AGE AND CULTURAL DIFFERENCES IN COGNITIVE AND AFFECTIVE COMPONENTS OF SUBJECTIVE WELL-BEING

Olivia Pethtel

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Committee:

Yiwei Chen, Ph. D., Chair/Advisor
Dara Mushner-Eizenman, Ph. D.
Catherine Stein, Ph. D.
ABSTRACT

Dr. Yiwei Chen, Advisor

Previous research suggests that subjective well-being (SWB) is experienced differently according to age and culture. The present study examined age and cultural differences in cognitive and affective components of SWB. Forty-two Chinese older adults, 47 Chinese young adults, 52 American older adults, and 47 American young adults completed surveys measuring self-life satisfaction, family’s life satisfaction, positive affect, and negative affect. It was found that older adults had lower negative affect than young adults in both China and U.S. It was also found that Americans had higher levels of self-life satisfaction, family’s life satisfaction, and positive affect than Chinese across age groups. Additionally, family’s life satisfaction was more related to self-life satisfaction for Chinese than for Americans. Findings are discussed in light of the Socioemotional Selectivity Theory and the theories of culture and self-construal.
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Age and Cultural Differences in Cognitive and Affective Components of Subjective Well-Being

As the elderly population steadily rises due to increased longevity, it is becoming increasingly important to understand what factors define living a good later life. Since the increase in the elderly population is a worldwide phenomenon, it is also important to understand how definitions of a good later life vary across cultures. Subjective well-being (SWB) involves people’s cognitive and affective evaluation of their lives (Diener, Oishi, & Lucas, 2003), reflecting a subjective sense of overall life satisfaction and positive mental health (Lawton, 1984). Prior research suggests that SWB is experienced differently according to age and culture, especially in the affective domain (e.g. Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Diener, Oishi, Lucas, 2003; Shimmack, Oishi, Diener, 2002). Much of the aging literature shows that older adults show better emotion regulation than younger adults (e.g. Lawton, Kleban, Rajagopal, & Dean, 1992) and report less negative affect than younger adults and similar levels of positive affect (e.g. Mather & Carstensen, 2005). Furthermore, a consistent finding in cross-cultural research on SWB is that people from Asian cultures tend to report lower levels of life satisfaction and positive affect than North Americans (e.g. Diener, Diener, & Diener, 1995; Kitayama, Markus, & Kurakowa, 2000). To better understand how age and culture differentially influence subjective well-being, the current study examined the subjective well-being of younger and older adults in Chinese culture and compared it to that of younger and older adults in North American culture.

Subjective Well-Being

Underlying subjective well-being are two separate components: a cognitive component and an affective component (Andrews & Whithey, 1976). The cognitive and affective components of SWB show a significant degree of independence (Lucas, Diener, & Suh, 1996;
Lawton, 1984). They have different functions over time and different relations with other variables (Diener, 1994) and thus, require separate measurement. The present study measured the cognitive and affective components of SWB as separate constructs.

**Cognitive Component of SWB**

The cognitive component is measured by a life satisfaction judgment, which Shin & Johnson (1978) defined as “a global assessment of a person’s quality of life according to his [or her] chosen criteria” (p.478). Cognitive judgments of life satisfaction reflect an individual’s perceived distance from their aspirations, as they depend on “a comparison of one’s circumstances with what is thought to be an appropriate standard” (Diener, Emmons, Larsen, & Griffin, 1985, p. 71). The appropriate standard is not an externally imposed objective standard, rather it is a subjective judgment constructed by the individual assessing his or her own life. However, established measures of life satisfaction only assess satisfaction with one’s own life and largely ignore the interpersonal dimension of life satisfaction, such as one’s family’s satisfaction with life. It is especially important to measure the family’s dimension of life satisfaction when examining SWB in East Asian cultures; hence, the present study measured family’s life satisfaction in addition to self-life satisfaction.

**Culture and Cognitive SWB.** Prior research has shown that North Americans report significantly higher levels of life satisfaction than East Asians (Diener, Diener, & Diener, 1995). According to theories on culture and self-construal (Markus & Kitayama, 1991a), this perhaps is due to the self-enhancing tendencies that are prevalent in American culture. As Americans are taught to stress their unique qualities, average Americans assume they are above average in many domains (Markus & Kitayama, 1991b). It is normal for people in this culture to promote themselves because of their emphasis on maintaining positive attitudes about the self. These self-
enhancing tendencies most likely stem from an independent social orientation associated with the self-construal typical of people in “Western” or individualistic societies, in which emphasis is placed on separateness, internal attributes, and uniqueness of individuals (Markus & Kitayama, 1991a). People with an independent social orientation view themselves as metaphysically discrete and separate from other persons with an orientation toward autonomy and differentiation (Kitayama, Markus, & Kurokawa, 2000).

In contrast, such self-enhancing tendencies occur much less among East Asians and are weaker when they do occur (Heine et al., 2000) because people in East Asian or “collectivistic” societies typically display an interdependent social orientation, in which emphasis is placed on connectedness, social context, and relationships (Markus & Kitayama, 1991a). People with an interdependent social orientation develop a sense of self that is fundamentally connected to others within an in-group and have an orientation toward interpersonal harmony and connectedness (Kitayama, Markus, & Kurokawa, 2000). In opposition to North Americans, East Asians show self-effacing tendencies in self-evaluations (Heine, et al., 1999), which are more critical of the self and align with the virtues of modesty taught in collectivist cultures. In relation to cognitive SWB, Chinese are less likely than Americans to outwardly say that they are experiencing a state of well-being, even if they believe they are. Christopher (1992) suggested that this self-effacing tendency is compensated by a more “objective” evaluation of the person through the support of family and friends and thus, a major part of well-being depends on others. We expected that our North American participants would report higher satisfaction with life than Chinese participants, although a lower self-rating displayed by East Asians may not necessarily indicate that they are experiencing less SWB, but a different self-presentation strategy.
Furthermore, traditional measurement of life satisfaction only focuses on satisfaction with one’s own life and overlooks the interpersonal dimension of life satisfaction, which may be an important but neglected dimension in East Asian populations. It is essential to measure this dimension of well-being to better understand a Chinese individual’s satisfaction with life. Since family is so fundamentally tied to one’s sense of self in interdependently oriented individuals, the current study examined differences in family’s life satisfaction as measured by 5 items from The Expanded Satisfaction With Life Scale (Ho & Cheung, 2007) in addition to satisfaction with one’s own life as measured by The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Ho and Cheung (2007) recently developed this measure of life satisfaction in Chinese populations by adding interpersonal items to the existing Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). The best fitting model had a two-factor structure: one consisting of items from the original SWLS and the other consisting of the additional interpersonal items. The two factors, intrapersonal SWB and interpersonal SWB, represent two separate but related components. Ho and Cheung suggest that this measure may be applicable to non-Chinese populations, although its applicability across cultures and age groups has yet to be established. In addition to examining age and cultural differences in self and family life satisfaction, the current study explored the applicability of this scale to a U.S. population. The current study also explored the relationship between satisfaction with one’s own life and family’s satisfaction with life within each culture to see if they would be more related in collectivist cultures.

*Age & Cognitive SWB.* The cognitive component of SWB seems to be unaffected by age across several nations (Lucas & Gohm, 2000). Despite declines in physical health and cognitive abilities, experiencing the deaths of peers and spouses, and other rigors that accompany aging,
the life satisfaction of older adults does not seem to be affected. Diener and Suh (1998) found that mean levels of life satisfaction were stable across age groups in different cultures, despite declines in income with age and the percent of people who are married with age. Thus, age differences in life satisfaction were not expected.

Affective Component of SWB

The affective component is measured by the degree of positive and negative affect an individual feels (Diener & Emmons, 1984). A great deal of past research supports the independence of positive affect and negative affect (e.g. Diener & Emmons, 1984; Warr, Barter, & Brownbridge, 1983; Watson & Tellegen, 1985; Lucas, Diener, & Suh, 1996). Positive and negative affect do not represent two opposite ends of a bipolar spectrum; they are highly distinctive dimensions that should be measured as separate constructs. Therefore, the present study measured positive and negative affect as separate dimensions with the use of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988).

Age and Affective SWB. In contrast to the cognitive SWB, age differences in affective SWB were expected. Some evidence and theories, such as the Socioemotional Selectivity Theory (Carstensen, Isaacowitz, Charles, 1999), suggest that well-being may actually improve with age, especially in the affective domain (e.g. Carstensen, 1995; Labouvie-Vief & Blanchard-Fields, 1982). Emotion regulation appears to be maintained or even improved across adulthood (Carstensen, et al., 2000; Carstensen & Mikels, 2005). Compared to young adults, older adults rate their emotion-regulation skills as better and report that they focus more on self-control of their emotions (Lawton, et. al, 1992).

Furthermore, much research indicates that older adults show a positivity bias, preferring to emphasize the positive aspects of their experience and downplay the negative aspects of their
experience. Both self-reports and measures of actual emotional experience indicate that older
adults are better at minimizing negative affect and maintaining positive affect over time
(Carstensen, et al., 2000; Gross, Carstensen, Paupathi, Tsai, Skorpen, & Hsu, 1997). Several
studies have shown that the frequency of negative emotions decreases across most of adulthood
and levels off around age 60 (Carstensen, et al., 2000; Charles, Reynolds, & Gatz, 2001;
Mroczek & Kolarz, 1998; Lawton, et al., 1992), while positive affect seems to remain largely
stable throughout adulthood (Mather & Carstensen, 2005). According to Carstensen’s
Socioemotional Selectivity Theory (Carstensen, Isaacowitz, & Charles, 1999), as older adults
approach the end of life and perceive constraints on their time left, their motivation shifts toward
selectively emphasizing emotional goals over information-seeking goals. Older adults are
motivated to minimize negative perceptions of well-being as goals work to optimize well-being.
Therefore, it was expected that older adults would report lower negative affect than younger
adults, but a similar level of positive affect.

Culture and Affective SWB. How and when good feelings are experienced may also differ
according to culture (e.g. Suh, Diener, Oishi, & Triandis, 1998). Kitayama and Markus (1994)
found that Americans report experiencing a greater frequency of positive emotions than
Japanese. In addition, American undergraduates are more likely to endorse positive affect items,
while Taiwanese, Chinese, and Korean undergraduates are more likely to endorse negative affect
items and accept experiences of negative affect (Christopher, 1992; Diener, Suh, Smith, & Shao,
1995). Moreover, Americans report an overwhelmingly greater frequency of experiencing
positive feelings than negative feelings, while Japanese do not show this pattern (Kitayama and
Markus, 1994). Since feelings are self-definitional for Americans, positive feelings function as
an indicator of self-adequacy and integrity. Accordingly, it was expected that the North
American sample would report higher positive affect than the Chinese sample in the present study.

In addition, the current study examined these cultural differences in the experience of affect in older adults, which had not yet been well established. According to Socioemotional Selectivity Theory (SST), the universal association between chronological age and closeness to death should lead to relative age differences across cultures. In all cultures, approaching endings should direct attention to emotionally meaningful goals, but cultural beliefs about time, meanings of endings, and what is considered emotionally meaningful may influence the cultural variability around the predicted life cycle differences. SST has predominately been tested using an American sample, so it is largely based in Western culture. Age differences in affective well-being have not been thoroughly examined in non-Western cultures; hence, the current study examined age differences in affective SWB in Chinese people to see if Socioemotional Selectivity Theory applies to people in other cultures.

Finally, past research has found that the frequency and intensity of experiencing pleasant and unpleasant emotions are negatively correlated in the U.S., but positively correlated in China and Korea (Schimmack, Oishi, & Diener, 2002; Bagozzi, Wong, & Yi, 1999). This suggests that Americans may experience positive and negative emotion as opposites while East Asians experience both types of emotions simultaneously. East Asians, influenced by dialectic philosophies throughout their cultural history, seek balance between positive and negative affect for their well-being, rather than emphasizing positive over negative affect as Americans do. In the current study, it was expected that positive affect and negative affect would be negatively correlated in the American sample and positively correlated in the Chinese sample.

*Cultural Differences in the Relationship between the Affective and Cognitive Aspects of SWB*
Although emotions are universal and partially biologically determined, they are always situated and embedded in specific cultural contexts (Uchida, Norasakkunkit, Kitayama, 2004). As individualism becomes socialized into North Americans’ sense of self, internal information is assigned more weight than external information when making life satisfaction judgments. Independently oriented individuals are motivated to find and affirm the positivity of internal attributes, and thus, emotions play a big role in influencing life satisfaction. In western nations, internal attributes such as self-esteem, optimism, personal achievement, and extraversion are important predictors of life satisfaction (Diener, 1996; Costa, McCrae, Zonderman, 1987; Uchida, Norasakkunkit, & Kitayama, 2004). While these internal attributes have been shown to be strong predictors in individualistic nations, societal norms and interpersonal relationships were more strongly associated with measuring levels of life satisfaction in collectivist nations (Suh, Oishi, & Triandis, 1998). Diener & Diener (1995) found a significant cultural difference in the size of the correlation between satisfaction with self and global life satisfaction. Satisfaction with oneself and with one’s freedom was found to be a stronger predictor of life satisfaction in highly individualistic nations than in collectivist nations (Oishi, Diener, Lucas, & Suh, 1999). Relationship harmony was identified as a more important predictor of life satisfaction in China than in the United States (Kwan, Bond, & Singelis, 1997). Li & Liang (2007) found that social support significantly contributed to life satisfaction of older Chinese. While life satisfaction is constructed in terms of personal achievement and positivity of the personal self in individualistic cultures, the realization of being part of positive social relationships largely determines the life satisfaction of those in interdependent cultures. In sum, people in various societies hold different values and assign them different weights of importance. The extent to which people in each society accomplish the values they hold dear can be indicated by subjective well-being (Diener...
& Suh, 2000). The present study explored the relationship between the cognitive and affective components of subjective well-being.

The Current Study

The aim of the current study was to examine age and culture differences in both cognitive and affective components of subjective well-being. The cognitive component was measured with two factors: (1) self-life satisfaction and (2) family’s life satisfaction by the Expanded Satisfaction with Life Scale (Ho & Cheung, 2007) and the affective component was also measured with two factors: (1) positive affect and (2) negative affect by the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). Participants from the United States were included to represent an independently oriented culture because the United States is one of the most individualistic cultures (Triandis, 1989) and should theoretically have more individuals who align with an independent self-construal. Participants from China were included to represent an interdependently oriented culture because more individuals from China should reflect an interdependent self-construal, as this nation is tightly knit with the dialectic thinking that promotes a connected view of the self. Since nations were selected to represent culture, this analysis takes place at the ecological or cultural level, rather than at the individual level (Triandis, 2000).

Four hypotheses were proposed. First, the American sample would report higher life satisfaction for themselves than the Chinese sample. Second, family’s life satisfaction would be more related to self-life satisfaction in the Chinese sample than in the American sample. Third, older adults would report lower negative affect than younger adults in both American and Chinese samples. Fourth, the American sample would report higher positive affect than the Chinese sample. Additional exploratory analyses were conducted to examine the relationships
among all the measures of subjective well-being (i.e. self life satisfaction, family’s life satisfaction, positive affect, negative affect) within each culture and compared these relationships between cultures.
METHOD

Participants

North American Sample. Forty-seven young Americans (aged 18-29, $M = 20.85$, $SD = 2.40$) and 52 older Americans (aged 61-92, $M = 75.64$, $SD = 8.80$) participated. American young adults were recruited from a large Midwestern university and received course credits for their participation. American older adult participants were recruited from a local senior center in a Midwestern city. They received a $5$ compensation for participation. The ethnicity of the American sample was 80% Caucasian, 9% African American, 7% Native American, 2% Hispanic, and 2% Asian American.

Chinese Sample. Forty-seven Chinese young adults (aged 18-29, $M = 20.38$, $SD = .968$) and 42 Chinese older adults (aged 60-75, $M = 66.12$, $SD = 3.95$) participated. Chinese young adults were recruited from a large metropolitan university and received course credit for their participation. Chinese older adults were recruited from a city in Mainland China. They received a $5$ compensation for participation. The American ($M = 14.14$, $SD = 2.27$) and Chinese samples ($M = 13.01$, $SD = 2.26$) were also comparable in years of education.

Procedure

The same procedure was used for American and Chinese samples. Participants were provided an informed consent form (see Appendix A.1 & A.2), in which they read and signed in order to participate. After participants completed the demographics form, they completed a self-report packet consisting of the measures explained below.

Materials

Materials were translated into Chinese and back translated into English (Brislin, 1970). Since the family life satisfaction subscale of the E-SWLS was developed in Chinese, it was
translated into English and back translated into Chinese. Discrepancies were discussed and solved between the author and an independent translator.

_The Satisfaction with Life Scale_ (Appendix B.1) is a single-factor self-report construct that was designed to measure the cognitive component of subjective well-being. Respondents indicate the extent to which they agree or disagree with five statements (e.g. In most ways my life is close to my ideal) on a 7-point scale (1=strongly disagree, 7=strongly agree). Higher scores indicate higher life satisfaction. The Satisfaction with Life Scale (SWLS) has been shown to accurately measure the cognitive component of SWB in the American population with favorable psychometric properties, including high internal consistency and high temporal reliability (Diener, Emmons, Larsen, & Griffin, 1985; Pavot, Diener, Colvin, & Sandvik, 1991). The SWLS is well suited for different age groups (Diener, Emmons, Larsen, & Griffin, 1985).

_The Expanded Satisfaction With Life Scale_ (Appendix B.2) consists of the SWLS and 5 items measuring one’s perceptions of their family’s satisfaction with life (e.g. My family members are satisfied with their life). The SWLS items represent intrapersonal SWB and the family-satisfaction items represent interpersonal SWB. Like the SWLS, respondents indicate the extent to which they agree or disagree with five statements (e.g. In most ways my life is close to my ideal) on a scale from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicate higher life satisfaction for the family. The reliability coefficients for the Beijing and Hong-Kong sample in Ho and Chueng’s (2007) study were: intrapersonal SWB, $\alpha = .42$, $\alpha = .86$; interpersonal SWB, $\alpha = .64$, $\alpha = .86$, respectively.

_Positive Affect and Negative Affect Schedule_ (Appendix C) is a two-factor self-report scale that measures the affective component of SWB. In both the United States and in many other cultures, two dominant distinct dimensions consistently emerge in research on affective
structure: positive affect and negative affect (Watson, Clark, & Tellegen, 1988). PANAS measures positive affect and negative affect with two independent subscales each containing ten words describing emotions. In the present study, respondents indicated the extent to which they feel each emotion in general on a scale from 1 (very slightly or not at all) to 5 (extremely). Higher scores indicate higher levels of positive or negative affect. These scales have solid psychometric credentials; they are shown to be highly internally consistent, largely uncorrelated, and stable over a two-month time period. Cronbach’s alpha ranged from .86 to .90 for PA and from .84 to .87 for NA. Research also has shown that the PANAS scales are a viable measure for both younger and older adults (Watson, Clark, & Tellegen, 1988; Kercher, 1992).
RESULTS

**Factor Analysis and Internal Consistency**

To determine whether the two-factor structure of The Expanded Satisfaction with Life Scale (E-SWLS) and The Positive and Negative Affect Schedule (PANAS) held across American and Chinese populations, two-group confirmatory factor analyses were conducted using Amos (Amos Development Corporation, 2007). Analyses revealed that the two-factor structure of the E-SWLS model, consisting of the SWLS items and the family SWLS items adequately fit the data for both cultural groups, $\chi^2(72) = 159.92$, $p < .0001$; RMSEA = .079; CFI = .98. Cronbach’s alpha for the satisfaction with life subscale was .87; Cronbach’s alpha for the family satisfaction with life subscale was .65. In the best fitting model, regression weights and means of the error term were constrained to be equal across groups as well as the means and variances of the latent variables. In a more restrictive model, regressions weights of the observed variables were constrained and this significantly worsened the model fit ($\Delta \chi^2 = 16.88$, $\Delta df= 8$). The two-factor structure of the PANAS model (positive and negative), also adequately fit the data for both groups, $\chi^2(338) = 654.79$, $p < .0001$; RMSEA = .070; CFI = .96. Cronbach’s alpha for the positive affect subscale was .86; Cronbach’s alpha for the negative affect subscale was .64. The best fitting model for the PANAS had the same constraints as the best fitting model for the E-SWLS. Similarly, a more restrictive model significantly worsened the model fit ($\Delta \chi^2 = 36.58$, $\Delta df= 18$).

**Cultural Differences in the Cognitive SWB**

To examine age and cultural differences in life satisfaction, a 2 (age: young; older) x 2 (culture: American; Chinese) multivariate analysis of variance was conducted with self-life satisfaction and family’s life satisfaction as the dependent variables. Supporting the first
hypothesis, there was a significant main effect of culture on satisfaction with life. The American sample reported higher satisfaction with their own life on average (\(M = 5.21, SD = 1.1\)) than the Chinese sample (\(M = 3.65, SD = 1.22\)), \(F(178) = 80.70, p < .001\). The effect of culture on self-life satisfaction was quite large (\(d = 1.23; r^2 = .53\)). The American sample also reported higher satisfaction with life for their family on average (\(M = 4.93, SD = 1.66\)) than the Chinese sample (\(M = 3.78, SD = 1.23\)), \(F(178) = 28.51, p < .001\). Culture had a moderately large effect on family’s life satisfaction (\(d = .79; r^2 = .37\)).

**Relationship Between Self-Life Satisfaction and Family’s Life Satisfaction**

Peason’s r correlations were conducted between the self and family’s life satisfaction for each cultural group to test the second hypothesis. Correlations within each cultural group are shown in figure 1 (Appendix D). Self-life satisfaction and family’s life satisfaction were strongly correlated in the American sample, \(r(98) = .573\), and even more so in the Chinese sample, \(r(94) = .838\). Family life satisfaction accounted for about 70% of the variance in self-life satisfaction in Chinese, \(R^2 = .702\), and only 33% in Americans, \(R^2 = .328\). These results suggest that for Chinese, feeling that one’s family is satisfied with their life may be very important for one’s satisfaction with his/her own life (and vice-versa), and much more so than for Americans. Using a Fisher’s z transformation, a significant difference was found between the correlations for the American sample and the Chinese sample (\(z = 3.834, p < .001\)). Thus, the second hypothesis was also supported.

**Age and Cultural Differences in the Affective SWB**

To examine age and cultural differences in affect, a 2 (age: young; older) x 2 (culture: American; Chinese) MANOVA was conducted with positive affect and negative affect as the dependent variables. For negative affect, there was a significant main effect of age, as was
predicted in the third hypothesis. The older adult sample reported lower negative affect on
average (\(M = 1.65, SD = .59\)) than the younger adult sample (\(M = 2.13, SD = .86\)), \(F(178) = 19.30, p < .001\). Age had a large effect on negative affect (\(d = .84; r^2 = .39\)). Older and younger
adults reported similar levels of positive affect on average (old \(M = 3.21, SD = .68\); young \(M = 3.29, SD = .70\)), \(F(178) = 1.24, p > .50\). These findings suggest that older adults in both cultures
may be more motivated to minimize their experience of negative affect, suggesting that
Socioemotional Selectivity Theory could apply to people in other cultures.

Consistent with the fourth hypothesis, the American sample reported higher positive
affect on average (\(M = 3.53, SD = .658\)) than the Chinese sample (\(M = 2.98, SD = .597\)), \(F(175) = 33.44, p < .001\). Culture had moderate effects on positive affect (\(d = .65; r^2 = .31\)). The
American sample reported similar negative affect on average (\(M = 1.94, SD = .864\)) to the
Chinese sample (\(M = 1.85, SD = .673\)), \(F(178) = .914, p > .50\). None of the interactions were
significant.

Relationships Between Cognitive and Affective Components of SWB

Additional exploratory analyses were conducted to examine the relationships between
self-life satisfaction, family’s life satisfaction, positive affect, and negative affect within each
culture. These analyses were conducted to see how these relationships differ between cultural
groups. Pearson’s \(r\) correlations were run for positive and negative affect for each culture.
Consistent with past research, positive affect and negative affect were negatively correlated in
the American sample, \(r = -.341\), and positively correlated in the Chinese sample, \(r = .325\). It is
noteworthy that the correlations are in opposite directions. These results suggest that North
Americans may experience positive and negative feelings as opposing forces, while Chinese
experience them as compatible.
Next in the exploratory analyses, Pearson’s r correlation analyses were conducted for the cognitive and affective variables within each culture (see Figure 1). Within the American sample, positive affect significantly correlated with self-life satisfaction, but not family life satisfaction. Additional hierarchical analyses were conducted with the affective variables predicting the cognitive variables within each culture. Positive emotions related to self-life satisfaction, $\beta = .486, t(1,92)= 5.328, p<.001$, accounting for 24% of variance, $R^2 = .236$. Positive emotions were also related to self-life satisfaction for the Chinese sample, $\beta = .382, t(1,91)= 3.80, p<.001$, accounting for 8% of variance, $R^2 = .075$. These results suggest that positive affect is important for satisfaction with one’s own life, especially for Americans. While negative affect was not significantly related to life satisfaction in Americans after positive affect was entered, it was related to the life satisfaction of Chinese, and even more so than positive affect. Negative emotions related to self-life satisfaction, $\beta = -.341, t(1,90)= -3.386, p<.001$, accounting for an additional 10% of the variance, $\Delta R^2 = .104$. Unlike Americans, positive affect also related to family’s life satisfaction in Chinese, $\beta = .219, t(1,92) = 2.16, p = .034$, accounting for 5% of variance, $R^2 = .048$. 
DISCUSSION

Cognitive SWB: Age and Cultural Differences

Consistent with past findings (e.g. Diener and Suh, 1998), the cognitive aspect of SWB did not show any significant age differences in the present study. Older and younger adults in our study did not differ in satisfaction with their own lives or their family’s satisfaction with life. Where they did significantly differ was in the affective component. These results demonstrate the importance of measuring both the cognitive and affective components of well-being, as age differences were found in one component of SWB, but not the other. Because they show distinct age trends, these results further the notion that both cognitive and affective aspects should define subjective well-being.

In the cultural analysis of cognitive SWB, it was found that the Americans participants in both age groups generally had higher satisfaction with life for themselves and for their families than the Chinese participants in both age groups. One may interpret these findings to mean that Chinese are less satisfied with life than North Americans; however, theories on culture and self-construal suggest that this is more of a display of differing self-presentation tendencies and different cultural values placed on the various components of SWB between individualist and collectivist cultures (e.g. Markus & Kitayama, 1991; Heine, Takata, & Lehman, 2000). These theories propose that Americans are motivated by self-enhancement, and are thus more likely to rate themselves more favorably than Chinese— who show self-effacement tendencies as they place more value on modesty. In addition, while North Americans frequently think about how satisfied and happy they are in their lives, East Asians do not, suggesting that Americans may be more motivated by SWB than East Asians (Suh, 2000). Individualistic culture encourages individual effort toward determining one’s own happiness, while collectivist cultures recognize...
the influence of external information, such as other people and situational factors. The data of the current study suggest that these differing cultural prescriptions hold across age. Accordingly, older and younger Americans may be more likely to try to be more positive about their lives than East Asians because the individualistic culture promotes a higher ideal level of life satisfaction.

Although these results are interpreted in relation to theories on independent and interdependent self-construal, keep in mind that this study did not directly test theories on independent and interdependent self-construal. This interpretation is only one of several possible explanations of the cultural difference in life satisfaction. For instance, it is possible that the results actually reflect a true difference between the groups rather than differing self-presentation tendencies—the American sample may actually be more satisfied with their lives than the Chinese sample. Although the literature on cross-cultural SWB largely advances interpretations that arise from theories of independent vs. interdependent self-construal, there is a lack of studies that directly test the explanations these theories lend.

It is also worth noting that the present study’s findings on family’s life satisfaction uniquely contribute to the existing literature with the use of the E-SWLS, which taps into the interpersonal dimension of well-being that is especially important to the life satisfaction of people in collectivist cultures. It is important to incorporate scales that have been developed for non-Western populations, as most scales used for cross-cultural comparisons of well-being have been developed in Western cultures, and thus, are subject to the underlying assumptions of a liberal individualistic society (Christopher, 1999). Though this scale has not previously been applied to an American population, confirmatory factor analysis in this study shows that it can be used adequately on an American sample.

_Affective SWB: Age and Cultural Differences_
The present study found that older adults from both cultures generally had lower negative affect than younger adults. Older and younger adults had similar levels of positive affect on average. These results are consistent with prior studies that have shown that negative emotions decrease across adulthood (e.g. Charles, Reynolds, & Gatz, 2001) and positive affect remains largely stable (e.g. Mather & Carstensen, 2005). More importantly, this study adds to the past literature by showing that age differences in affect were similarly displayed across cultures. These data support Carstensen’s Socioemotional Selectivity Theory in that the universal association between aging and a perception of limited time left may motivate older adults of all cultures toward the emotionally fulfilling goal of optimizing desirable affect, and do this by minimizing their experience of negative affect and maintaining similar levels of positive affect. Just as older Americans have shown better emotional regulation than younger Americans in past research (e.g. Carstensen & Mikels, 2005), these results suggest that older Chinese may also be better at regulating their emotions than younger Chinese. Although these results were interpreted in light of the Socioemotional Selectivity Theory, keep in mind that the present study did not directly test the Socioemotional Selectivity Theory.

Along with their de-emphasis on life satisfaction, East Asians also place less value on positive emotions (Diener et al., 1995). Hiene and colleagues (1999) noted that positivity of the self is constantly reinforced in North Americans and to be a respectable member of this cultural group, one must show this tendency toward being positive about oneself. The results of the present study are consistent with this notion, as the American sample in this study reported significantly higher positive affect than the Chinese sample. Though not directly tested in this study, theories of independent vs. interdependent self-construal can be applied to interpret the results. Because emotions are very personal and experienced separately from others, positive
feelings function as an indicator of self-adequacy and integrity for people in individualist cultures, and are thus emphasized over negative feelings. People in collectivist cultures, on the other hand, place less importance on affirming internal attributes and emphasize social context and connectedness with others. Subsequently, one’s own positive affect is less emphasized by East Asians.

Moreover, Kitayama and colleagues (1997) found that Americans and Japanese weigh positive and negative information differently to promote their different self-enhancing versus self-effacing motives. Consistent with cultural norms concerning the value of positive and negative emotions, young and older Americans in this sample had significantly higher levels of positive affect than young and older Chinese in this sample. Similar to life satisfaction, this difference could reflect culturally different self-presentation tendencies and ideal levels of positive emotions. Since cultural differences in positive affect, self-life satisfaction, and family’s life satisfaction were found across age groups, there are reasons to believe culturally prescribed self-presentation tendencies and relative weights placed on values are socialized and maintained throughout adulthood.

Furthermore, the results of the exploratory analyses are in agreement with several researchers who have suggested that culture influences the relation between pleasant and unpleasant emotions (e.g. Bagozzi, Wong, & Yi, 1999; Heine, et al., 1999). The exploratory analyses of the present study revealed that the correlation between positive and negative affect show different directions for each culture; a negative correlation was found for the American sample and a positive correlation was found for the Chinese sample. These results are in line with this interpretation of cultural differences in affect; positive and negative emotions are seen as contradicting in Western cultures and compatible in East Asian cultures, so Americans are
more prone to overweighing the importance of positive emotions to counter their experience of negative emotions. Similarly, the exploratory analyses also revealed that positive affect was a better predictor of life satisfaction in Americans than in Chinese.

In addition, negative affect contributed to life satisfaction in the Chinese sample above and beyond positive affect, while its relationship with life satisfaction was rendered insignificant when positive affect was included in the American sample. These findings suggest that Chinese experience positive and negative emotions as compatible factors that both contribute to their life satisfaction, while Americans prefer to let positive affect dominate over negative affect to achieve life satisfaction. Positive affect was also related to family’s life satisfaction in Chinese, while affect was not related to family’s life satisfaction at all in Americans. This may imply that Americans only view positive and negative emotions as personal experience, separate from others, while affect may not only be experienced personally in Chinese, but also collectively. Since Chinese self-construal is so fundamentally connected with others— the family in particular—an individual’s positive affect speaks of the family’s life satisfaction.

The correlations found in the present study for self-life satisfaction and family’s life satisfaction between the American sample and the Chinese samples further demonstrate the different cultural ideas of the self and how connected or separate it is from others. Also consistent with the theory on culture and the self (Markus & Kitayama, 1991a), the correlation in the Chinese sample had a larger magnitude than the correlation in the American sample, indicating that the life satisfaction of Chinese is likely to be more closely related to their family’s life satisfaction than Americans.

In sum, the findings in the present study highlight the importance of age in determining negative affect across cultures and the importance of cultural influence on life satisfaction (self
and family) and positive affect. According to the Socioemotional Selectivity Theory, the perception of time left in life motivates a decrease in negative affect for older adults in both Western and non-Western cultures, suggesting that this may be a universal phenomenon. However, culture was the crucial factor influencing life satisfaction and positive affect across age groups. The distinct social orientations engendered by individualist and collectivist cultures shape ideas about what constitute ideal levels of life satisfaction and positive affect and also shape how these cultural ideals should be valued. These data of the present study suggests that these cultural ideals and values placed upon them stay the same as people age, and thus, the influence of culture on sense of self remains in later life.

Limitations and Future Directions

The findings of this study should be interpreted with its limitations in mind. Many of the limitations of this study reflect the methodological issues that face the literature on cross-cultural SWB in general. First of all, because this was a cross-sectional analysis, it is possible that cohort effects could have influenced the results found in this study, and thus the age effects should be interpreted with caution. The present results are also limited in their generalizability to the populations studies due to the use of convenience sampling. The young adult sample consisted entirely of college students, which may not be representative of young adults who are non-students. However, past research has shown that the results from college student samples can be generalized to different samples (e.g. Diener, Larsen, Levine, & Emmons, 1985). In addition, the cultural samples might not be representative of each culture.

This study also did not directly measure individuals’ participation and identification with their host culture and assumed participants from the U.S. and China would represent different cultural groups. In addition, the correlational design prevents any conclusions about causal
relationships. Finally, it should also be noted that Socioemotional Selectivity Theory or the theories on independent and interdependent self-construal were not directly tested.

Since most studies on cross-cultural SWB use one-time cross-sectional research designs, it is important for future research to validate the results found in these studies by using more sophisticated research designs, such as the experience-sampling method. This method samples mood and emotions at random moments in respondents’ everyday lives, which gets at the experience of emotions in momentary situations. Since the structure of emotions felt at a particular point in time are different than the structure of affect over time, the use of this method may find some distinct trends than those found when affect is reported *in general*, as was done in the present study. Future longitudinal studies are necessary to validate developmental trends implied in the present study.

Other methodologies, such as causal modeling and experimental approaches, would be very beneficial for making conclusions about causal relationships. Some researchers argue that because subjective well-being is an internal, subjective phenomenon, it should be measured solely by self-report, however, the use of other observable methods can only help to expand our understanding of subjective experience. By incorporating non-self-report measures, such as biological indexes (i.e. salivary cortisol levels), facial expressions, and cognitive measures (i.e. reaction time), researchers can have more confidence in their conclusions and learn something more complex about SWB.

Finally, future research should directly test these theories to better understand the influence of age and culture on well-being. For instance, future studies could test if different self-presentation tendencies are actually behind the cultural differences in life satisfaction and
positive affect by having participants rate others and compare that to how they would rate themselves.
REFERENCES


INFORMED CONSENT FORM

SUBJECTIVE WELL-BEING

Principal Investigator: Olivia Pethtel
(419)372-4501
oliviap@bgnet.bgsu.edu

You are invited to participate in a research study on age and cultural differences in subjective well-being. I am Olivia Pethtel, a graduate student in the Department of Psychology at Bowling Green State University and I am conducting this research study as part of my work on my Master’s thesis. This study examines how age and culture influences one’s life satisfaction and happiness. You are asked to fill out a questionnaire packet. It will take about thirty minutes to finish. Upon completion of this study, we expect to gain a better understanding of how well-being is determined by people of different ages and different cultures.

CERTIFICATION OF INFORMED CONSENT

This study involves no risks to physical or mental well-being beyond those risks encountered in normal everyday life. All data will be kept strictly confidential. Your name will not appear on any questionnaire and this consent form including your signature will be kept separately from the rest of your test materials. Data will be protected in a locked filing cabinet and a password protected computer database. Participation in this study is entirely voluntary and you are free to withdraw at any time without penalty. You have the right to have all questions concerning the study answered by the researcher. Deciding to participate in this study or not will not impact your grades, class standing, and relationship to the university. This study excludes individuals under 18 years of age from participation. You may contact the principal investigator, Olivia Pethtel, at (419)372-4501, or her advisor, Yiwei Chen, at (419)372-2462 for research questions, and contact the chair of the Human Subjects Review Board at (419)372-7716 or hsrb@bgsu.edu if any concerns arise during the study.

I, ________________________________, agree to participate in this study.

(Published Name)

__________________________________________ ___________
Participant’s Signature                                             Date
INFORMED CONSENT FORM
SUBJECTIVE WELL-BEING

Principal Investigator: Olivia Pethtel
(419)372-4501
oliviap@bgnet.bgsu.edu

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I, ________________________________, agree to participate in this study.
(Printed Name)

__________________________________________ ___________
Participant’s Signature                                             Date
APPENDIX B.1

The Satisfaction With Life Scale

Instructions: Please use one of the following numbers from 1 to 7 to indicate how much you agree or disagree with the following statements.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

1. ____ In most ways my life is close to my ideal.

2. ____ The conditions of my life are excellent.

3. ____ I am satisfied with my life.

4. ____ So far, I have gotten the important things I want in life.

5. ____ If I would live my life over, I would change almost nothing.
APPENDIX B.2

Expanded Satisfaction With Life Scale

Instructions: Please use one of the following numbers from 1 to 7 to indicated how much you agree or disagree with the following statements.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

1. In most ways my life is close to my ideal.
2. I believe that if my family members could live their life over, they would change almost nothing.
3. My family members are satisfied with their life.
4. So far, I have gotten the important things I want in life.
5. If I would live my life over, I would change almost nothing.
6. In most ways, my family members’ life is close to my ideal.
7. I am satisfied with my life.
8. The conditions of my life are excellent.
9. So far, I believe that my family members have gotten the important things they want in their life.
10. The conditions of my family members’ life are excellent.
APPENDIX C

The PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you generally feel this way, that is, how you feel on average. Use the following scale to record your answers.

<table>
<thead>
<tr>
<th></th>
<th>very slightly</th>
<th>a little</th>
<th>moderately</th>
<th>quite a bit</th>
<th>extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>or not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_______ interested  ________ irritable
_______ distressed  ________ alert
_______ excited     ________ ashamed
_______ upset        ________ inspired
_______ strong       ________ nervous
_______ guilty       ________ determined
_______ scared       ________ attentive
_______ hostile      ________ jittery
_______ enthusiastic  ________ active
_______ proud        ________ afraid
APPENDIX D

Figure 1. Correlations between the Cognitive and Affective Components of SWB

Within Americans

- Self-Life Satisfaction → Positive Affect: 0.486**
- Family Life Satisfaction → Positive Affect: 0.573**
- Family Life Satisfaction → Negative Affect: -0.255*
- Positive Affect → Negative Affect: -0.341**

Within Chinese

- Self-Life Satisfaction → Positive Affect: 0.257*
- Family Life Satisfaction → Positive Affect: 0.838**
- Family Life Satisfaction → Negative Affect: -0.219*
- Positive Affect → Negative Affect: 0.325**

**p < .01, * p < .05