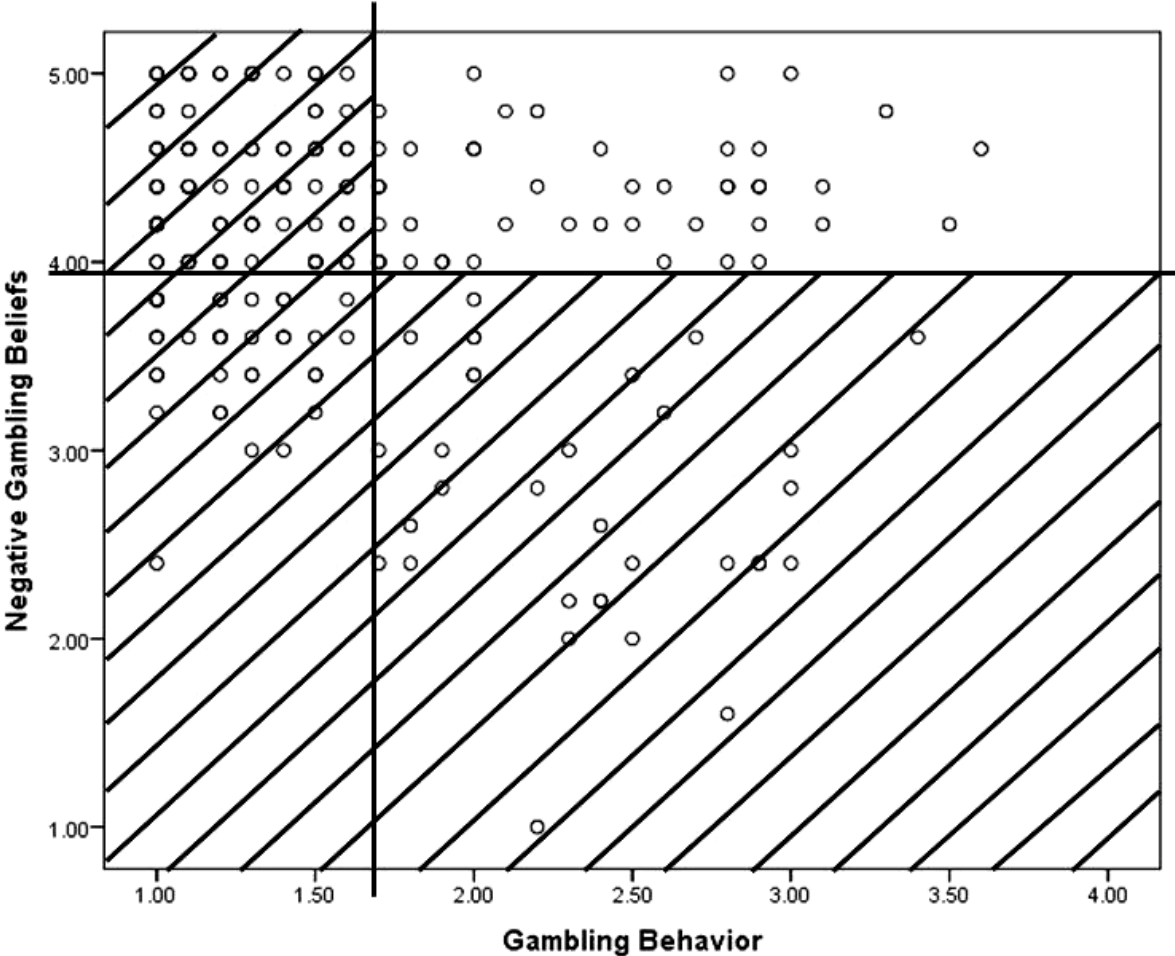
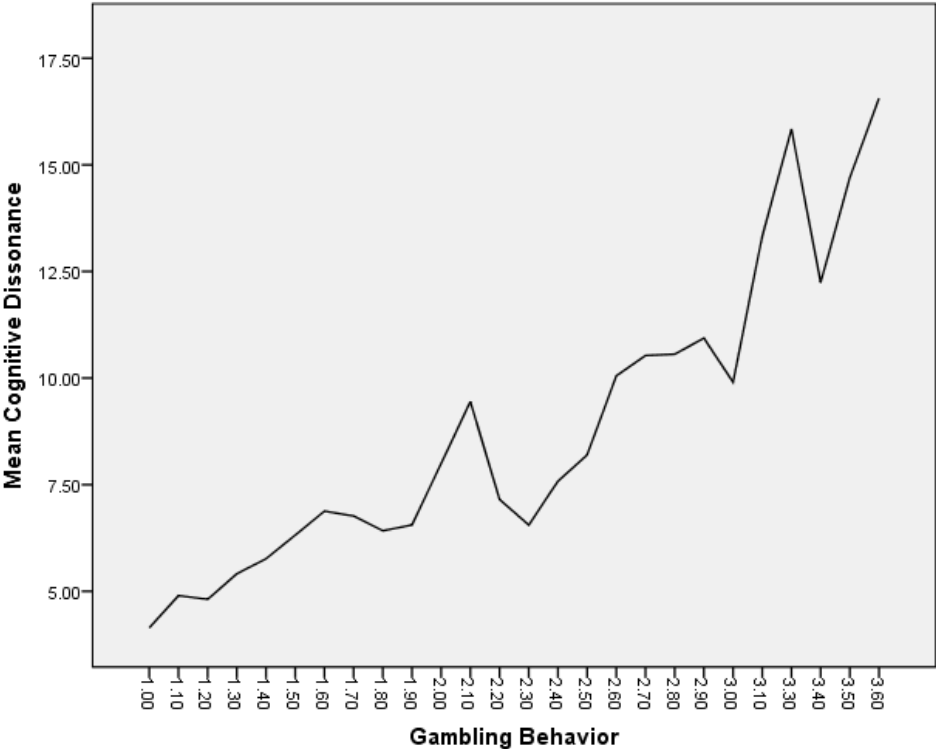
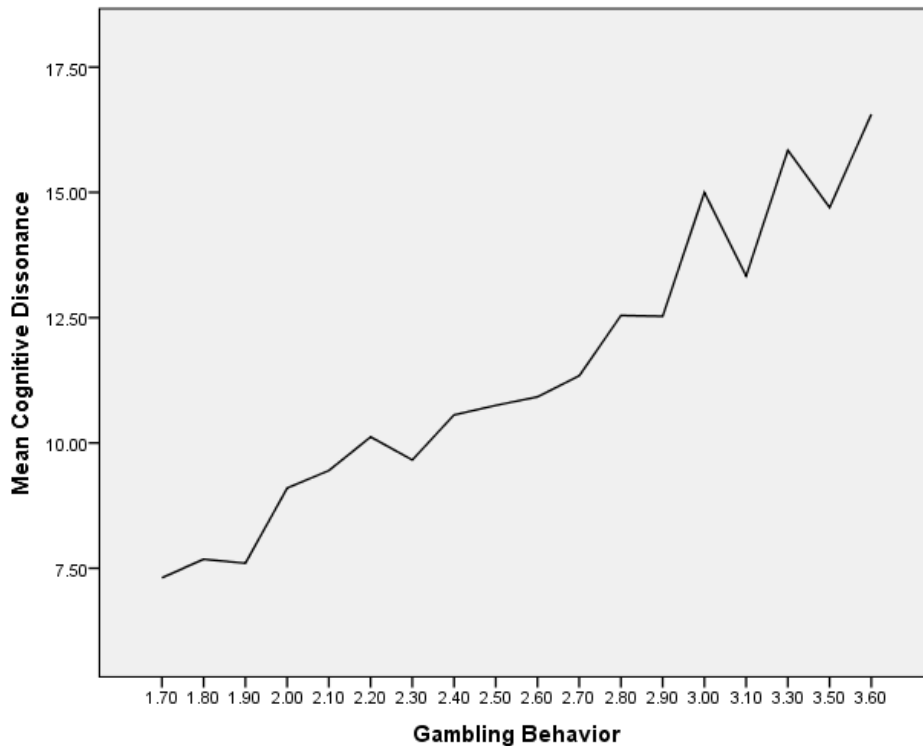


Figure 2.

(a) Cognitive Dissonance as a function of Gambling Behavior for all respondents (N=200).



(b) Cognitive Dissonance as a function of Gambling Behavior, only for the respondents high on both gambling and negative gambling beliefs; see upper-right quadrant in Figure 1 (N=45).



Means Comparisons

To determine whether there were any differences in the measured variables between the high dissonance (N=45) and low dissonance (N=155) groups, t-tests were computed for all the variables used in the study. As might be expected from the previous correlations, the High Dissonance group had significantly higher scores than the Low Dissonance group on Gambling Behavior and Negative Beliefs about Gambling; and the mean difference for Cognitive Dissonance also became highly significant (all three p values < .001).

The High Dissonance group scored significantly lower on Chinese Values and Family Emotional Support than the Low Dissonance group, which also confirmed the hypotheses for these two variables. For the Neuroticism-Worry measure, the High Dissonance group scored higher on this variable, which was in the predicted direction according to the hypothesis, but it did not reach significance.

With regard to the two outcome variables, which were used to assess success in one's personal life, the High Dissonance group scores were significantly lower than the Low Dissonance group on both Life Satisfaction and Self-Actualization, which also confirmed the hypotheses on those two variables. These results are shown in Table 2.

Table 2

Means comparisons (t-tests) between High Dissonance (N=45) and Low Dissonance (N=155) groups on all variables.

Variable	Low Dissonance Mean (<i>SD</i>)	High Dissonance Mean (<i>SD</i>)	t-value	df	Signif. p-value
Gambling Behavior	1.48 (0.53)	2.39 (0.55)	-9.97	198	.000
Negative Gambling Beliefs	3.88 (0.82)	4.37 (0.30)	-6.23	187.99	.000
Cognitive Dissonance	5.49 (1.41)	10.48 (2.64)	-12.17	51.45	.000
Chinese Values	3.71 (0.49)	3.53 (0.48)	2.07	198	.020
Family Emotional Support	3.39 (0.61)	3.20 (0.46)	1.92	198	.028
Neuroticism-Worry	3.04 (0.66)	3.15 (0.49)	-1.15	95.35	.126
Self-Actualization	3.29 (0.48)	3.14 (0.53)	1.73	198	.042
Life Satisfaction	3.36 (0.56)	3.18 (0.55)	1.96	198	.027

Notes:

Degrees of freedom (df) that are fractions indicate unequal variances between the groups. Significance levels are 1-tailed according to the logic of the hypotheses.

Discussion

The results offered strong evidence that cognitive dissonance exists among Chinese gamblers. This idea had been absent from the literature, although it had been anticipated (Taormina, 2009), and this was the critical question in this study. That is, Chinese gamblers had cognitive dissonance because (a) they gambled, while, at the same time, (b) they also held negative beliefs about gambling. Specifically, the t-tests for the High Dissonance and Low Dissonance groups on these two variables showed that the High Dissonance group had significantly higher scores than the Low Dissonance group on both Gambling Behavior and on Negative Beliefs about Gambling, and even more profound is the significantly higher level of Cognitive Dissonance for the group that gambled. All these results confirmed Festinger's (1957) theory, and support the idea that Chinese gamblers experience cognitive dissonance.

The results are also strengthened by Cheng's (2009) findings that, according to Confucian thought, which is the traditional view in Chinese culture, gambling is deemed to be an immoral behavior. These results also reflect the views of Mencius (372-289 BC), another Chinese philosopher, who considered gambling to be one of the "five unfilial acts," i.e., behaviors that are *not* acceptable in Chinese society. Furthermore, as shown by the results of the t-tests that compared the mean scores between the high and low dissonance groups, the Low Dissonance group lived according to Chinese Values to a significantly greater extent than did the High Dissonance group.

The results for Family Emotional Support strengthened this idea about traditional values in Chinese culture because it was strongly and negatively correlated with both gambling behavior and cognitive dissonance. Also, the t-test on the mean scores for Family Emotional Support found that the Low Dissonance group had significantly more support than the High Dissonance

group. These findings may have implications for counselors because families may play a dual role with regard to gambling. That is, according to Attachment Theory, early in a person's life, families who express love and emotional support would have children who grow up to be more socially competent and better adjusted.

If well-adjusted is taken to mean they are not prone to addiction, this would suggest that those children would be less likely to engage in excessive gambling. The other role of the family would relate to how family members respond when one of their members is gambling excessively. For example, while it is typical for family members to express dislike for the gambling behavior, the counselor could advise the family that such expressions should be made calmly to avoid provoking arguments. At the same time, family members could be advised to offer alternate social activities that are more enjoyable, and therefore be rewarding non-gambling behaviors.

Evidently, the picture of gambling in the mind of Chinese gamblers seems to be quite ambiguous. On one hand, they desire to gamble for the obvious reason of hoping to gain a big win at one of the games (e.g., roulette, where the payout to the gambler could be as much as 35:1, that is, the gambler could gain \$35 dollars for every \$1 bet). On the other hand, however, the "odds" of winning always favor the casino and are always against the gambler (e.g., in roulette, the odds are 35:1 *against* the gambler), and gamblers know this. For most people, this fact is the logical basis for not gambling. But there are emotional problems that ensue from excessive gambling, namely, that the loss of money is detrimental not only to the gamblers but also to their families because the losses result in debt (Yip et al., 2007) and an accompanying weakening of the integrity of their families (Leung et al., 2010). Undoubtedly, these would be some very convincing reasons that gambling was regarded so negatively by traditional society, that is, because the family is the most fundamental and important unit in Chinese society (Hwang, 1990) and gambling has the potential to undermine the very fabric of society (see Cheng, 2009).

Thus, according to Festinger's (1957) theory, the gambler should feel mentally uneasy from the two competing perceptions, i.e., the act of gambling in hope of quickly winning a large amount of money versus the knowledge that gambling is considered to be immoral by one's family (reflected in this study by the lack of Family Emotional Support) and by society (assessed by the Chinese Values measure). This disparity between gambling behavior and the negative attitudes about gambling signify cognitive dissonance for those who gamble more.

Neuroticism was another variable assessed for its relationship with both gambling and cognitive dissonance, and was used to test the validity of the new measures. First, Neuroticism had a significant positive relationship with Gambling Behavior, which coincides with findings by Blanco et al. (2001), who suggested that people high on neuroticism might have less self-control, and thus gamble more. Neuroticism also had a significant positive correlation with Cognitive Dissonance, which implies that people who are more neurotic have more difficulty dealing with the dissonant cognitions. Thus, the Neuroticism measure also supported the validity (i.e., the construct validity) of the new measures. The t-test for the two dissonance groups on Neuroticism was in the expected direction, but did not reach significance. On the other hand, it should be remembered that none of the participants in this study reported very high levels of gambling behavior, which is consistent with the results of previous studies of Macau residents (e.g., Taormina, 2009). Thus, it could be expected that the mean difference on Neuroticism would be significantly greater if people with higher levels of Gambling Behavior were included. Future research on cognitive dissonance among gamblers should try to include

a larger number of people with high levels of gambling in order to perform a more powerful test of this idea.

Additionally, the two outcome variables of Self-Actualization and Life Satisfaction were used to assess whether gambling and cognitive dissonance might influence these feelings. Gambling had a highly significant negative relationship with Life Satisfaction, suggesting that gambling may interfere with one's ability to achieve certain accomplishments in life (recall that the Life Satisfaction measure used items that reflected satisfaction with one's personal accomplishments in life, Sirgy et al., 1998). Gambling also had a significant negative relationship with Self-Actualization, which indicates that gambling could limit one's ability to live a full life. For example, as gambling leads to debt, which limits what one can have in life, one cannot live life to the fullest. The less powerful effect for Self-Actualization as compared to Life Satisfaction might be because self-actualization can be attained in a variety of ways, i.e., not only from being rich (see Maslow, 1943).

Regarding Cognitive Dissonance, similar results were obtained. That is, it had a significant negative relationship with Life Satisfaction, and the t-test revealed that the Low Dissonance group had a significantly higher level of Life Satisfaction than the High Dissonance group. These results suggest that the incongruent cognitions about one's gambling and social values may be distracting enough to reduce one's ability to achieve high levels of accomplishment in life. Likewise, Cognitive Dissonance also had a significant negative relationship with Self-Actualization, and the t-test on this showed that the Low Dissonance group had a significantly higher level of Self-Actualization than the High Dissonance group, which indicates that the dissonant perceptions may be sufficiently disturbing to the gamblers that such cognitions reduce the feeling that they are living a full life.

Conclusions

In conclusion, the finding that Chinese gamblers hold negative attitudes about gambling even though they do gamble adds a new perspective on studying, understanding, and treating Chinese gamblers. That is, by examining the cognitive dissonance of gamblers, new insights may be gained in research about the Chinese gambling phenomenon. Likewise, by considering cognitive dissonance among Chinese gamblers, a greater understanding of the dilemma they experience when gambling may be obtained.

A practical implication of this research offers a possible strategy for helping Chinese pathological gamblers. That is, by advising them that *their negative beliefs about gambling reflect the positive moral values of their traditional society*, and inspiring them to do more to live according to those values, which includes spending more time with their families, and less time gambling. Such an approach has also been suggested by Loo et al. (2008), i.e., "the development of interventions that build character strengths... may be beneficial when used together with interventions targeting problem behaviors" (p. 1164).

In other words, strengthening the patient's positive moral values might encourage them to reduce their gambling, which, in turn, would reduce their loss of money and, concomitantly, also reduce their cognitive dissonance (i.e., their feelings of discomfort). Thus, this approach may help gamblers to reduce (and possibly even stop) the excessive gambling. Furthermore, practitioners who take cognitive dissonance into account may be able to help decrease the negative effects that excessive gambling has on the gamblers' families and the gamblers

themselves, and, ideally, by implication, might even have the potential to diminish the occurrence of suicide among Chinese gamblers.

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