ACCULTURATION IN THE CONTEXTS OF PERSONALITY, 
SELF-CONSTRUAL, AND ADJUSTMENT: 
A COMPARISON OF THE UNIDIMENSIONAL AND BIDIMENSIONAL MODELS 

by 

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Abstract

As research into acculturation increases, two competing models have emerged. The unidimensional model posits that heritage and host culture identifications have an inverse relationship, whereas the bidimensional model proposes that the two identifications are orthogonal. In the first study we compared these models in 164 Chinese-Canadian students, and found that the two dimensions were viable and had a distinct pattern of non-inverse correlations with aspects of personality. These findings remained after controlling for basic demographic characteristics. In the second study, we compared the two models in a sample of 157 Chinese-Canadian students, and again found that the two dimensions were viable and had a distinct pattern of non-inverse correlations with self-construal and psychosocial adjustment. The findings for adjustment remained after controlling for extraversion and neuroticism. We argue that, for both conceptual and empirical reasons, the bidimensional model is a more useful conceptualization of acculturation. Implications of these findings are discussed.
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General Introduction

Acculturation

The culture in which we live plays an important role in shaping our sense of self. Indeed, one key facet of our self-identity is that we belong to a certain cultural group. Thus, we have a sense of ourselves as being, for example, American, Canadian, or Chinese. When people move from one culture to another, many aspects of self-identity are modified in order to accommodate information about and experiences within the new culture, a process generally referred to as acculturation. Such changes may be observed in a number of different domains, including (a) attitudes, (b) behaviours, (c) values, and (d) sense of cultural identity. Thus, acculturation involves changes that take place as a result of continuous and direct contact between individuals from different cultural origins (Redfield, Linton, & Herskovits, 1936), and leads to fundamental alterations in the individual's sense of self.

An examination of the extant literature on acculturation reveals two underlying conceptualizations of this process, which we will call the unidimensional and the bidimensional models. Unidimensional models are based on the implicit assumption that change in cultural identity takes place in a single direction over the course of time. More specifically, immigrants are seen as being in a process of relinquishing the attitudes, values, and behaviours of their culture of origin while simultaneously adopting the characteristics of the new society (Gordon, 1964; Olmedo, 1979). Theorists who adopt a bidimensional perspective, meanwhile, argue that acculturation can be more completely understood when old and new cultural identities are seen as being relatively independent of one another (e.g. Berry, 1997; Mendoza, 1984; Ramirez, 1984; Zak, 1973). Thus, immigrants may adopt many of the values and behaviours of the new culture while maintaining some of the facets of their self-identity developed in their culture of origin. Direct comparison of these two models will be one of the major objectives of this paper.

The Unidimensional Perspective

The measurement of acculturation takes a step beyond the common practice of simply
classifying individuals into different cultural categories. In the unidimensional approach to this phenomenon, individuals may be placed on a continuum of identities ranging from exclusively heritage culture to exclusively host culture. This perspective was first detailed by Gordon (1964), who used the term assimilation to explain the process by which immigrants are absorbed into the host society. He developed an assimilation model in which penetration into sociocultural institutions of the host society is necessarily accompanied by, “the disappearence of the ethnic group as a separate entity and the evaporation of its distinctive values.” (Gordon, 1964, p. 81)

This conceptualization of acculturation as assimilation has informed much of the literature on cultural change. The majority of such studies have used demographic variables, such as generational status, age of immigration, or years in host country as indicators, with the underlying assumption being that individuals have more exposure and, consequently, more adaptation to the host culture with the passage of time. This process is seen as continuing over the course of generations until, eventually, the descendents of immigrants are culturally indistinguishable from the dominant group. Such an approach has proven valuable in examining a number of topics, such as personality characteristics of different cultural groups. Thus we discover, for example, that recent Chinese immigrants to Canada have personality profiles that closely resemble those found in Hong Kong, whereas Canadian-born Chinese have profiles that are similar to North Americans, suggesting a predominantly cultural, rather than biological, origin for basic personality (McCrae, Yik, Trapnell, Bond, & Paulhus, in press).

Although rudimentary demographic indicators are a simple and often useful means of going beyond cultural categories, they fail to account for numerous individual differences and other factors affecting the rate of adaptation to the new culture, such as pre-migration exposure to the new culture, residence in an ethnic neighbourhood, willingness to seek language education, and frequency of contact with host nationals. To address these shortcomings, a number of researchers developed self-report instruments designed to tap into psychological acculturation at an individual level. One of the most widely used examples of such an instrument
is the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn, Ahuna, & Khoo, 1992; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987), which was based on the Acculturation Rating Scale for Mexican Americans (ARSMA; Cuellar, Harris, & Jasso, 1980). Both of these instruments presuppose a unidimensional construct that ranges from highly traditional, through biculturalism at the midpoint of the scale, to highly assimilated. Thus, these instruments have expanded the unidimensional approach by explicitly including biculturalism as the midpoint between old culture and new culture identification (Suinn, Khoo, & Ahuna, 1995). The SL-ASIA has been widely used in studies involving Chinese immigrants and has yielded a number of important findings. For example, assimilation has been found to predict better adjustment (Iwamasa & Kooreman, 1995), less anxiety (Lai & Linden, 1993), and greater willingness to seek help (Atkinson & Gim, 1989; Gim, Atkinson, & Whiteley, 1990; Tata & Leong, 1994) among Chinese Americans.

Despite the pervasive influence of the unidimensional paradigm on acculturation theory and research, some writers have suggested that this approach fails to capture several important characteristics of acculturation (e.g. Berry, 1997; Dion & Dion, 1996; Ramirez, 1984; Szapocznik & Kurtines, 1980). One of the core assumptions of this model is that old culture identification is strongly and negatively correlated with new culture identification which, if false, could lead to a number of problems. For example, unidimensional instruments are unable to distinguish a bicultural individual who strongly identifies with both reference groups from one who does not strongly identify with either group (Mavreas, Bebbington, & Der, 1989). Both of these individuals would end up at the mid-point of a unidimensional scale, although it seems likely that people who have a well-developed bicultural identity would differ in important ways from those for whom cultural identity is not a particularly salient aspect of their self-schemas. Under the unidimensional models, such hypotheses cannot be tested. Similarly, if a dependent variable were to be strongly associated with both cultural identities, the two effects would likely cancel each other out and remain invisible to unidimensional instruments. Finally, the
unidimensional perspective fails to consider alternatives to assimilation, such as the emergence of integrated or bicultural identities.

The Bidimensional Perspective

To address some of the potential problems of the unidimensional approach, several theorists have conceptualized acculturation as a process in which both old and new cultural identities are free to vary independently (e.g. Berry, 1980; Celano & Tyler, 1990; Laroche, Kim, Hui, & Joy, 1996; Sanchez & Fernandez, 1993; Zak, 1973). Accordingly, individuals, “can have either strong or weak identifications with both their own and the mainstream cultures” (Phinney, 1990, pp. 501-502). Two core assumptions pertain to this more complex view of acculturation. First, the model presupposes that individuals differ in the extent to which self-identity includes culturally-based values, attitudes, and behaviours. Thus, some individuals may strongly identify with their cultural group, whereas others base their identity more on other factors, such as occupation or religion. Second, individuals are capable of having multiple cultural identities, each of which may independently vary in strength. People can thus incorporate the values, attitudes, and behaviours of two or more cultural groups, which may exist as separate components or be integrated to form a new, fused, cultural identity.

The most widely researched bidimensional approach to acculturation has been the Acculturation Framework of John Berry. Berry (1980; 1984; see 1997 for a review) observed that acculturating individuals are faced with two fundamental questions: “Is it of value to maintain my cultural heritage?” and “Is it of value to maintain relations with other groups?” The evaluative responses to these questions guide the individual’s adoption of a particular acculturation strategy. Although the Berry framework is based on a bidimensional model, he dichotomizes each dimension to yield four distinctive ‘acculturation strategies,’ which are then independently assessed. Integration involves maintaining cultural heritage while endorsing intergroup relations; assimilation involves relinquishing cultural heritage and adopting the beliefs and behaviours of the new culture; separation involves cultural maintenance without relations
with the new culture; and marginalization involves nonadherence to either old or new culture.

Although this methodology has yielded a number of studies which have enriched our understanding of acculturative processes, it has been criticized on a number of conceptual and methodological grounds (e.g., Kagitcibasi, 1997; Rudmin, 1996; Schönpfug, 1997). For example, logically, the theoretically interdependent nature of the scales demands that a high score on one scale should necessitate low scores on the other three. However, reported scale intercorrelations frequently differ from the true ipsative null condition (see for example, Berry, Kim, Power, Young, & Bujaki, 1989; Rudmin, 1996).

Finally, some researchers have measured the two dimensions separately and then dichotomized the two resulting scores in order to generate Berry’s four acculturation strategies. Lasry and Sayegh (1992; Sayegh & Lasry, 1993) asked participants to respond to two questions regarding strength of ethnic identity, one for old culture and one for new culture, on a ten-point Likert scale. A scalar split was then performed in order to categorize subjects. Similarly, Suinn added four experimental items to the SL-ASIA that reflect a bidimensional perspective on acculturation (Suinn, personal communication, 1995). These items allow for the independent assessment of old and new culture in two domains, cultural values and interpersonal competencies. Again, scores are dichotomized in order to categorize each domain according to acculturative strategy. Unfortunately, both of these efforts suffer from having only a small number of items and, additionally, Berry (1998) has criticized this approach for failing to adequately capture the four acculturation strategies. On the other hand, if one is more interested in the underlying two dimensions, this method may be the best way to explore some of the core assumptions of the bidimensional model, such as orthogonality.

A growing body of literature suggests that culture influences the way in which individuals construe the self in a social context (Triandis, 1989; Markus & Kitayama, 1991a; Singelis, 1994). According to these writers, individuals in many western cultures tend to treat the self as an entity that exists largely independently of others, whereas people in many other cultures
Unidimensional vs. Bidimensional Acculturation

construe the self as existing interdependently with other selves. Recent work indicates that the self-schemas of individuals in both cultures contain independent and interdependent substructures, with empirical evidence suggesting that these two elements have an orthogonal relationship (Kashima et al., 1996; Singelis, 1994). Although this work has important conceptual and practical implications (e.g. Kitayama, Markus, Matsumoto, & Norasakkunkit 1995), it deals primarily with the self in relation to other people, whereas the study of acculturation typically focuses on the individual’s broader attitudinal and behavioural responses to culture in general. Nonetheless, this bidimensional approach to the self provides additional support for the notion that core constructs which vary across cultures may share an independent, rather than an inverse, relationship.

Comparing the Perspectives

All in all, although there are indications that a bidimensional model may offer advantages over unidimensional approaches, there is little agreement on bidimensional measurement strategies and no work that directly compares the unidimensional and bidimensional perspectives. In this paper we will report two studies that directly compare the advantages and limitations of unidimensional and bidimensional acculturation models. The first study will focus on these two models in the context of comparative personality features, whereas the second study will explore these models in the context of self-construal and acculturative stress, two contemporary issues of interest for cross-cultural psychologists.

Study One

Introduction

The purpose of the first study was to establish the validity and utility of the bidimensional model in the measurement of acculturation, and to compare it with the more well-established unidimensional model in the context of basic personality. Validity of acculturation measures has traditionally been established by comparison of the instrument in question to demographic
variables such as generational status or age of immigration. Although such agreement is necessary, it is also important to ascertain that the acculturation construct being measured can account for variance above and beyond demographics. An additional consideration within the bidimensional approach is the degree of association between the old and new cultural self-identity subscales. If the correlation between the two subscales is strongly negative, that would lessen the impact of the disadvantages previously mentioned for the unidimensional model and challenge one of the core assumptions of the bidimensional model. On the other hand, if the two subscales are relatively independent, it will still be necessary to demonstrate that they both predict variables of interest and do so in a way that is superior to the unidimensional model. In the first study, the primary variables of interest were the 'Big Five' dimensions of personality, and three characterological measures related to the psychological elements of subjective well-being. In short, we suggest that the utility of the bidimensional model can only be established if the two dimensions (a) have adequate psychometric properties, (b) correlate in expected directions with key third variables, (c) are orthogonal, and (d) are show a distinct pattern of correlations with important variables of interest.

Despite the common perception of personality as stable and unchanging, there is some evidence to suggest that cultural change may be sufficient to cause corresponding changes in personality in the direction of the host culture. McCrae and colleagues demonstrated that personality profiles of Chinese individuals slowly come to more closely resemble those of Euro-Canadians, over the course of time and generations (McCrae et al., in press). Using Berry's acculturative strategies, Schmitz (1992a) showed that each strategy is characterized by a particular combination of basic personality traits. For example, integration was negatively related to neuroticism and psychoticism as assessed by the Eysenck Personality Questionnaire - Revised (EPQ-R; ) whereas separation was strongly associated with high neuroticism, high psychoticism, and low extroversion. There thus exists at least some evidence that acculturation can have an effect on personality and that, conversely, personality can also affect acculturation.
Method

Participants

The sample for Study 1 consisted of 109 female and 55 male undergraduate volunteers, ranging in age from 17 to 23 (M = 18.40, S.D. = 1.12), who identified themselves as being Chinese or Chinese-Canadian. Participants received a cover letter describing the purpose of the study and explaining confidentiality, and were offered extra course credit in exchange for filling out the questionnaires. There were 97 first generation and 67 second generation individuals of Chinese descent within the sample. Chi-square revealed no significant gender differences according to generational status; however, t-test revealed that the 2nd generation group was significantly older than the 1st generation group (18.6 versus 18.1 years of age), t(162) = 2.69, p < .01.

Measures

Bidimensional acculturation. In order to separately measure Chinese (old) and Canadian (new) acculturation, two experimental scales based on items proposed by Suinn (personal communication, 1995) were used. Each scale contains two items, one dealing with values and the other dealing with social interactions, with items being rated on a five point Likert scale. The psychometric properties of the bidimensional model, as assessed by these scales, are reported in the results.

SL-ASIA. The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn et al., 1987; Suinn et al., 1992), a widely used acculturation measure for Asian-Americans, was used to assess unidimensional acculturation. The SL-ASIA is a 21-item multiple-choice questionnaire which covers topics such as cultural preferences, ethnic identity, friendship choice, language, history, and attitudes (Suinn et al., 1987). Each item has five possible numbered responses, ranging from low acculturation with high Asian identity (1.00) to high acculturation with low Asian identity (5.00). Mid-range items are designed to reflect degrees of biculturalism. The wording of certain items on the SL-ASIA were altered to reflect the Canadian context, specifically, each
occurrence of 'United States' was changed to 'Canada/U.S.' Cronbach's alpha for this sample was $\alpha = .90$.

**Big Five Inventory.** The Big Five Inventory (BFI; John, Donahue, & Kentle, 1991) is a 44-item scale designed to measure five primary personality factors, namely (a) agreeableness, (b) conscientiousness, (c) extroversion, (d) neuroticism, and (e) openness to experience. These factors are thought by many writers to represent the basic underlying dimensions of human personality (e.g. Costa & McCrae, 1989; Goldberg, 1993). Items were rated on a five point Likert scale. Cronbach's alphas for this sample were $\alpha$s = .77, .76, .84, .85, and .82, respectively.

**Life Orientation Test.** The Life Orientation Test (LOT; Scheier & Carver, 1985) is a 12-item scale designed to examine the role of an optimistic outlook in coping with impediments encountered in the course of goal-directed activities. Items were rated on a five-point Likert scale ranging from zero to four. Cronbach's alpha for this sample was $\alpha = .75$.

**Ego-Resiliency Scale.** The Ego-resiliency scale (ER; Block, 1989) is a 14-item measure of adaptability to changing circumstances. Individuals high on ego-resiliency have been found to be more competent and successful, particularly in unstructured and interpersonal domains (Block & Kremen, 1996). Items were rated on an eight-point Likert scale. Cronbach's alpha for this sample was $\alpha = .79$.

**Rosenberg Self-Esteem Scale.** The Rosenberg Self-Esteem Scale (SE; Rosenberg, 1965) is a 10-item measure of dispositional self-esteem. Items were rated on an eight-point Likert scale. Cronbach's alpha for this sample was $\alpha = .87$.

**Results**

**Bidimensional Acculturation**

Reliability of the provisional bidimensional measure of acculturation was assessed by Cronbach's alpha, yielding $\alpha = .53$ for the Chinese subscale and $\alpha = .39$ for the Canadian subscale. Internal structure, specifically orthogonality, was explored by correlating the two
subscale scores which yielded an overall subscale correlation of $r = -0.20$, $p < 0.02$. The subscales were orthogonal in both the Chinese immigrant group and the Chinese-Canadian group, $r_s = -0.09$ and -0.01, ns.

Finally, concurrent validity was evaluated by comparing the two dimensions to (a) percentage of time lived in North America, and (b) the unidimensional acculturation score provided by the SL-ASIA. Percentage of time lived in North America was significantly associated with both the Chinese and Canadian subscales, $r_s = -0.26$ and 0.53 respectively, $p_s < 0.001$. As in previous studies using the SL-ASIA, there was a high degree of association between this instrument and time lived in North America, $r = 0.74$, $p < 0.001$. Significant associations were found between the SL-ASIA and the Chinese and Canadian subscales, $r_s = -0.46$ and 0.55 respectively, $p < 0.001$. In short, the pattern is coherent.

**Personality**

**Unidimensional acculturation.** The association between unidimensional acculturation and personality was examined using five separate linear regressions, entering the SL-ASIA as the predictor and each of the five factors on the BFI as criteria. Assimilation was significantly associated with higher extroversion and higher openness, $\beta_s = 0.21$ and 0.16, $p_s < 0.01$ and 0.04, respectively (see Table 1).

**Bidimensional acculturation.** The association between bidimensional acculturation and personality was assessed using blocked linear regression, entering the two acculturation dimensions followed by the interaction term. The Chinese dimension was associated with higher conscientiousness and lower neuroticism, $\beta_s = 0.20$ and -0.17, $p_s < 0.01$ and 0.04, whereas the Canadian dimension was associated with higher scores on agreeableness, conscientiousness, extroversion, and openness, $\beta_s = 0.16$, 0.17, 0.35 and 0.28, and $p_s < 0.04$, 0.02, 0.001 and 0.001, respectively, as well as with lower neuroticism, $\beta = -0.21$, $p < 0.01$. There were no significant interactions (see Table 1).
Well-being

A composite score was generated from the average of the standardized scores from three measures of personality associated with positive functioning and well-being, specifically LOT, SE, and ER. These three constructs capture many of the diverse elements seen as being a part of overall subjective well-being (Wilson, 1967; see Diener, Suh, Lucas, & Smith, in press, for a review). Cronbach’s alpha for this composite measure was $\alpha = .78$.

Unidimensional acculturation. The relationship between unidimensional acculturation and the composite score for well-being was assessed using linear regression. Assimilation was not significantly associated with well being, $\beta = .10$, ns (see Table 1).

Bidimensional acculturation. The relationship between bidimensional acculturation and the composite score for well-being was examined using blocked linear regression, entering the two acculturation dimensions followed by the interaction term. Both the Chinese and the Canadian dimensions were significantly associated with greater well-being, $\beta$s = .17 and .36, ps < .03 and .001, respectively (see Table 1).

Acculturation, Personality, and Demographics

To assess the extent to which the construct of acculturation explains variance in personality above and beyond demographic variables, the correlations between the SL-ASIA, Chinese subscale, Canadian subscale, and the personality measures were calculated, partialing out percentage of time lived in Canada and generational status. Table 2 shows the correlation coefficients before and after the removal of shared variance with the demographic indicators. Although all but one of the significant effects remained for the Chinese and Canadian subscales, the significant effects on the SL-ASIA were lost after demographics were partialed out.

Discussion

The first study provided evidence in support of the major predictions of the bidimensional
model. Both of the dimensions correlated in expected directions with key demographic variables, with a strong relationship for the Canadian dimension and a somewhat weaker one for the Chinese dimension. Unfortunately, the low number of items compromised the reliability of the two subscales. Nevertheless, the two dimensions were orthogonal to one another and both of them played a role in explaining acculturation differences in personality traits.

Looking first at the 'big five' dimensions of personality, the Canadian dimension was associated with lower neuroticism and higher levels of the other four factors. Additionally, the Chinese dimension also had explanatory power in predicting lower neuroticism and higher conscientiousness. On the other hand, the unidimensional measurement approach was unable to detect the effects involving neuroticism and conscientiousness, possibly because the Canadian and Chinese effects cancelled each other out. The SL-ASIA was only predictive of extroversion and openness, the two strongest relationships found for the bidimensional model, and yielded considerably smaller effect sizes. Similarly, the bidimensional approach demonstrated that both Chinese and Canadian dimensions are positively associated with higher levels of well-being, whereas the unidimensional approach did not reveal any significant effects. Again, it seems plausible that two meaningful effects are being cancelled out when the unidimensional model is used.

Finally, all but one of the effects found for the bidimensional model remained significant after controlling for the proportion of time spent in North America, suggesting that detailed paper-and-pencil measures of acculturation can explain variance above and beyond the demographic characteristics of the sample. On the other hand, all of the significant effects for the unidimensional model were erased by the covariation procedure. One possible reason for this finding is that many of the items on the SL-ASIA are dependent on demographic information.
Study Two

Introduction

The purpose of the second study was threefold. First, we developed an improved measure of acculturation in order to deal with some of the psychometric problems of the first study, particularly the low reliability, and to replicate the orthogonal structure predicted by the bidimensional model of acculturation. Second, we compared the unidimensional and bidimensional models in a domain of theoretical importance to cross-cultural psychologists, namely self-construal across cultures. Finally, we contrasted the two acculturation models in their ability to predict variables in a domain of great applied importance, namely psychosocial adjustment and acculturative stress.

Vancouver Index of Acculturation

In the first study, the two subscales measuring the bidimensional model of acculturation were of questionable reliability, due in large part to consisting of only two items each. The Vancouver Index of Acculturation (VIA) was therefore created in an effort to improve upon the first study's measurement approach. Although the underlying logic was similar to the instrument used in the first study, we felt that having a greater number of items covering a wider range of domains would yield a more reliable measure of the two dimensions. This study thus provided the opportunity to replicate the underlying structure of the bidimensional model as assessed by an improved instrument.

Self-Identity

Treatment of cultural self-identity using separate dimensions has conceptual precedents in the social and personality literature, most notably in work done on self-construal across cultures. Some researchers have argued that the self is not a unitary entity, and that the relative strength of various selves may differ across cultures (e.g. Markus & Kitayama, 1991a; Triandis, 1989). Triandis (1989) identified the private self, public self, and collective self and argued that each self exists to a varying extent within every individual. Selves are differentially sampled
depending on the context, and are either strengthened or weakened depending on the extent to which they are sampled. Thus, if Chinese culture provides numerous contexts for the sampling of the collective self, one would expect that self to be well developed in Chinese individuals.

One of the most important and widely-studied cultural dimensions is that of individualism-collectivism (Kagitcibasi & Berry, 1989), sometimes known at the individual level as idiocentrism-allocentrism (Triandis, 1989). As originally operationalized by Hofstede (1980), individualism refers to an emphasis on the individual in society whereas collectivism involves the supremacy of the in-group. North American culture is thought to lie close to the individualism pole, with East Asian cultures such as Chinese tending towards collectivism. Similarly, Markus and Kitayama (1991a) have proposed that an individual with an independent self-construal sees his or herself as a bounded and autonomous entity, whereas those with an interdependent self-construal tend to perceive themselves as being interconnected with others. According to these writers, North Americans tend to have a strong independent self and a weak interdependent self, with the reverse holding true for East Asians.

Singelis (1994) has since established that these two conceptualizations of self are orthogonal, and has suggested that people who have been exposed to both East Asian and North American culture may be particularly likely to have well developed independent and interdependent selves. Comparison of these constructs with the models of acculturation discussed in this paper can therefore expand our purview to an important area of personality and social psychology. Furthermore, since many of the predictions made by these theories involve specific differences between East Asian (e.g. Chinese) and North American culture, instruments measuring these constructs can serve as a valuable means of validating the VIA.

**Psychosocial Adjustment**

One potential advantage of bidimensional instruments such as the VIA, particularly over unidimensional approaches, is the possibility of shedding new light on commonly reported acculturation effects. Of particular interest to researchers interested in cultural transition are the
various ways in which individuals may cope, or fail to cope, with the stresses associated with acculturation. The relationship between acculturation and psychosocial adjustment has been well established in the literature and has given rise to a new term, acculturative stress, to describe the potentially adverse effects of changing cultures.

In general, the unidimensional paradigm predicts that the effects of acculturative stress should diminish as individuals successfully shed the old and adopt the new culture. However, as Berry (1997) has noted, both old and new culture identification may provide a richer picture of acculturative stress and adjustment. Based on a long series of studies using his acculturation framework (Berry et al., 1989; Dona & Berry, 1994; Krishnan & Berry, 1992; Partridge, 1988; Sam, 1994; Sam & Berry, 1995; Schmitz, 1992b), Berry has concluded that the integration strategy leads to the best mental health outcomes, whereas marginalization leads to the worst outcomes (Berry, 1990, 1997; Berry, Kim, Minde, & Mok, 1987; Berry & Sam, 1996). Assimilation and separation fall somewhere in the middle.

Given the relationships between acculturation and personality observed in the first study, one might hypothesize that mental health outcomes based on acculturation may be based on pre-existing personality traits. For example, the reported advantages for integration may be due to the relationship between this acculturation strategy and neuroticism. Less neurotic people may be more likely to choose integration as a strategy and be more able to implement it effectively. In order to deal with these possibilities, the following study will control for such personality variables when comparing the relationship between the two acculturation paradigms and psychosocial adjustment.

Method

Participants

The sample for Study 2 consisted of 104 female and 53 male undergraduate volunteers, ranging in age from 17 to 23 (M = 18.40, S.D. = 1.12), who identified themselves as being Chinese or Chinese-Canadian. Participants received a cover letter describing the purpose of the
study and explaining confidentiality, and were offered extra course credit in exchange for filling out the questionnaires. There were 90 first generation and 67 second generation individuals of Chinese descent within the sample. Chi-square revealed no significant gender differences according to generational status; however, t-test revealed that the 2nd generation group was significantly older than the 1st generation group (19.7 versus 19.5 years of age), $t(155) = 2.17, p < .04$.

Measures

Participants received a questionnaire package containing a wide variety of instruments assessing various aspects of personality and psychosocial adjustment. Two of the instruments, the SL-ASIA and the BFI, were used in Study 1 and are described above. In addition, an expanded two-dimensional acculturation scale was developed, individualism-collectivism and self-construal were used as validation measures, and psychosocial adjustment was quantified using a number of scales and specific questions. These measures are described below.

Vancouver Index of Acculturation. The Vancouver Index of Acculturation (VIA) is a 12-item instrument designed to measure the two proposed dimensions of acculturation (see Appendix). Items were generated in pairs with regard to content area, with one item in each pair referring to Chinese culture and the other item referring to Canadian culture. Each item was rated on a 5-point Likert scale, ranging from 'not at all' to 'very much so.' Examples of items include, "I am interested in maintaining or developing Chinese traditions," and, "I would be willing to marry a Canadian person." The specific content areas covered by four of the item pairs were derived from a scale used by Berry (personal communication, 1998) to study youth acculturation, while the other two pairs were the same as those used in the first study. Items were written in order to avoid conceptual dependency (Flannery, 1999), meaning that the semantics of a given item should not imply or necessitate a particular response to its pair. For example, the item, "I prefer social activities with Chinese people," implies that one does not also prefer such activities with Canadian people. A preferred wording would be, "I enjoy social
activities with Chinese people," which could conceptually be paired with enjoying, or not enjoying, such activities with Canadian people.

**Individualism-Collectivism Scale.** The short-form of the ICS (Triandis & Gelfand, 1998) is a 16-item questionnaire designed to assess the dimension of individualism-collectivism, or the extent to which individuals in a society act primarily in a self-oriented or a group-oriented fashion. Eight items are coded in the individualism direction, and eight items are scored in the direction of collectivism. Items were rated on a 7-point Likert scale. Cronbach's alphas for this sample were $\alpha = .75$ for individualism and $\alpha = .66$ for collectivism.

**Self-Construal Scale.** The Self-Construal Scale (SCS; Singelis, 1994) is based on the theoretical writings of Markus and Kitayama (1991a, b) and assesses two dimensions of self-construal: (a) independent self-construal, or the extent to which the self is seen as being a separate and autonomous entity; and (b) interdependent self-construal, or the extent to which the self is seen as being enmeshed within a group. These two dimensions are thought to be orthogonal to one another and are assessed using separate 12-item subscales. Items were rated on a 7-point Likert scale. Cronbach's alphas for this sample were $\alpha = .68$ for independent and $\alpha = .73$ for interdependent self-construal.

**Beck Depression Inventory.** The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, & Erbaugh, 1961) is a commonly used 21-item self report measure of depressive symptoms covering a two-week period. Each item contains four response options of increasing severity, numbered from zero to three. Overall scores are generated by summing the responses. Cronbach's alpha for this sample was $\alpha = .89$.

**Brief Symptom Inventory.** The Brief Symptom Inventory (BSI; Derogatis, 1993) is a 53-item self report measure of general psychological functioning and symptomology. Three indices can be generated from the BSI, two of which are statistically independent and were used in the present study. The Positive Symptom Total (BSI-PST) counts the number of symptoms
identified as being present, while the Positive Symptoms Distress Index (BSI-PSDI) is based on the mean indicated distress for present symptoms. Items are rated on a 4-point scale, ranging from zero to three, in which zero represents absence of the symptom and higher scores represent presence of the symptom at increasing levels of severity. Cronbach's alpha for this sample was \( \alpha = .95 \).

**Objective adjustment questions.** Specific objective questions tapped domains of health (e.g. how many illnesses have you had in the past 6 months, how satisfied are you with your health), social support (e.g. how many friends can you depend on for help, how satisfied are you with your friendships), and academic performance (e.g. what is your GPA, how satisfied are you with your GPA). Each question was rated on a 10-point Likert scale.

**Results**

**Bidimensional Acculturation**

Reliability of the VIA was assessed by means of Cronbach's alpha and mean inter-item correlation. Internal consistency for the 6-item Chinese subscale was \( \alpha = .82 \), mean inter-item \( r = .44 \), and for the 6-item Canadian subscale was \( \alpha = .76 \), mean inter-item \( r = .35 \). Correlation of the two subscale scores demonstrated that the two dimensions of acculturation were orthogonal in the overall sample, \( r = .03 \), ns. The subscales were also orthogonal in both the Chinese immigrant group and the Chinese-Canadian group, \( rs = .09 \) and .00, ns.

Concurrent validity was evaluated by comparing the two dimensions to (a) percentage of time lived in a Western, English-speaking country, (b) percentage of time educated in a Western, English-speaking country and (c) the unidimensional acculturation score provided by the SL-ASIA. The percentages of time lived in and educated in the West were significantly associated with the Canadian subscale, \( rs = .48 \) and .40, \( ps < .001 \). Significant associations were found between the SL-ASIA and the Chinese and Canadian subscales, \( rs = -.33 \) and .55 respectively, \( ps < .001 \).
Factorial validity was established by means of principal components analysis with promax rotation ($\kappa = 4$). Two components were extracted, in keeping both with a priori theoretical expectations, as well as with a substantial break observed on the scree plot. The first component contained the Chinese identity items and explained thirty percent of the variance whereas the second component contained the Canadian identity items and explained twenty-three percent. All items had primary loadings of greater than .40 on the expected component, and the two components were orthogonal, $r = .10$.

Self Identity

Unidimensional acculturation. The associations between unidimensional acculturation and both the ICS and the SCS were examined with linear regression. SL-ASIA scores were not associated with individualism-collectivism, but were associated with an independent self-construal, $\beta = .25, p < .001$ (see Table 3).

Bidimensional acculturation. The association between bidimensional acculturation and both the ICS and the SCS were assessed using blocked linear regression, entering main effects in the first block and the interaction term in the second block. The Chinese dimension was significantly associated with greater collectivism, $\beta = .18, p < .02$ and a more developed interdependent self, $\beta = .37, p < .001$ whereas the Canadian dimension predicted a more developed independent self, $\beta = .39, p < .001$. A statistically significant interaction was found for individualism-collectivism, $\beta = -.21, p < .01$ (see Table 3).

Adjustment

Unidimensional acculturation. The relationship between unidimensional acculturation and adjustment was explored using the multivariate General Linear Model with six adjustment measures as dependent variables and the SL-ASIA scale score as an independent dimensional predictor. Assimilation was associated with adjustment, $F(6,146) = 4.59, p < .001$, Wilks’ $\lambda = .84$. With regard to the scale measures of adjustment, high SL-ASIA scores significantly predicted
low scores on BDI, BSI-PST, and BSI-PSDI, $F_{s}(1,151) = 11.04, 17.30, \text{ and } 17.16, p < .001$ as well as higher social adjustment, $F(1,151) = 10.63, p < .001$ (see first panel of Table 4).

In order to control for the potential effects of neuroticism and extroversion, a similar GLM was run with the two personality traits as covariates. Although neuroticism was significantly associated with adjustment, $F(6,144) = 11.76, p < .001$, Wilks' $\lambda = .67$, the inclusion of this variable did not erase the effects of acculturation. Again, assimilation was significantly related to adjustment, $F(6,144) = 2.49, p < .01$, Wilks' $\lambda = .91$. High scores on the SL-ASIA significantly predicted low scores on BDI, BSI-PST and BSI-PSDI, $F_{s}(1,149) = 4.62, 7.50 \text{ and } 8.39, p < .04, .01, \text{ and } .01$, respectively, as well as higher social adjustment, $F(1,149) = 4.47, p < .04$ (see second panel of Table 4).

**Bidimensional acculturation.** The relationship between bidimensional acculturation and adjustment was explored using the multivariate General Linear Model with six adjustment measures as dependent variables and the two acculturation subscales as independent dimensional predictors. Interaction terms were also entered into the model but were dropped if they did not attain significance. Only the Canadian dimension predicted adjustment, $F(6,145) = 4.94, p < .001$, Wilks' $\lambda = .83$. With regard to the scale measures of adjustment, the Canadian dimension was a statistically significant univariate predictor of low scores on BDI, BSI-PST, and BSI-PSDI, $F_{s}(1,150) = 7.63, 18.45, \text{ and } 9.78, p < .02, .001, \text{ and } .01$, respectively. Similarly for the three objective adjustment categories, the Canadian dimension predicted higher social and academic adjustment, $F_{s}(1,150) = 16.19 \text{ and } 5.74, p < .001 \text{ and } .02$, respectively (see first panel of Table 4).

In order to control for the potential effects of neuroticism and extroversion, a similar GLM was run with the two personality traits as covariates. Although neuroticism was significantly associated with adjustment, $F(6,143) = 12.34, p < .001$, Wilks' $\lambda = .66$, the inclusion of this variable did not erase the effects of acculturation. Again, the Canadian dimension was
significant, $F(6, 143) = 3.13, p < .01$, Wilks' $\Lambda = .88$. The Canadian dimension was a statistically significant univariate predictor of low scores on BSI-PST and BSI-PSDI, $F_s(1, 148) = 9.16$ and $3.96$, $p < .01$ and .05, respectively, as well as higher social and academic adjustment, $F_s(1, 148) = 8.21$ and $4.53$, $p < .01$ and .04, respectively. Only the BDI no longer attained significance, $F(1, 148) = 2.92$, ns (see second panel of Table 4).

Relationship with Demographics

As in the first study, the correlations between the SL-ASIA, Chinese subscale, Canadian subscale, and the criterion variables of interest were calculated, partialing out percentage of time lived in Canada and generational status. Table 5 shows the correlation coefficients before and after the removal of shared variance with the demographic indicators. All of the significant effects for the bidimensional model and self-construal were retained, but correlations with BDI, BSI-PSDI, and academic adjustment were reduced to trends at $p < .10$. For the unidimensional model, all of the associations with self-construal were lost, as were correlations with social support and academic adjustment. The relationship between the unidimensional model and BDI was reduced to a trend at $p < .10$.

Discussion

An examination of the results from Study Two confirms that the bidimensional model is a valid and useful conceptualization of acculturation, and suggests that the Vancouver Index of Acculturation (VIA) is a promising instrument for measurement of the two proposed dimensions. The two subscales are reliable, and demonstrate the expected orthogonal relationship both in immigrant and second generation samples. In addition, strong correlations were observed between the Canadian subscale and demographic variables indicative of exposure to the new culture. For example, individuals who had received a greater proportion of their education in Canada were more likely to score highly on the Canadian subscale.

In contrast, the relationship between the Chinese subscale and these same demographic indicators did not yield significance. There are, however, good theoretical reasons
to expect a variable related to cultural maintenance to have little or no relationship to demographics. Whereas the sample varied widely in terms of exposure to Canadian culture, all of the participants have either been raised (i.e. spent their formative years) in the old culture or were raised by parents who were mostly socialized within the old culture. Thus while acquisition of a new culture would likely be dependent on extent of exposure, maintenance of an older culture may be better predicted by other factors, such as upbringing or extent of post-migration contact with individuals of the same ethnocultural heritage.

The two dimensions of acculturation were predictive of self-identity in ways that were, for the most part, theoretically expected. Specifically, the Chinese dimension was positively predictive of the interdependent self-construal, whereas the Canadian dimension similarly predicted an independent self-construal. Thus, as expected, being high on both forms of self-construal was associated with having a strong bicultural identity. In addition, the Chinese dimension positively predicted individualism-collectivism scores in the direction of the collectivism pole. The picture was more complicated for the Canadian dimension, which significantly interacted with individualism-collectivism. Nevertheless, the bidimensional model of acculturation provided considerably more information than did the unidimensional model, which suggested only a relationship between acculturation and an independent self-construal.

As with self-identity, the second study suggested that the two proposed dimensions of acculturation show different patterns of association with psychosocial adjustment. Whereas the Canadian component of the bidimensional model yielded significant effects in the direction of greater health, the Chinese component showed no association with adjustment. These findings would appear to be the opposite to those of Ward and Rana (in press), who found that the heritage-culture dimension was negatively related to depression. However, in their study, participants were embassy officials and international aid workers, who might be expected to show different patterns of acculturation and adjustment than immigrants making a permanent transition. Our findings are more in keeping with Nguyen, Messé, & Stollak (1999), who found
that the host-culture dimension was negatively related to psychosocial adjustment in Vietnamese immigrants to the United States.

In strictly numerical terms, the Canadian subscale had approximately the same amount of predictive power as did the unidimensional model. However, it is important to note that the adjustment findings using the unidimensional model lend themselves to three different interpretations, namely: (a) acquiring a new identity leads to greater adjustment; (b) losing the old identity leads to greater adjustment; and (c) acquiring a new identity while losing the old identity leads to greater adjustment. It is unclear which statement best characterizes the data, although the final option does fit best with a unidimensional conceptualization. In contrast, a bidimensional approach strongly suggests that the first option best fits our data. The bidimensional model is necessary to fully describe the relationship between acculturation and adjustment illustrated by these data. Note also that this association remained, albeit somewhat weakened, when we controlled for neuroticism and extroversion, suggesting that the relationship of acculturation and adjustment is not simply an artifact of preexisting personality factors.

Finally, as in the first study, shared variance with demographics did not account for all of the observed relationships between bidimensional acculturation and the criterion variables. However, whereas all of the associations with self-construal remained significant, several of the adjustment effects were reduced to non-significant trends. Nevertheless, it would seem that bidimensional acculturation, as measured by the VIA, is capturing important variance above and beyond demographics.

**General Discussion**

In this paper we set out to validate a bidimensional conceptualization of acculturation, and to compare this model with a unidimensional approach in the context of personality, self-construal, and adjustment. We believe that the results of both studies demonstrate that the
Unidimensional vs. Bidimensional Acculturation

bidimensional model constitutes a broader and more accurate framework for understanding acculturation. This conclusion was evident both in the internal properties of the model, and in its relationships with other variables of interest. Although the unidimensional model has the advantage of parsimony (Flannery, 1999), we feel that it offers an incomplete and often inaccurate rendering of our data. Our perspective in this regard is thus consistent both with Berry's arguments for two underlying dimensions of acculturation, and with Suinn's (personal communication, 1995) expansion of the SL-ASIA to include bidimensional items.

Earlier in this paper, we outlined four criteria to be met in order to conclude that the bidimensional model is superior to the unidimensional model. All of these criteria were met. The two dimensions (a) have adequate psychometric properties, (b) appear to be valid, (c) are independent, and (d) show distinctive and non-inverse patterns of correlations with variables of interest. Furthermore, the effect sizes yielded by the bidimensional model are equal to or greater than those of the unidimensional model for most of the criterion variables studied. In contrast, two of the main predictions of the unidimensional model, namely that two separately measured dimensions would be (a) highly negatively correlated and (b) inversely related to other variables, were not confirmed. Finally, as predicted, the unidimensional model was unable to detect effects in which the separately measured dimensions actually had the same direction of effect with the dependent variable.

Also of interest was the relationship between both models of acculturation and basic demographics. Our results demonstrated that the bidimensional model contributes important information about acculturation above and beyond demographic variables. In other words, the oldest and simplest methods of approximating acculturation are not telling the whole story. By establishing that the bidimensional model, as measured by the VIA, is measuring an acculturation construct that goes beyond age of immigration and length of residence, the use of this somewhat more complex methodology is justified.

Finally, the results of this paper suggest that the Vancouver Index of Acculturation is a
viable method of assessing the bidimensional model in Chinese-Canadians. One of the
critical advantages of this instrument is its length. Although a cited drawback of this approach
to measurement is the greater length and complexity of the instrument (Flannery, 1999), the VIA
demonstrates that the bidimensional model can be measured using as little as six pairs of
simple items tapping core aspects of cultural identity. In terms of simplicity, the method used in
the VIA may have an advantage of clarity over both unidimensional measures and four-strategy
measures. Both of the latter approaches necessarily contain a large number of items that
directly refer to both cultural groups, whereas each item on the VIA is limited to a single
concept.

There are several directions for future research that stem from the findings in this paper.
It will be important to study the bidimensional model in different ethnocultural groups, and to
decide whether or not it is the best way to conceptualize acculturation in each population.
Similarly, it will be useful to extend these findings beyond an undergraduate sample in order to
increase generalizability. One of the advantages in using the bidimensional approach to
measurement in initial studies of this type is that it is capable of revealing any advantage for the
unidimensional model by yielding strong negative correlations between the two dimensions. In
addition, the results contained in our paper highlight some of the effects that could potentially be
missed by sole reliance on the unidimensional model.

Each of the domains explored in this paper are also worthy of further investigation. For
example, we failed to find evidence that retention of a Chinese identity is associated with
emotional adjustment. Somewhat paradoxically, the Chinese dimension was associated with
personality dimensions associated with well-being. One possibility is that Chinese and Canadian
identities both contribute to well-being, but in doing so have different ramifications. For example,
developing a new identity may be associated with positive psychosocial functioning while
retaining one’s heritage identity may be connected with other advantages, such as more
positive family relationships. This hypothesis awaits investigation in a Chinese sample, although
support has been found in a study of Vietnamese children and adolescents living in Michigan (Nguyen et al., 1999). Having access to both identities may allow for functioning in a wider range of situations. Similarly, such self-complexity may facilitate coping during difficult times by allowing the individual access to more psychological resources, a hypothesis that seems to follow from Linville’s (1985, 1987) work on self-complexity. Such predictions await further investigation.

At the beginning of this paper, we suggested that acculturation could be conceptualized as involving changes in self-identity as a result of having to accommodate an old and a new culture, leading to fundamental alterations in the individual’s sense of self. We then demonstrated that people who are exposed to multiple cultures, either through birth or through heritage, can be seen as having, to varying degrees, two co-existing cultural self-identities. Furthermore, it does not seem to be the case that the old cultural identity diminishes while the new one grows; rather, the two identities are independent. Many individuals retain a strong old-culture identity even after many years of living and studying in North America, a trend which continues into the second generation. As a result, many bicultural individuals have a strong sense of being Chinese and a strong sense of being Canadian. When a person is exposed to two cultures, both of them can play an important role in shaping his or her sense of self.
### Table 1

Multiple regression results for personality

<table>
<thead>
<tr>
<th></th>
<th>Unidimensional Model</th>
<th>Bidimensional Model</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>SL-ASIA</td>
<td>Chinese</td>
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<tr>
<td></td>
<td>Beta</td>
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<tr>
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<tr>
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<td>Well-being</td>
<td>.10</td>
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* p < .05  ** p < .01
Table 2

**Relationship between acculturation and personality, controlling for demographics**

<table>
<thead>
<tr>
<th></th>
<th>Raw Correlation</th>
<th>Partialing out Demographics</th>
</tr>
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<td></td>
<td>Chinese</td>
<td>Canadian</td>
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<tr>
<td>Agreeableness</td>
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<tr>
<td>Conscientiousness</td>
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<td>.17*</td>
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<tr>
<td>Neuroticism</td>
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<td>-.17*</td>
</tr>
<tr>
<td>Openness to Exp.</td>
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<td>.27*</td>
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<tr>
<td>Ego Resilience</td>
<td>.01</td>
<td>.40*</td>
</tr>
<tr>
<td>Optimism</td>
<td>.11</td>
<td>.17*</td>
</tr>
<tr>
<td>Self Esteem</td>
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<td>.21*</td>
</tr>
</tbody>
</table>

* p < .05
Table 3

**Multiple regression results for self-construal**

<table>
<thead>
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<th>Unidimensional Model</th>
<th>Bidimensional Model</th>
<th></th>
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<tr>
<td></td>
<td>SL-ASIA</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Beta     F  R²</td>
<td>Beta     F  R²</td>
<td></td>
</tr>
<tr>
<td>ICS</td>
<td>-.10  1.65  .01</td>
<td>-.18  5.52*</td>
<td>-.08  1.14  .07</td>
</tr>
<tr>
<td>SCS - Ind. Self</td>
<td>.25  10.50**  .06</td>
<td>-.01  0.02</td>
<td>.39  27.38**  .16</td>
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<tr>
<td>SCS - Inter. Self</td>
<td>-.04  0.19  .00</td>
<td>.37  24.30**</td>
<td>.02  0.09  .15</td>
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</tbody>
</table>

*Note. ICS = Individualism-Collectivism Scale; SCS = Self-Construal Scale.*

* p < .05     ** p < .01
Table 4

General Linear Model results for psychosocial adjustment

<table>
<thead>
<tr>
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<th>Unidimensional Model</th>
<th>Bidimensional Model</th>
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</thead>
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<tr>
<td></td>
<td>F</td>
<td>( \eta^2 )</td>
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<tr>
<td>BDI</td>
<td>11.04**</td>
<td>.07</td>
</tr>
<tr>
<td>BSI – PST</td>
<td>17.30**</td>
<td>.10</td>
</tr>
<tr>
<td>BSI – PSDI</td>
<td>17.16**</td>
<td>.10</td>
</tr>
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<td>Health</td>
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<td>.00</td>
</tr>
<tr>
<td>Social Support</td>
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<td>.07</td>
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<tr>
<td>Academic Perf.</td>
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<td>.06</td>
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</table>

Panel Two: Controlling for Extraversion and Neuroticism

<table>
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<td>( \eta^2 )</td>
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<td>.03</td>
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<tr>
<td>BSI – PST</td>
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<td>.05</td>
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<tr>
<td>BSI – PSDI</td>
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<td>.05</td>
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<td>Health</td>
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<td>.00</td>
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<tr>
<td>Social Support</td>
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<td>.03</td>
</tr>
<tr>
<td>Academic Perf.</td>
<td>2.72</td>
<td>.02</td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory; BSI = Brief Symptom Inventory; PST = Positive Symptom Total; PSDI = Positive Symptoms Distress Index.

* \( p < .05 \)  ** \( p < .01 \)
### Table 5

**Relationship of acculturation with self-construal and adjustment**

<table>
<thead>
<tr>
<th></th>
<th>Raw Correlation</th>
<th>Partialing out Demographics</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Chinese</td>
<td>Canadian</td>
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<tr>
<td>ICS</td>
<td>-.16*</td>
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<td>SCS - Ind. Self</td>
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<td>SCS - Inter. Self</td>
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<tr>
<td>BDI</td>
<td>-.00</td>
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<td>BSI - PST</td>
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<td>BSI - PSDI</td>
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<tr>
<td>Health</td>
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</tr>
</tbody>
</table>

**Note.** BDI = Beck Depression Inventory; BSI = Brief Symptom Inventory; PST = Positive Symptom Total; PSDI = Positive Symptoms Distress Index.

* p < .05
References


Appendix

Vancouver Index of Acculturation

1. It is important for me to maintain/develop Chinese cultural traditions.

2. It is important for me to maintain/develop Canadian cultural traditions.

3. I would be willing to marry a Chinese person.

4. I would be willing to marry a Caucasian person.

5. I enjoy social activities with Chinese people.

6. I enjoy social activities with Caucasian people.

7. I am interested in having friends who are Chinese.

8. I am interested in having friends who are Caucasian.

9. Chinese values are important to me.

10. Western values are important to me.

11. I am comfortable interacting with Chinese people.

12. I am comfortable interacting with Caucasian people.