

LUO LU and CHIA-HSIN HU

PERSONALITY, LEISURE EXPERIENCES AND HAPPINESS

ABSTRACT. This study explored the relationships among personality, leisure involvement, leisure satisfaction and happiness in a representative sample of Chinese university students ($n = 423$). We found that (1) extraversion significantly correlated with almost all kinds of leisure involvement, but neuroticism did not correlate with leisure activities at all; (2) extraversion significantly positively correlated with leisure satisfaction while neuroticism significantly negatively correlated with leisure satisfaction; and (3) while extraversion and neuroticism were significant predictors of happiness, leisure satisfaction had its incremental effects after those of personality traits and other domain satisfaction were controlled. Implications of these findings for developing a Chinese psychology of leisure were discussed.

KEY WORDS: extraversion, neuroticism, leisure involvement, leisure satisfaction, SWB.

INTRODUCTION

Leisure is a very important topic, for many reasons. For instance, many people find their leisure more satisfying than their work; leisure can be a major source of pleasure and sense of achievement; we are having more leisure time than ever in the human history; however, many people who have a lot of spare time fail to find satisfying forms of leisure. Leisure has not really been accepted as a recognized field of psychological research, though there has been work on certain types of leisure, such as sports, musical activities, religious activities and watching TV.

Research on leisure with Chinese people is even more in the rarity. Perhaps until very recently, leisure has never been accorded a significant status in the life of Chinese people whether in a traditional subsistence economy or during the past decades of economic take-off. However, things are changing. With relative material abundance and shrinking working hours in the

post-industrial societies, the vast population of the Chinese people in Taiwan, Hong Kong, and coastal areas of the mainland China are taking increasing interest in pursuing higher quality and wider variety of leisure activities. Thus understanding the subjective experiences of leisure of contemporary Chinese people will not only help to answer some interesting issues for psychology but also contribute ultimately to better leisure policies and management. Also, it is not a foregone conclusion that Western theories and research will be applicable to the Chinese people living in a very different cultural tradition, thus Western findings need to be tested in the Chinese contexts to ensure their generalizability.

To start in this bare field of the Chinese psychological study of leisure, we conducted a qualitative investigation exploring the meaning of leisure, personal motivations, facilitators of and barriers to leisure, as well as received effects of leisure among Chinese university students (Lu and Hu, 2002). Using group discussion method, we found that (1) functionality, autonomy, and contrast with work were major components for defining leisure; (2) relaxation, enjoying life, self-growth, filling the time, social interaction, and health promotion were motivations for leisure; (3) biopsychological factors, activity itself, interpersonal factors, time, economy, and facilities were both facilitators of and barriers to leisure; (4) relaxation, self-growth, enjoying life, social interaction, health promotion, filling the time, and costs were the actual consequences of leisure. Some of our findings were consonant with the views and results in the extant Western literature, while others extended or challenged the established accounts about leisure, for instance, Chinese students were rather mindful of leisure's various potential costs regardless of their academic performance, social embeddedness or financial status. Whether these distinct findings are due to sample characteristics (e.g., students), social characteristics (e.g., under-developed culture of leisure), or culture characteristics (e.g., Chinese views of leisure) need detailed examination in the future. As a sequel, the present paper focused on the role of personality as an individual difference factor in leisure experiences, empirically testing some relevant finding in the Western literature, with the hope that it will add to understanding of the generalizability of these

findings. At the moment, we are not convinced that there will be theoretical reasons to expect different associations between personality traits and leisure experiences across cultures.

Personality and Leisure Involvement

Given the wide variety of possible and available leisure activities, personal choice determines which ones are selected. Such choices might be influenced by individual personality differences, such as extraversion and neuroticism. Unfortunately, one of the experts in the field recently stated that “the literature on the relation between personality and leisure is disappointing despite both its theoretical and practical implications” (Furnham, 2004, p. 167). We conducted a search on the psycINFO database using “personality and leisure” as key word and found a total of 35 entries since 2003. However, after excluding book reviews and review chapters, only a few are empirical studies devoted to the issue. Among these more are focused on abnormal temperaments (e.g., Krumm-Merabet and Meyer, 2005) or on the moderating role of personality on the leisure/mood relationship (Giacobbi et al., 2005). Our search of the latest literature obviously corroborates Furnham’s observation.

However, despite the paucity of literature, there have been studies looking at the association between particular leisure activities and specific personality traits in the West. Kirkcaldy and Furnham (1991) classified 50 leisure activities into groups such as combative, creative and competitive leisure. Combative leisure was found to be associated with psychoticism, and competitive pursuits were associated with extraversion. Team sports as a form of competitive leisure was particularly strongly associated with extraversion, especially among young people (Eysenck et al., 1982). In the case of the sensation-seeking trait, Furnham’s (2004) 10-year-old review indicated that it was related to a very wide variety of leisure activities, not as commonly assumed limited to dangerous sports. Hills and Argyle (1998) again found that extraversion was a personality correlate for belonging to sports clubs. Competitive pursuits are usually physically taxing and there was an even stronger association between extraversion and high profile sports like ice-hockey, sprint running and bob-sleigh racing (cf. Hills and Argyle,

1998). Neurotic people however, preferred hobbies rather than sports (Lu and Argyle, 1994).

In addition to physical activities, Furnham (1981) found that extraverts chose social activities more than introverts. Argyle and Lu (1990) also found that extraverts spent more time with teams and clubs, and at noisy parties and dances. If people were asked to talk about recent leisure activities, extraverts talked mostly about social events and sports, while introverts talked about solitary events such as reading and watching TV (Argyle and Lu, 1992). For young people seeking social contacts, these may be best provided by team sports.

Apart from sports and social activities, the personality correlates of other leisure activities have not received a great deal of attention. Nias (1977) found that an interest in listening to music was associated with neuroticism. A study by Dyce and O'Connor (1994) found that members of pop musical bands were more extraverted and neurotic relative to the norms of age-similar university students. Wills (1984) also found that professional popular musicians showed greater neuroticism and psychoticism scores, irrespective of their instrumental preference. However, Hills and Argyle (1998) found no personality correlates for belonging to amateur musical groups.

Watching TV is another popular form of leisure. Although the main concern of studies of TV-watching has been to discover whether personality differences mediate any effects of violent programs on young people, several studies have looked at personality correlates of TV-watching. Lu and Argyle (1993) found that among women, extraversion distinguished regular watchers of TV soap operas from irregular watchers, who nonetheless watched a lot of TV in general. In a study of male undergraduate students, Weaver (1991) found that those scoring high on neuroticism tended to avoid comedy and adventure programs. However, Hills and Argyle (1998) found that neuroticism was associated with the overall amount of TV-watch.

One purpose of the present study was to explore the role of extraversion and neuroticism as two major personality factors in leisure choices among Chinese undergraduate students. Incorporating the existing empirical evidence, extraversion seemed to be associated with a variety of leisure pursuits, such as sports,

social activities, and watching TV soap operas with “imaginary friends”. A possible explanation is that extraverts are low in cortical arousal and, in compensation, seek activities providing the maximum opportunity for excitement whether physical or social (Eysenck, 1967). Along another line, as perceived ability is a strong antecedent of taking up a leisure activity (Argyle and Lu, 1992; Lu and Hu, 2002), neurotic people may shy away from leisure pursuits that involve social activities due to lack of the necessary social skills.

Hypothesis 1: extraversion would be associated with leisure activities which involve physical or social excitement; neuroticism would be associated with leisure activities which do not require social skills.

A distinctive feature of the present study was the inclusion of a comprehensive list of a wide variety of leisure activities commonly engaged in by Chinese students. Such a list was constructed based on information extracted from our interviews and observations with university students (Lu and Hu, 2002), thus ensuring an accurate representation of the student life in a Chinese society. Furthermore, while most existing studies focused on the specific association between certain personality traits and certain types of leisure (e.g., extraversion and social activities), we attempted to simultaneously examine association between personality traits and multiple types of leisure. Such a study design can enable us to generate an overall personality profile across different and diverse leisure pursuits. It can also help to partial out any overlaps or contaminations between different personality traits or leisure activities.

Consequences of Leisure

If leisure were what people truly and freely choose to do, then it would be very odd if they didn't enjoy it. Furthermore, the above-mentioned individual personality differences may also affect the degree of positive effects generated by leisure.

Leisure satisfaction and happiness are perhaps the most direct indicators of leisure effects. Andrew and Withey's (1976) early US survey showed that most people (43%) were pleased or delighted with their leisure, and only a small minority (8.5%) was dissatisfied. However, different leisure activities may

generate different levels of satisfaction. Lu and Argyle (1994) found that people reported greater leisure satisfaction and happiness when they had a serious, committed, and constructive leisure activity. They experienced their leisure as more stressful, challenging and absorbing, but more under control. In contrast, less serious leisure activities, such as TV-watching, have been found to produce less positive effects. Lu and Argyle (1993) noted that people who watched a lot of TV were bored more often, had lower leisure satisfaction, and less happy. Nonetheless, the same study also found that regular "soap opera" watchers were more satisfied with their leisure and happier, perhaps because this activity has some elements of a serious leisure.

Along another line of research, it has been found that extraversion has a consistent positive correlation with happiness while neuroticism has a consistent negative one, across populations of the West and the East (Costa and McCrae, 1980; Diener et al., 1992; Argyle et al., 1995; Lu and Shih, 1997; Lu et al., 1997; Furnham and Cheng, 1999). Myers and Diener (1995) included extraversion in their "happy trait", while Francis et al. (1998) even dubbed happiness as "stable extraversion". Although extraversion seems intuitively more likely to be associated with happiness and indeed has received more empirical attention, Hills and Argyle (2001) argued that "emotional stability" or lack of neuroticism was more important to happiness than extraversion. Our previous studies with the Chinese people indicated that both extraversion and neuroticism were significant predictors of subjective well-being (Lu and Shih, 1997; Lu et al., 1997). Is it possible then the greater happiness of extraverts may at least partly be explained by their greater involvement and enjoyment in leisure? Similarly, is it also possible that the lower happiness of neurotics may at least partly be explained by their fewer involvements and lower enjoyment of leisure? The speculation that extraverts not only engage in more leisure activities but also derive greater satisfaction from them, which in turn contribute to greater happiness, seems consistent with existing findings pertaining to personality differences in leisure and happiness. Similarly, the speculation that neurotics not only engage in fewer leisure activities but also derive less satisfaction from them, which in turn contribute to lower

happiness, seems also consistent with existing findings pertaining to personality differences in leisure and happiness.

Thus far, existing leisure research has focused almost exclusively on positive effects and found short-term benefits including positive mood, physical fitness and immediate satisfaction, as well as long-term effects of happiness, mental health, physical health, and social integration. On the other hand, existing subjective well-being research has firmly established the association between extraversion, neuroticism and happiness. In the present study, we aimed to integrate these two lines of research by looking at whether personality traits were related differently to levels of leisure satisfaction, and whether perceived leisure satisfaction was related to happiness after taking out the effects of personality traits for the Chinese students.

Hypothesis 2: extraversion would be associated with greater leisure satisfaction; neuroticism would be associated with less leisure satisfaction.

Hypothesis 3: leisure satisfaction would be a significant predictor of happiness after effects of personality traits were controlled for.

Another thrust of the present study was our attempt to rule out alternative explanations of the leisure satisfaction effects. Research on subjective well-being has found a top-down effect of global satisfaction ratings (Crocker and Near, 1998; Diener et al., 2000). While existing leisure studies focused on this single domain, we assessed and controlled for additional domain satisfaction rating to tease out the unique contribution of leisure on overall happiness, as well as partly rule out common method bias. Academic work and finance are two important life domains for university students which are both related to their leisure experiences in terms of time and money availability for instance (Lu and Hu, 2002). Academic and financial satisfaction were thus measured and controlled for in the present study.

METHOD

Participants

To obtain a representative sample of students in Taiwan, the quota sampling technique was adopted. The census data

published by the Ministry of Education (2000, the year this study was conducted), showed that 3:6:7 was the rough ratio of students enrolled for humanities, social sciences, and science/technology in the academic year when the present study was conducted. Accordingly, a total of 453 subjects were recruited from 10 universities across the country, and 423 returned valid questionnaires. The completion rate was 96.04%. The distribution of students' study major roughly corresponded to the above official census data, thus ensuring reasonable heterogeneity and representativeness in terms of disciplines. Our sample was also representative in terms of gender ratio, age distribution and location of university/college (Ministry of Education, 2000).

Measurements

Data came from several questionnaires/scales described below:

(A) Demographic Information

Subjects' personal background information were recorded, such as age, gender, marital status, and university major.

(B) Personality Traits

Extraversion and neuroticism were measured by the E and N scales in the EPQ, respectively (Eysenck and Eysenck, 1975). In this study, the Cronbach alpha coefficients were 0.82 (E) and 0.77 (N).

(C) Leisure Involvement

Based on our qualitative interview study with Chinese students (Lu and Hu, 2002), 35 common leisure activities were listed in the specifically constructed "Leisure involvement scale". Subjects were required to check the activities they had participated in the previous month (the Activity subscale), and also the frequency they took part in a particular activity (the Frequency subscale). In this study, the Cronbach alpha coefficients were 0.81 (activity) and 0.79 (frequency). In line with our interview findings, our "Leisure involvement scale" included five different categories of leisure pursuits: hobbies (such as playing instruments, painting), sports (such as swimming, ball games), social (such as clubs, chatting with friends), indoor (such as TV,

net surfing), and outdoor (such as walking, traveling). Unfortunately, the Cronbach alpha coefficients for these five categories of leisure pursuits were low, ranging from 0.42 (social) to 0.72 (indoor), we then decided to rely mainly on total scores of the Activity and Frequency subscales in further analyses.

(D) Domain Satisfaction

Leisure satisfaction was measured by the Beard and Ragheb's "Leisure satisfaction scale" (Beard and Ragheb, 1980). Six aspects of leisure satisfaction were tapped: psychological, social, physical, educational, relaxation, and aesthetic. A higher total score indicated a higher level of overall leisure satisfaction. In this study, the Cronbach alpha coefficient was 0.92. *Academic and financial satisfaction* were each measured by a single item: "Are you satisfied with your academic work?" and "Are you satisfied with your current financial state?" Participants were required to rate their satisfaction on 7-point scales (1 = very much dissatisfied, 7 = very satisfied).

(E) Happiness

The Chinese Happiness Inventory (CHI, Lu and Lin, 1998) was used to measure perceived level of happiness, composed of positive affect, (lack of) negative affect, and life satisfaction. A higher total score indicated a higher level of overall happiness. In this study, the Cronbach alpha coefficient was 0.94.

RESULTS

There were slightly more males (52.7%) than females (47.3%) in the sample. The average age was 21.94 (SD = 1.86), and all of them were single.

Correlation Analyses

Pearson correlation analysis was conducted among all the measures and results are presented in Table I. As scores of the two subscales of leisure involvement (leisure activities and frequencies) correlated as high as 0.90, indicating almost complete overlap of the two constructs, leisure activities were chosen to

TABLE I
Correlation among research variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	Cronbach's α
1. Sex	1.00													—
2. Extraversion ^a	0.07	1.00												0.82
3. Neuroticism ^b	-0.06	-0.18***	1.00											0.77
4. Leisure activities	0.04	0.23***	-0.02	1.00										0.81
5. Hobbies	0.04	0.07	-0.01	0.61***	1.00									0.51
6. Sports	-0.14***	0.21***	-0.05	0.59***	0.28***	1.00								0.46
7. Social	0.05	0.26***	0.07	0.65***	0.30***	0.30***	1.00							0.42
8. Indoor	0.12*	0.16***	-0.03	0.88***	0.38***	0.31***	0.46***	1.00						0.72
9. Outdoor	0.12*	0.18***	0.02	0.65***	0.24***	0.29***	0.38***	0.52***	1.00					0.45
10. Leisure satisfaction	-0.01	0.32***	-0.24***	0.28***	0.19***	0.29***	0.16***	0.17***	0.22***	1.00				0.92
11. Financial satisfaction	-0.02	0.03	-0.16**	0.01	0.07	0.04	0.07	-0.05	-0.02	0.09*	1.00			—
12. Academic satisfaction	0.07	0.09	-0.15***	0.04	0.12*	0.01	0.01	0.01	0.00	0.23***	0.30***	1.00		—
13. Happiness	0.04	0.40***	-0.38***	0.14***	0.19***	0.11*	-0.01	0.11*	0.05	0.50***	0.20***	0.35***	1.00	0.94

* $p < 0.05$; *** $p < 0.001$.

Sex: M = 1; F = 2.

a, b As there was a significant correlation between extroversion and neuroticism, all correlation coefficients involving extroversion were partial ones controlled for neuroticism, and vice versa.

represent leisure involvement in all the analyses to preserve parsimony. In addition, as there was a significant albeit low negative correlation between extraversion (E) and neuroticism (N), in Table I all correlation coefficients involving E were partial ones controlling for N, and vice versa.

Our Hypothesis 1 predicted that extraversion would be associated with leisure activities which involve physical or social excitement while neuroticism would be associated with leisure activities which do not require social skills. Results showed that E significantly correlated with overall leisure activities, and almost all kinds of leisure pursuits except hobbies. However, N did not correlate with leisure activities at all.

Our Hypothesis 2 predicted that extraversion would be associated with greater leisure satisfaction while neuroticism would be associated with less leisure satisfaction. Results showed that E significantly positively correlated with leisure satisfaction while N significantly negatively correlated with leisure satisfaction.

When we examined effects of gender in Table I, we found that gender was not related to personality or leisure satisfaction. Gender was not related to overall leisure involvement, however, males tended to engage in more sports while females tended to take part in more indoor as well as outdoor activities (excluding sports and physical exercises).

Our Hypothesis 3 predicted that leisure satisfaction would be a significant predictor of happiness after effects of personality traits were controlled. Before testing this hypothesis with multiple regression analysis, we noted that leisure satisfaction significantly positively correlated with happiness, while E and N also correlated with happiness, though in opposite direction. It is also to be noted that both academic and financial satisfaction positively correlated with happiness. Finally, overall leisure involvement had a positive association with both leisure satisfaction and happiness, especially involvement in hobbies, sports, and indoor activities.

Multiple Regression Analyses

An important purpose of the present study was to clarify the contributions of personality traits and leisure involvement to

leisure satisfaction and happiness. To this end, two separate multiple regression analyses were conducted using hierarchical methods. Gender was entered first at Step 1. The two personality traits (E and N) were entered at Step 2. Leisure involvement (leisure activities) was entered at step 3. Academic and financial satisfaction were then entered at Step 4. In predicting happiness, leisure satisfaction was finally entered at Step 5. Results are presented in Table II, and betas were quoted from the final model.

When predicting leisure satisfaction, 23% of the total variance could be accounted for. Extraversion, leisure involvement and academic satisfaction were positively related to leisure satisfaction while neuroticism was negatively related to happiness while neuroticism was negatively related to leisure satisfaction. Gender and financial satisfaction however, were not predictors of leisure satisfaction.

TABLE II
Predicting leisure satisfaction and happiness

Dependent Variable	Step	Entered variables	β	ΔR^2
Leisure satisfaction	1	Sex	-0.06	0.00
	2	Extraversion	0.22*** ^x	
		Neuroticism	-0.21***	0.16***
	3	Leisure activities	0.21***	0.04***
	4	Academic satisfaction	0.17***	
		Financial satisfaction	0.01	0.03***
R^2	0.23			
F	20.51***			
Happiness	1	Sex	0.00	0.00
	2	Extraversion	0.24***	
		Neuroticism	-0.26***	0.29***
	3	Leisure activities	-0.02	0.00
	4	Academic satisfaction	0.20***	
		Financial satisfaction	0.07	0.08***
5	Leisure satisfaction	0.31***	0.07***	
R^2	0.44			
F	46.21***			

* $p < 0.05$; *** $p < 0.001$.

Sex: M = 1; F = 2.

When predicting happiness, 44% of the total variance could be accounted for. Extraversion, academic satisfaction and leisure satisfaction were positively related to happiness while neuroticism was negatively related to happiness. Again, gender, leisure involvement and financial satisfaction were not predictors of happiness. It is to be noted that leisure satisfaction could still predict happiness after both academic and financial satisfaction were controlled in the regression equation.

DISCUSSION

The present study was constructed around two issues: personality and leisure involvement, leisure as a possible reason for individual differences in happiness. Our hypothesis 1 was related to the first issue, and hypotheses 2 and 3 were related to the second. Results with a representative sample of Chinese students supported our hypothesis 1 in the case of extraversion but not neuroticism. Both our hypotheses 2 and 3 were fully supported. Implications of these findings are further discussed below, again organized around these two issues.

Personality and Leisure Involvement: Extraversion as a Facilitator

Previous studies in the West have suggested that extraversion as a personality trait may be associated positively with leisure pursuits, especially those involving physical and social elements (Furnham, 1981; Eysenck et al., 1982; Argyle and Lu, 1990; Hills and Argyle, 1998). We found that for Chinese students extraversion was positively associated not only with overall leisure involvement, but also with various kinds of leisure pursuits across the board. The only exception was hobbies as leisure activities. In our measure of leisure involvement based on a previous indigenous study of Chinese students' leisure life (Lu and Hu, 2002), five categories of most popular leisure pursuits were included. Among them hobbies such as playing instruments and handcrafts, were distinct in their creative and non-social features. Other categories all involved either physical effort (sports, outdoor activities) or social aggregation (social, indoor

activities). Our current results thus corroborate Western findings and further support the biological explanation of extraverted behavior patterns, namely extraverts are low in cortical arousal and, in compensation, seek activities providing the maximum opportunity for excitement whether physical or social (Eysenck, 1967). As biological basis for extraversion is presumed universal, the positive association between extraversion and leisure involvement among the Chinese is not surprising. Nonetheless, our results serve to underline extraversion being an important individual difference factor in future leisure studies for the Chinese people.

Neuroticism on the other hand, was not found to be associated with any indicators of leisure involvement. Although neuroticism is not as well researched as extraversion in the leisure context, some Western studies implied that it was associated with musical types of leisure pursuits (Nias, 1977; Wills, 1984; Dyce and O'Connor, 1994; Hills and Argyle, 1998). We failed to replicate these findings even after regrouping leisure activities involving music into a new category. As our list of leisure pursuits was generated through field work and our sample was representative, we have to conclude that neuroticism is not likely a major individual difference factor in leisure choices for Chinese students. Having said this, it is still possible that neuroticism may play a significant role in some specific types of leisure such as pop musical bands.

Also, we assumed that certain kinds of leisure did not require social skills as a necessity, and reasoned that neurotic people would engage more in these activities. However, neither social skills nor the requirement of social skills in each leisure pursuit were measured explicitly in the present study. This is a serious limitation to our interpretation of the non-results pertaining to neuroticism. Future research should amend this omission.

Personality, Leisure Satisfaction and Happiness

Existing literature seems to suggest that regardless whether people have a serious, committed leisure activity or not, most people were pleased with their leisure, as found by Andrew and Withey (1976) and Lu and Argyle (1993, 1994). The overwhelming perception of positive results of leisure is

understandable, after all leisure is done out of free choice largely, in free time, and usually under high expectations to generate a pleasurable state of mind. In our pioneering study with Chinese students (Lu and Hu, 2002), we also found that leisure indeed was perceived to have short-term benefits including positive mood, physical fitness and better structuring of time, as well as long-term effects of happiness, health, educational benefits, and social integration. However, regardless the choice and extent of leisure involvement, there was consistent personality differences in derived leisure satisfaction. As we found in the present study, extraverts got greater leisure satisfaction while neurotic people enjoyed their leisure less. Furthermore, leisure satisfaction was found to be related to happiness after taking out effects of personality traits and other important domain satisfaction. It was consonant with the view that extraverts not only engage in more leisure activities, but also derive greater satisfaction from them, which in turn contribute to their higher happiness. For neurotic people, however, although they have no obvious preference for leisure, they derive less satisfaction in their leisure life, which in turn contribute to suppressing their level of happiness. Our results thus support the reasoning that leisure involvement and satisfaction are possible partial explanations for the consistent individual differences effects on happiness pertaining to extraversion and neuroticism. Leisure is a relatively new area but a potentially fruitful arena to explore for researchers of personality and subjective well-being.

Limitations

This study probed into the relationships among personality, leisure involvement, leisure satisfaction and happiness. Some of our findings were not consonant with the views and results in the extant literature; some extended or challenged the established accounts about leisure; others pointed to potential integration of leisure study with others fields of enquiry. Testing western findings with a representative Chinese student sample to establish the generalizability of these finding is one novel contribution of the present study. Examining personality associations with a wide variety of leisure pursuits and partialing out

potential overlaps with other domain satisfaction in leisure satisfaction effects are distinct features too of the present study.

However, there are methodological limitations which should be kept in mind in the interpretation of these results. First, our data came from a cross-sectional study, thus no casual conclusions are legitimate, and there is also the concern of possible percept–percept bias. For example, happiness was considered as an outcome of leisure involvement, but it is also plausible that happiness may act as a cause rather than an effect. For instance, those who are happier with their life in general might be more inclined to engage in various leisure pursuits. Second, we focused on global happiness rather than separable positive and negative affect dimensions. As considerable research has shown that extraversion is more strongly associated with positive affect (PA) and neuroticism is more strongly associated with negative affect (NA) (Costa and McCrae, 1980; Lu et al., 1997; Furnahm and Cheng, 1999), ideally both PA and NA should be assessed along with global reports of happiness. Third, although we attempted to control academic and financial satisfaction on happiness in examining leisure effects, these were single-item measures unlike the multi-item reliable leisure satisfaction measure. The possibility remains that a more reliable domain satisfaction measure may account for more variance that is shared between leisure satisfaction and happiness. Last, our series of studies with university students should be regarded as just a start, systematic enquiries with community adults would be more valuable to the development of a Chinese psychology of leisure.

REFERENCES

- Andrew, F.M. and S.B. Withey: 1976, *Social Indicators of Well-Being* (Plenum, New York).
- Argyle, M. and L. Lu: 1990, 'Happiness and social skills', *Personality and Individual Differences* 11, pp. 1255–1261.
- Argyle, M. and L. Lu: 1992, 'New directions in the psychology of leisure', *The New Psychologist* 1, pp. 3–11.
- Argyle, M., M. Martin and L. Lu: 1995, 'Testing for stress and happiness: The role of social and cognitive factors', in C.D. Spielberger and I.G. Sarason

- (eds), *Stress and Emotion* Vol. 15 (Taylor & Francis, Washington DC), pp. 173–187.
- Beard, J.G. and M.G. Ragheb: 1980, 'Measuring leisure satisfaction', *Journal of Leisure Research* 12, pp. 20–33.
- Costa, P.T. and R.R. McCrae: 1980, 'Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people', *Journal of Personality and Social Psychology* 38, pp. 668–678.
- Crooker, K.J. and J.P. Near: 1998, 'Happiness and satisfaction: Measures of affect and cognition?', *Social Indicators Research* 44, pp. 195–224.
- Diener, E., C.K.N. Scollon, S. Oishi, V. Dzokoto and E.M. Suh: 2000, 'Positivity and the construction of life satisfaction judgment: Global happiness is not the sum of its parts', *Journal of Happiness Studies* 1, pp. 159–176.
- Diener, E., E. Sundvik, W. Pavot and F. Fujita: 1992, 'Extraversion and subjective well-being in a US national probability sample', *Journal of Research in Personality* 26, pp. 205–215.
- Dyce, J.A. and B.P. O'Connor: 1994, 'The personalities of popular musicians', *Psychology of Music* 22, pp. 168–173.
- Eysenck, H.J.: 1967, *The Biological Basis of Personality* (C.C. Thomas, Springfield Ill).
- Eysenck, H.J. and S.B.G. Eysenck: 1975, *Manual for the Eysenck Personality Questionnaire* (Hodder & Stoughton, London).
- Eysenck, H.J., D.K.B. Nias and D.N. Cox: 1982, 'Sport and Personality', *Advances in Behaviour Research and Therapy* 4, pp. 1–56.
- Francis, L.J., L.B. Brown, D. Lester and R. Philipchalk: 1998, 'Happiness as stable extraversion: A cross-cultural examination of the reliability and validity of the Oxford Happiness Inventory among students in the UK, USA, Australia and Canada', *Personality and Individual Differences* 24, pp. 167–171.
- Furnham, A.: 1981, 'Personality and activity preference', *British Journal of Social Psychology* 20, pp. 57–68.
- Furnham, A.: 2004, 'Personality and leisure activity: Sensation seeking and spare-time activities', in R.M. Stelmack (ed.), *On the Psychobiology of Personality: Essays in Honor of Marvin Zuckerman* (Elsevier Science, New York), pp. 167–183.
- Furnham, A. and H. Cheng: 1999, 'Personality as predictor of mental health and happiness in the East and West', *Personality and Individual Differences* 27, pp. 395–403.
- Giacobbi, P.R., H.A. Hausenblas and N. Frye: 2005, 'A naturalistic assessment of the relationship between personality', daily life events, leisure-time exercise, and mood, *Psychology of Sport & Exercise* 6, pp. 67–81.
- Hills, P. and M. Argyle: 1998, 'Musical and religious experiences and their relationship to happiness', *Personality and Individual Differences* 25, pp. 91–102.
- Hills, P. and M. Argyle: 2001, 'Emotional stability as a major dimension of happiness', *Personality and Individual Differences* 31, pp. 1357–1364.

- Kirkcaldy, B.D. and A. Furnham: 1991, 'Extraversion, neuroticism, psychoticism and recreational choice, *Personality and Individual Differences* 7, pp. 737–745.
- Krumm-Merabet, C. and T.D. Meyer: 2005, 'Leisure activities, alcohol, and nicotine consumption in people with a hypomanic/hyperthymic temperament', *Personality & Individual Differences* 38, pp. 701–712.
- Lu, L. and M. Argyle: 1993, 'TV watching, soap opera and happiness', *Kaohsiung Journal of Medical Sciences* 9, pp. 350–360.
- Lu, L. and M. Argyle: 1994, 'Leisure satisfaction and happiness as a function of leisure activity', *Kaohsiung Journal of Medical Sciences* 10, pp. 89–96.
- Lu, L. and C.H. Hu: 2002, 'Experiencing leisure: The case of Chinese university students', *Fu Jen Studies: Science and Engineering* 36, pp. 1–21.
- Lu, L. and Y.Y. Lin: 1998, 'Family roles and happiness in adulthood', *Personality and Individual Differences* 25, pp. 195–207.
- Lu, L. and J.B. Shih: 1997, 'Personality and happiness: Is mental health a mediator?', *Personality and Individual Differences* 22, pp. 249–256.
- Lu, L., J.B. Shih, Y.Y. Lin and L.S. Ju: 1997, 'Personal and environmental correlates of happiness', *Personality and Individual Differences* 23, pp. 453–462.
- Ministry of Education: 2000, <http://www.edu.tw>.
- Myers, D.G. and E. Diener: 1995, 'Who is happy?', *Psychological Science* 6, pp. 10–19.
- Nias, D.K.B.: 1977, 'The structuring of recreational interests', *Social Behaviour and Personality* 5, pp. 383–388.
- Weaver, J.B.: 1991, 'Exploring the links between personality and media preferences', *Personality and Individual Differences* 12, pp. 1293–1299.
- Wills, G.I.: 1984, 'A personality study of musicians working in the popular field', *Personality and Individual Differences* 5, pp. 359–360.

Address for correspondence:

LUO LU

Graduate Institute of Human Resource Management

National Central University

No. 300, Zhongda Rd. Zhongli City Taoyuan County 32001

Taiwan ROC

E-mail: luolu@mgt.ncu.edu.tw