Ethnic Identity and Acculturation among Chinese Canadians

by

Ai-Lan Chia
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B. A., National Central University, Taiwan, R.O.C., 1992

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to the required standard

[redacted]

Dr. Catherine L. Costigan, Supervisor (Department of Psychology)

[redacted]

Dr. Marion Ehrenberg, Departmental Member (Department of Psychology)

[redacted]

Dr. Christopher Lalonde, Departmental Member (Department of Psychology)

[redacted]

Dr. Lily Dyson, External Examiner (Department of Educational Psychology & Leadership Studies)

Supervisor: Dr. Catherine L. Costigan

ABSTRACT

The purpose of the current study was to examine the nature of ethnic identity and acculturation, and to evaluate relations among ethnic identity, acculturation, cultural contact, and psychological well-being among Chinese Canadians. Two hundred and thirty-four university students with Chinese origins completed a variety of measures of ethnic identity and acculturation, including a) cognitive aspects: sense of common fate, insult and praise as Chinese and Canadian, and Chinese cultural values; b) affective aspects: Chinese and Canadian Affirmation and Belongingness, Chinese and Canadian Identity Achievement, and Collective Self-esteem as Chinese; and c) behavioural aspects: Chinese and Canadian behavioural orientations and practices. Participants also completed well-being measures of Self-Esteem, Depressive Symptoms, and Acculturative Stress.

A factor analysis revealed a multidimensional structure for ethnic identity. Specifically, three factors emerged, labelled: *Chinese-Internal Identity, Chinese-External Identity, and Ethnic Evaluation*. This third factor reflects the distinction between one's evaluation of the ethnic group and one's identification with that ethnic group. In a separate factor analysis, acculturation (*Canadian Identity*) was unidimensional.

Relations between the four factors and participants' contact with Chinese and Canadian culture were examined. Being foreign-born was associated with higher Chinese-External Identity, and residing in Canada longer was associated with higher Canadian Identity. Older chronological age, but not cultural contact, was related to higher Chinese-Internal Identity and Ethnic Evaluation.

A pattern-centred methodology was used to form subgroups of participants based on their identity and acculturation factor scores. Five distinctive cultural groups were discovered: *Dual Cultural Identity Group, Chinese Identity Group, Canadian Identity Group, Dual Cultural Identity- Low Chinese Behaviour Group, and Unidentified-High Chinese Behaviour Group*. Several of these five groups resembled Berry's four acculturation types. However, the final presentation of these five groups was more complex, due to the multidimensional perspectives of ethnic identity and acculturation, the assessment of acculturation as individuals' orientation towards Canadian culture, and the use of cluster analysis to form subgroups.

The relationship between cultural identity and psychological well-being was examined. Through the variable-centred approach, older age, being Canadian-born, having a higher Ethnic Evaluation, higher Chinese-External Identity, and higher Canadian Identity were associated with better well-being. Higher Chinese-Internal Identity was related to poorer well-being only, when it did not coexist with Ethnic Evaluation. When using the pattern-centred approach, only one between-group difference in the level of well-being was found. This may be because none of the groups were characterized exclusively by risk factors or exclusively by protective factors.

Lastly, the relationship between ethnic identity and acculturation, although conceptualized as orthogonal, varied depending on which factor was under review. Across the whole sample, Chinese-Internal Identity and Ethnic Evaluation were both orthogonal to Canadian Identity, whereas Chinese-External Identity was negatively related to Canadian Identity (i.e., bipolar). The relationship between ethnic identity and

acculturation was more complicated when it was examined within each of the five clusters. The results highlight the importance of understanding the uniqueness of subgroups formed within a relatively homogeneous sample.

Overall, the multidimensional assessment of ethnic identity and acculturation, the diverse relationships among multiple dimensions, and the discovery of subgroups with unique cultural identity profiles have significant implications for clinical practice (e.g., the influence of cultural identity on the expression of psychological difficulties), for intervention and prevention programming (e.g., the need to adapt programs based on the cultural identity profiles of recipients), and for cultural psychology research (e.g., considerations for selecting variable- and pattern-centred approaches depending on the research objectives).

Examiners:

[redacted]

Dr. Catherine L. Costigan, Supervisor (Department of Psychology)

[redacted]

Dr. Marion Ehrenberg, Departmental Member (Department of Psychology)

[redacted]

Dr. Christopher Lalonde, Departmental Member (Department of Psychology)

[redacted]

Dr. Lily Dyson, External Examiner (Department of Educational Psychology & Leadership Studies)

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CHAPTER 1: INTRODUCTION

The purpose of this thesis is to examine the relationship between ethnic identity and acculturation among young adults with Chinese ethnic origins. Identity formation is a central developmental task of adolescence (e.g., Marcia 1980), and issues regarding ethnic identity are particularly important for members of ethnic minority groups (Phinney & Alipuria, 1990; Roberts et al., 1999). For individuals with Chinese ethnic origins, the retention of their ethnic culture and their contact with the host culture are central issues. Despite the importance of the constructs of ethnic identity and acculturation for understanding the adjustment of ethnic minorities, there is little agreement about how these constructs should be defined and distinguished from one another.

In the current study, ethnic identity is conceptualized as an ethnic individual's identification with their ethnic culture. Some previous research has focused on the development of ethnic identity, outlining the relevant stages a person goes through to obtain an achieved ethnic identity (Sue & Sue, 1990). Others have focused on unique dimensions of ethnic identity for each ethnic group based on their particular socio-cultural features, such as the importance of cultural values and attitudes for the formation of Chinese ethnic identity (Ting-Toomey et al., 2000). In the current study, a dimensional approach, rather than a developmental one, is adopted to examine the ethnic identity of people with Chinese origins in Canada. This dimensional approach highlights the affective, cognitive, and behavioural components of ethnic identity.

However, the existing literature regarding the dimensions of ethnic identity is limited in three important ways. One limitation is a lack of consideration of the external context in the formation of an individual's ethnic identity (Phinney & Rosenthal, 1992).

This limitation can be addressed by incorporating social identity theory into a model of ethnic identity, which focuses on how the interaction of ethnic groups with the majority group influences ethnic identity development. A second limitation is a lack of consideration of the role of ethnic cultural values in the formation of an individual's ethnic identity (Phinney, 1990). A third limitation is a lack of a systematic paradigm to understand the structure of the constructs underlying ethnic identity and the relationships among dimensions of ethnic identity. Therefore, in order to understand ethnic identity fully, the researcher needs to examine the meaning of ethnic identity in relation to social identity and Chinese cultural values, and the relationships among specific dimensions.

Acculturation research, which has a separate tradition in psychology, focuses on the adaptation of immigrants to a host culture. During the past few decades in Canada, there have been dramatic changes in immigration trends. Whereas early immigrants were predominantly from European countries, recent immigrants are primarily from Asian countries. There have also been changes in how the processes and outcomes of acculturation are understood. In particular, an earlier emphasis on assimilation has shifted to a more recent emphasis on multi-dimensional and orthogonal models. In the current study, these newer models of acculturation are adopted. Specifically, acculturation is conceptualized as an ethnic individual's identification with the host culture. Like ethnic identity, it is considered multidimensional, with affective, cognitive, and behavioural components.

After examining the multidimensional nature of ethnic identity and acculturation, each construct is examined in relation to demographic variables. A "contact hypothesis"

is evaluated for understanding the relationship between cultural identity and the extent of cultural contact. Nativity status (foreign-born vs. Canadian-born), length of residence in Canada, and age of arrival in Canada are chosen as demographic variables to assess the amount of contact an individual has with Chinese and Canadian cultures. Therefore, we investigate whether the more contact an individual has with a specific cultural context, the more strongly he/she will identify with that culture and the more similar he/she will be to the members of that culture. We also examine if this "contact hypothesis" can be applied to different dimensions of ethnic identity and acculturation.

After examining the multidimensional nature and demographic correlates of ethnic identity and acculturation through a variable-centred approach, a pattern-centred approach will be used to identify clusters of participants based on the simultaneous consideration of multiple dimensions of ethnic identity and acculturation. Cluster analysis is used to identify subgroups, rather than subjectively forming groups by choosing specific cut-off scores on continuous measures. Four cluster groups are hypothesized based on Berry's (1980; 1993) seminal work in this area: Chinese Identity Group, Canadian Identity Group, Dual Cultural Identity Group, and Cultural-Unidentified Group. The profiles of participants in each cluster will be compared and contrasted in terms of demographic characteristics.

Next, the relationship between ethnic identity and acculturation will be examined. Earlier acculturation research treated ethnic identity and acculturation as two ends of a continuum. That is, an individual's level of acculturation was assessed by how much that individual lost features of and contact with his/her culture of origin. Therefore, ethnic

identity and acculturation were dependent on each other (as in a bipolar relationship). The current study adopts a more contemporary approach in viewing the relationship between ethnic identity and acculturation as orthogonal (i.e., independent of one another). This relationship will be investigated across the whole sample and within each cluster group.

Finally, ethnic identity and acculturation will be examined in relation to psychological well-being, which is assessed using measures of self-esteem, depressive symptoms, and acculturative stress. In the bipolar perspective that was adopted in earlier research, the ethnic culture was considered to be a trigger to problems a person might encounter during the process of acculturation. Consequently, high ethnic identity was thought to be associated with poorer well-being. In contrast, recent orthogonal approaches find that individuals identifying highly with both ethnic and host cultures show high levels of psychological well-being, and that individuals identifying with neither culture show the poorest well-being. There is no consistent finding regarding the well-being of people who identify with only one culture. The current study first will examine how each dimension of ethnic identity and acculturation contributes uniquely to the prediction of psychological well-being. Next, psychological well-being will be examined in relation to cluster membership when multiple dimensions of ethnic identity and acculturation are considered simultaneously.

CHAPTER 2: LITERATURE REVIEW

Ethnic Identity

Ethnic identity refers to "one's sense of belonging to an ethnic group and the part of one's thinking, perception, feelings, and behaviour that is due to ethnic group membership" (Rotheram & Phinney, 1987, p. 13). Although most scholars agree with this description, ethnic identity theories are different from one another. Some theories focus more on the developmental progression of achieving ethnic identity status (referred to as stage theories), while others focus on the structural components of ethnic identity (referred to as multi-dimensional theories).

There are limitations of applying a stage theory to examine the ethnic identity of people with Chinese origin (Sue & Sue, 1990). First, stage models assume that people all begin in the first stage, which is characterized by a negative view of one's own ethnic group based on interactions with an oppressive society. However, recent Asian immigrants pose a counter-example, as most of them tend to hold positive views of their own culture. In addition, in stage theories, the stages tend to be perceived as fixed and non-overlapping. In reality, people may present features of different stages at the same time. Furthermore, there is an implied value judgment that some cultural resolutions are better than others. However, in the existing literature, the relationship of ethnic identity and acculturation with individuals' adjustment or mental health outcome is somewhat inconsistent (Phinney, 1991; Rogler, Cortes, & Malgady, 1991). Finally, in stage theories, ethnic identity is conceived of as a unitary construct. However, many studies have found that different elements in ethnic identity function differently, suggesting that

ethnic identity is better understood and examined with a multidimensional approach (Kwan & Sodowsky, 1997; Laroche, Kim, Hui, & Joy, 1996; Rosenthal & Feldman, 1992; Verkuyten & Lay, 1998).

Another limitation of stage theories is related to the theoretical differences between ego identity and ethnic identity (Phinney & Rosenthal, 1992). Many ethnic identity stage-theory models are derived from the tradition of ego identity theory (e.g., Phinney, 1993), which tends to focus on intra-individual processes, rather than the influence of the external context in the formation of identity. However, the external context is very influential in ethnic identity formation (Roysircar-Sodowsky & Maestas, 2000). Furthermore, ego identity emphasizes a person's choice among identity alternatives and a person's commitment to the chosen identity. These assumptions may not apply equally well to ethnic identity, since ethnic identity is partially imposed by the external context (Gonzales & Cauce, 1995; Lee, 1999). Lastly, the process of ego identity formation is assumed to be equally comparable for everyone. However, different ethnic groups may encounter different experiences in the process of their ethnic identity formation (e.g., visible versus non-visible minority). Because of the limitations in most stage-theory models, a multidimensional approach is adopted in the current study to examine ethnic identity in people with Chinese origins.

Multidimensional Approach

In the existing literature, different terminologies are used to refer to different aspects of ethnic identity, such as components, aspects, or dimensions. The term "dimension" is used throughout the current study because it conveys a specific and

independent idea. If there are further differentiations within dimensions, the term "component" is used.

Previously Examined Dimensions of Ethnic Identity

Isajiw (1981, 1990), of the University of Toronto, described a two-dimensional phenomenon of ethnic identity and ethnic identity retention from a Canadian perspective. Retention of ethnic identity refers to the extent to which attributes identified as characteristic of specific ethnic groups are present in second or subsequent generations. Isajiw's ethnic identity model includes two dimensions: internal and external (Isajiw, 1981, 1990). The internal dimension can be further divided into three components: the affective, the cognitive, and the moral. The affective component refers to individuals' feelings of attachment to their ethnic group. The cognitive component refers to individuals' self-images and images of their ethnic group, and their knowledge of their ethnic group's values, heritage, and history. The moral component refers to their feelings of group obligation that accounts for the commitment they have to toward their group.

The external dimension of ethnic identity refers to observable social and cultural behaviours, which manifest themselves in at least five areas: (1) cultural behavioural patterns (such as using ethnic language, practicing ethnic traditions), (2) participating in ethnic personal networks (such as same-ethnic friends and families), (3) participating in ethnic institutional organizations (such as ethnic media), (4) participating in ethnic associational organizations (such as youth clubs), and (5) participating in functions sponsored by ethnic organizations (such as concerts, public lectures). Isajiw's research (1981) focused on examining generational differences in each component of the internal

and the external dimensions of ethnic identity across diverse ethnic groups, rather than investigating the dimensional structure of ethnic identity at one time for specific ethnic groups.

After reviewing the existing literature on the structure of ethnic identity, Elias and Blanton (1987) proposed that most models of ethnic identity fall into one of three general dimensions. First, the affective dimension focuses on individuals' feelings about the group, its members, and their attributes. Second, the cognitive dimension examines individuals' perception of the group and their attitudes toward belonging to it. Third, the behavioural dimension assesses the extent to which group membership is manifested in actual behaviours of the ethnic members, such as their preference for friends and language. Most models (or their measures) of ethnic identity focus on only one dimension, and very few focus on more than one (e.g., Phinney, 1992; Szapocznik, Scopetta, Kurtines, & Arandale, 1978).

Phinney's (1992) ethnic identity model includes four dimensions: self-identification, a sense of belonging, ethnic identity achievement, and ethnic behaviours and practice. Self-identification refers to the ethnic label that one uses for oneself. This is distinguished from an internal sense of ethnicity. An objective ethnic label is determined by parents' ethnic heritage. A sense of belonging includes feelings of ethnic pride, feeling good about one's ethnic background, being happy with one's ethnic group membership, and feeling a sense of belonging and attachment to the ethnic group. The concept of ethnic identity achievement is derived from ego identity theory, where identity achievement is the secure sense of self that is the optimal outcome of identity exploration

and commitment. Therefore, ethnic identity achievement in Phinney's model is conceptualized as a continuous phenomenon, ranging from a lack of exploration and commitment, to full exploration, to a secure sense of commitment. Finally, ethnic behaviours and practices include involvement in social activities with members of one's own group and participation in cultural traditions.

Limitations of Multidimensional Models

Role of the External Context. The first limitation of the multidimensional ethnic identity approach is the lack of consideration of the external context in the formation of one's ethnic identity. Existing multidimensional ethnic identity models can be improved by incorporating ideas derived from social identity theory (Tajfel, 1982). Social identity research focuses on the "minority" aspects of identity more than the "ethnic" aspects of identity (Verkuyten & Lay, 1998), while ethnic identity research tends to examine the ethnic aspects of identity with less attention paid to a person's social context and minority status (Phinney & Rosenthal, 1992). The external environment shapes the context in which ethnic identity formation takes place. For example, ethnic identity is a meaningful construct in a multicultural society, but loses its relevance in a monocultural society (Roysircar-Sodowsky & Maestas, 2000). A Chinese immigrant in Canada may perceive his/her Chinese identity differently than a Chinese individual in China where the majority of the population is Chinese.

Although the theories of social identity and ethnic identity both have strengths, most studies tend to choose one theory over the other, depending on the focus of their research. For instance, Gurin, Hurtado, and Peng (1994) used social identity instead of

ethnic identity because they were more interested in how ethnic individuals categorize themselves in a context where multiple social categorizations are available. Few studies examine ethnic identity by considering ethnic identity and social identity simultaneously. One of the exceptions was Ting-Toomey et al.'s study (2000) that examined ethnic identity, host cultural identity, and conflict styles in four US ethnic groups. They found that some aspects of social identity and ethnic identity clustered together, producing an overall dimension of "fringe" (a feeling of being on the fringe of ethnic identity). These results suggested that aspects of social identity are integral parts of ethnic identity.

In the current study, the external context is incorporated into an understanding of ethnic identity by examining how people feel about their ethnic group membership. Since the value status of most groups, especially ethnicity-based ones, is largely externally imposed, some individuals will find themselves identified with groups that are negatively valued relative to other groups by the society (Gonzales & Cauce, 1995). When the result of social comparison is negative, one of the strategies a person may apply for maintaining a positive self-concept is to strive to achieve a positive sense of distinctiveness by enhancing their position in the society (Tafjel & Turner, 1986). This presumed value and the feeling about one's group and group membership is referred to as "collective self-esteem" (Luhtanen & Crocker, 1992). Collective self-esteem contains four interrelated but distinct domains. The Private domain refers to people's evaluation of their own ethnic group. The Public domain refers to the perception of how other people evaluate one's ethnic group. The Member domain refers to people's judgments of how good they are as members of their ethnic group. Finally, the Identity domain is a

non-evaluative report of the importance of ethnic origins to an individual's overall self-concept.

Previous studies have found interesting relationships among these four domains, reflecting the interplay between the impact of the external context and the formation of ethnic identity. For example, the private evaluation by individuals of their ethnic group membership is considered essential in the development of ethnic identity. This private evaluation may also be influenced by individuals' perception of how other people evaluate their group. Verkuyten and Lay's (1998) study of Chinese youth living in the Netherlands found that collective self-esteem depended on the status of the ethnic group. Individuals who felt their group was highly regarded and whose self-concept was derived from their ethnic group membership reported higher collective self-esteem. In addition, when people's social group is not viewed positively by others, individuals with high private collective self-esteem are more likely to engage self-enhancing strategies, such as re-evaluating their group attributes in a more positive light. However, people with low private self-esteem are less likely to employ such strategies (Crocker & Luftanen, 1990).

Some findings suggest that the importance of social identity and collective self-esteem is stronger for people with more collectivistic values than for people with individualistic values (Luftanen & Crocker, 1992; Paez, Martinez-Taboada, Arrospide, Insua, & Ayestaran, 1998). Since Chinese culture is considered to be very collectivistic (Bond & Hwang, 1986), it is particularly important to examine ethnic identity in relation to the social context for people with Chinese origins residing in North America. Among Asian American college students, beliefs about how others evaluate the Asian American

social group are strongly related to private evaluations of the groups (Crocker, Luhtanen, Blaine, & Broadnax, 1994). In addition, reports of public evaluation and identity are positively related, which further indicates the importance of public evaluations to the formation of ethnic identity.

Role of Cultural Values. Another missing element in most models of ethnic identity is the role of cultural values. The general approach to studying ethnic identity described above can be applied across ethnically diverse groups, but misses features that may be particularly important for the formation of ethnic identity among specific ethnic groups. Phinney (1992) suggested that when a study is conducted with a specific ethnic group, ethnic-specific factors should be included in the assessment of ethnic identity as a supplement to more general ethnic identity. For example, political attitudes are central to understanding Black identity, language is central in Mexican American identity, and cultural attitudes and values play important roles when examining Asian-American identity (Phinney, 1990).

The essence of traditional Chinese cultural values is based on the philosophical traditions of Confucianism and Taoism (Kirkbride, Tang, & Westwood, 1991). Several themes have been considered as core features of Chinese values, such as the notion of harmony, collectivism, conformity to social norms, hierarchy and power-distance, familism, and interpersonal reciprocity (Bond & Hwang, 1986; Chan & Leong, 1994; Kim, Atkinson, & Yang, 1999; The Chinese Culture Connection, 1987). Collectivism refers to prioritizing the needs of the group over individuals' needs, and consists of factors such as interdependence, family integrity, and sociability (Triandis, 1995;

Triandis et al., 1986; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Chinese societies have frequently been described as "collectivist" (Kirkbride et al., 1991). The focus in these societies is on the maintenance of harmonious relationships among members, which is frequently contrasted with the greater individualism and egocentrism said to be characteristic of Euro-American culture (Hofstede, 1980).

Several empirical studies report an association between people's ethnic identity and their endorsement of collectivistic values. People with more collectivistic values support ethnic organizations, rely on ethnic communities to help them advance in society (Moghaddam, Taylor, & Lalonde, 1987), and practice more ethnic customs (Verkuyten & Kwa, 1996). People with more collectivistic values also tend to describe themselves spontaneously with ethnic terms (Triandis, McCusker, & Hui, 1990; Verkuyten & Kwa, 1996), and view their social identity as central to their self-definition (Oyserman, 1993). Ethnically-visible minorities endorse stronger ethnic identities and more collectivistic values than Euro-Americans (Gaines et al., 1997). Therefore, in the current study, Chinese cultural values are considered as the important ethnic-specific element of ethnic identity, supplementing a general multidimensional ethnic identity model.

Integration and Differentiation Among Dimensions. The above three multidimensional models of Phinney, Elias and Blanton, and Isajiw lack an explanatory paradigm to describe the structure of and the relationship among the dimensions of ethnic identity. They either emphasize a unitary construct of ethnic identity when multiple elements are included (Phinney, 1992), focus more on the relationship between individuals' identifications with their ethnic and the host culture (Elias & Blanton, 1987),

or examine one specific dimension extensively across generations (Isajiw, 1990). Some paradigms have been proposed to explain how these specific components of ethnic identity might be related to one another. For example, the dualism model suggests that the cognitive and affective components interact with each other; a causal model suggests that affective components are a response to an individuals' cognitive awareness and understanding of ethnic identity (Vaughan, 1987).

A few studies have examined the relationship between behavioural components and either affective or cognitive components of ethnic identity. Some studies find a positive relationship between the cognitive (self-identification) and the behavioural (ethnic behaviours) components (Der-Karabetian, 1980; Ullah, 1987), while others find little relationship between them (Hutnik, 1986). Fewer studies examine the relationship among the cognitive and affective components within the internal dimension of ethnic identity. One of the exceptions is Ullah's study (1987), in which a positive relationship between the cognitive (self-identification) and the affective (ethnic pride) components was found among Irish adolescents in England.

Many previous studies, when adopting a multidimensional conceptual model for ethnic identity, investigate the correlates of each dimension, without first empirically validating the structure of ethnic identity. In addition, due to the variety of measures used and the variety of domains assessed within ethnic identity, previous attempts to identify the core dimensions of ethnic identity have yielded discrepant results. Some studies find one single factor for ethnic identity (Garcia & Lega, 1979), or two factors (Constantinou & Harvey, 1985), or three or more factors (Garcia, 1982). This is

particularly problematic because the factorial structure varies depending on which group is under review (Rosenthal & Hrynevich, 1985). As a result, dimensions of ethnic identity are examined in an inconsistent manner. One goal of the current study is to empirically validate the proposed multidimensional conceptual model of ethnic identity prior to investigating the correlates of specific components of ethnic identity.

Ethnic Identity in the Current Study

In the current study, ethnic identity is conceptualized as an ethnic individual's identification toward their ethnic culture. In addition, ethnic identity is conceptualized as multidimensional, including internal and external dimensions. The internal dimension includes affective and cognitive components, which assesses a psychological identification with the Chinese culture, a sense of belongingness and affirmation toward the ethnic group, a sense of collective self-esteem as a Chinese, and an endorsement of Chinese cultural values. It is expected that the affective and cognitive components are closely related, producing an overall internal dimension of ethnic identity. In addition, the constructs of collective self-esteem and Chinese cultural values are expected to be subsumed under this internal dimension. The external dimension refers to the behavioural components of ethnic identity, such as how much a person practices Chinese cultural behaviours. It is expected that the internal dimension differs substantially from the external dimension of ethnic identity. Table 1 presents for a list of these components of ethnic identity and exemplars of each. The above approach will help advance our understanding of the interrelationships among multiple dimensions of ethnic identity when they are understood and assessed systematically (rather than selectively).

Table 1

Dimensions of Ethnic Identity

Dimension		Sample Items[a]
Internal	Affective	1. *Ethnic Affirmation & Belongingness, and Ethnic Identity Achievement:* I feel a strong attachment towards my own ethnic group (Phinney, 1992). 2. *Collective Self-Esteem*: Overall, my ethnic group is considered good by others (Luhtanen & Crocker, 1992).
	Cognitive	1. *Chinese Identity:* Being Chinese plays an important part in my life (Zak, 1973). 2. *Chinese Cultural Values:* It is my duty to take care of my family even when I have to sacrifice what I want (The Chinese Culture Connection, 1987).
External	Behavioural	*Chinese Behavioural Practices & Customs:* I eat Chinese food (Cuéllar, Arnold, & Maldonado, 1995).

Note. [a]Samples are selected from questionnaire items assessing each component. Complete items are presented in Table 4 List of Measures.

Acculturation

Acculturation is generally viewed as a process of change that occurs as a consequence of continuous, first-hand contact between two or more distinct cultural groups. Early acculturation research (late 1970s to early 1980s) focused on the effects of exposure to a host culture on behaviours, especially in the domain of language. In addition, early research focused on how ethnic groups lose their ties with their culture of origin, leading to the gain of the host culture. In more recent acculturation research (from 1987 to the present), the relationship between the ethnic culture and the host culture is considered orthogonal, and psychological and value-oriented dimensions of acculturation are examined in addition to behavioural dimensions (Roysircar-Sodowsky & Maestas, 2000).

Multidimensional Model

As with ethnic identity, acculturation is often conceptualized as multidimensional. A key focus of acculturation research involves identifying these multiple dimensions, and examining which dimensions change due to contact between ethnic and host cultures.

Previously Examined Dimensions of Acculturation

Padilla and his colleagues (1980) were some of the early scholars to identify specific dimensions of acculturation, including language familiarity, cultural heritage, ethnic pride and identity, interethnic distance, and interethnic interaction. As a result, people's preference for their ethnic culture, but not the host culture, provided a measure of acculturation. Their research inspired other scholars to search for a multidimensional understanding of acculturation. Furthermore, their way of understanding acculturation

illustrates the nature of a bipolar model that is seen in early research, which equates the loss of the ethnic culture with the gain of the host culture.

Based on a review of the acculturation literature, LaFromboise, Coleman, and Gerton (1993) identified six dimensions in which an individual needs to develop competence in order to effectively live in two cultures. The first dimension is the knowledge of each culture's beliefs and values, which includes their histories, institutions, rituals and everyday practices. The second dimension is role repertoire, which refers to the range of culturally or situationally appropriate behaviours an individual develops. The third dimension is communication ability, which refers to an individual's effectiveness in communicating ideas and feelings to members of a given culture, both verbally and nonverbally. The fourth dimension is a sense of being grounded, which refers to one's skills in recruiting and using the external support systems that exist in both cultures. The fifth dimension is positive attitudes toward both majority and minority groups. The sixth dimension is bicultural efficacy, which is a belief that one can live effectively within two groups without compromising one's sense of cultural identity.

Szapocznik, Kurtines, and Fernandez (1980) developed a model of acculturation for Hispanic-American youth that included behavioural and value dimensions. This model suggests that people learn the behaviours of the host culture in order to survive before they acquire the values of the host culture. A similar dimensional approach was proposed by Marin (1992) in which acculturation is considered as a process of both attitudinal and behavioural change. Marin further suggested that these changes occur at

three levels: the superficial, the intermediate, and the significant. The superficial level involves learning and forgetting historical facts and traditions, and changing food preferences. The intermediate level involves changes in more central behaviours such as language use and preference, media, and friendship choices. The level of significant change involves changes in beliefs, values, and norms.

Limitations of Multidimensional Models

Internal Aspects of Acculturation. The process of acculturation is often described within a stress-coping paradigm, in which experiences associated with immigration are evaluated as stressors which may be dealt with by employing various coping strategies. However, this stress-coping paradigm often focuses on how individuals meet the external demands of different situations, rather than on how long-lasting changes in identity occur (Schonpflug, 1996). Although Berry suggested a further way of understanding the internal (psychological) aspects of acculturation, such as cultural learning, he did not further pursue this line of thinking. The internal aspects of acculturation, such as a sense of emotional attachment and connectedness to different cultures, are not discussed as often as the external (behavioural) aspects of acculturation (Tropp, Erkut, Coll, Alarcon, & Garcia, 1999). To address this limitation, the internal aspects of acculturation, characterized by affective and cognitive components, are included in the current study.

Value Acculturation. The second limitation of previous multidimensional models is that when values and behaviours are treated as two major dimensions in the acculturation process, the "value" dimension usually refers to the values of the ethnic culture, rather than the values of the host culture. This limitation is likely related to the

bipolar perspective in early acculturation research, in which the lack of endorsement of ethnic cultural values was regarded as an index of value acculturation into the host culture. In addition, this may also be related to the challenges of assessing the host culture's values (Phinney, 1990; Roysircar-Sodowsky & Maestas, 2000). Unfortunately, it is difficult to find adequate and psychometrically sound measures of Canadian cultural values. Ideally, however, value acculturation is assessed as the adoption of the host culture's values rather than the less of the ethnic culture's values.

Our best measure of Canadian cultural values is derived from research on individualistic values. North America and European countries are considered examples of individualistic cultures (Ting-Toomey et al., 2000). Individualistic cultures emphasize the importance of individual identity over group identity, individual rights over group rights, and individual interests over relational or group interests. Individualism consists of factors like self-reliance, competition, emotional distance from in-groups, and hedonism (Triandis et al., 1986; Triandis et al., 1988). Antecedents of individualism include having a frontier, a substantial number of immigrants, and rapid social and geographical mobility, in a culturally complex context. Canada has all these qualities and is often considered an individualistic country (Triandis et al., 1988). Therefore, in the current study, the extent to which people endorse individualistic values is used to assess how much they endorse host cultural values.

Bipolar Perspective of Acculturation. In addition to the dimensional features of acculturation as reviewed above, another focal point in acculturation research concerns the relationship between people's identifications toward their ethnic and host cultures. In

early acculturation research, the extent to which individuals lose their ethnic identification was assessed as an indicator of their level of acculturation. More recent studies have adopted an orthogonal perspective by examining individuals' orientations toward the ethnic culture and the host culture as independent constructs. Some of these studies applied both bipolar and orthogonal perspectives to the same dataset in order to illustrate the significance of applying an orthogonal model to understand ethnic identity and acculturation (Abe-Kim, Okazaki, & Goto, 2001; Ryder, Alden, & Paulaus, 2000).

Although this orthogonal conceptual model has been widely adopted by recent acculturation research, the measurement approaches these studies adopt do not correspond with their conceptual model. For example, some studies (e.g., Der-Karabetian & Ruiz, 1997) use a bipolar scale (i.e., items are endorsed where the ethnic and host cultures are at two ends of the response categories) in combination with an orthogonal scale (i.e., an individual endorse items for ethnic and host cultures separately), despite the fact that ethnic identity and acculturation were conceptualized as orthogonal.

The bipolar perspective is a major limitation of acculturation research, because it confounds acculturation into host culture with the loss of the ethnic culture. This limitation is not only present in how ethnic identity and acculturation are conceptualized, but also in how they are measured. In order to avoid these confounds, in the current study, acculturation is conceptualized and assessed with regard to individuals' orientation towards the host culture exclusively, with no reference to their orientation towards their ethnic culture.

Acculturation in the Current Study

In the current study, acculturation refers to an individual's identification with the Canadian culture. In addition, acculturation is conceptualized as multidimensional, including internal and external dimensions. In fact, acculturation is conceptualized in a parallel fashion to ethnic identity, except that the culture of reference is toward Canadian culture, rather than Chinese culture. The internal dimension includes affective and cognitive components, which assesses a psychological identification with the Canadian culture, a sense of belongingness and affirmation toward the Canadian society, and an endorsement of Canadian cultural values. It is expected that the affective and cognitive components are closely related, producing an overall internal dimension of acculturation. The external dimension refers to the behavioural components of acculturation, assessing how much a person practices Canadian cultural behaviours. It is expected that the external dimension differs significantly from the internal dimension of acculturation. Table 2 presents a list of these components of acculturation and exemplars of each.

Relationship between Ethnic Identity and Acculturation

Bipolar Perspective

As reviewed above, the bipolar perspective puts the ethnic culture and the host culture at opposite ends of a continuum of an individual's identification. This perspective assumes that movement from identifying with the ethnic culture toward identifying with the host culture is desirable and inevitable. Many existing acculturation and assimilation models represent this bipolar perspective. For instance, Gordon (1978) outlined seven stages of acculturation from the least assimilated to complete assimilation into the host culture with the total loss of ethnic culture.

Table 2

Dimensions of Acculturation

	Dimension	Sample Items[a]
Internal	Affective	*Canadian Affirmation & Belongingness, and Canadian Identity Achievement:* I feel a strong attachment towards Canada (Phinney, 1992).
	Cognitive	1. *Canadian Identity:* Being Canadian plays an important part in my life (Zak, 1973). 2. *Canadian Cultural Values (Individualism):* In the long run, the only person you can count on is yourself (Triandis et al., 1986; 1988).
External	Behavioural	*Canadian Behavioural Practices & Customs:* I eat Canadian food (Cuéllar, Arnold, & Maldonado, 1995).

Note. [a]Samples are selected from questionnaire items assessing each component. Complete items are presented in Table 4 List of Measures.

Several major dangers are associated with the assimilation model. For example, assimilation may not be a plausible option of acculturation for everyone. Some individuals may be rejected by members of the host culture, or they may be rejected by members of the ethnic culture. In addition, individuals may experience excessive stress while attempting to learn new behaviours and shed the ineffectual behaviours associated with the ethnic culture (LaFromboise et al., 1993). Total assimilation with a loss of the ethnic culture is neither desirable nor possible for Asian Americans (Sue & Sue, 1990). For people with Chinese origins in Canada, assimilation is particularly difficult due to the disparity between the Chinese cultural values and Canadian cultural values (Berry, Kim, Minde, & Mok, 1987) and due to their ethnic visibility.

The difference between bipolar assimilation models and other non-orthogonal acculturation models is the explicit acknowledgement of the value of the ethnic culture in acculturation models. However, these models are similar in their implicit assumption that the most desirable outcome is that the ethnic members relinquish their ethnic culture. In a meeting of minority researchers held by the National Institute on Drug Abuse in 1988, the use of the term "acculturated" was rejected because it carried residual meaning derived from assimilation models (Oetting & Beauvais, 1991). In addition, both assimilation and non-orthogonal acculturation models apply an all-or-nothing framework to viewing cultural identifications, rather than allowing individuals to have different degrees of identification with both cultures.

Orthogonal Perspective

The orthogonal perspective assumes an independent and non-hierarchical

relationship between a person's identification with the ethnic and host cultures. That is, for people living in two cultures, it is possible to have a sense of belonging in two cultures without compromising one's sense of ethnic cultural identity. In addition, individuals can alter behaviours to fit a particular social context, and can choose the degree and manner to which they would affiliate with either two cultures (LaFromboise et al., 1993; Oetting & Beauvais, 1991).

Orthogonal, bi-dimensional, alternation, and bi-directional are commonly used terms to represent such a perspective, and the term "orthogonal" is used throughout this study. This approach has gained wide acceptance recently, although it originated in the 1970s. Zak (1973) was the first to test the hypothesis that ethnic and host cultural identities are not placed at extreme ends of a bipolar dimension, but rather are orthogonal and independent of each other. The orthogonal model has been supported by several studies with different ethnic groups, such as Jewish-Americans (Elias & Blanton, 1987; Zak, 1973), Armenian-Americans (Der-Karabetian, 1980), Mexican American (Der-Karabetian & Ruiz, 1997; Garcia, 1982), Native Americans (Moran, Fleming, Somervell, & Manson, 1999), and Indians in Britain (Hutnik, 1986).

Roysircar-Sodowsky and Maestas (2000) provide a similar conceptual framework in which ethnic identity is seen as a response to one's ethnic group, while acculturation adaptation is seen as a response to the dominant group. Furthermore, they propose that acculturation issues are more relevant to first-generation immigrants who go through the continuous processes of adapting to the mainstream culture. Ethnic identity issues can be considered a reverse acculturation to one's original culture, and are more relevant to

North America-born minorities.

Probably the most widely cited orthogonal model of acculturation is Berry's. This model describes individuals' identifications with both ethnic and host cultures based on their socialization experiences (Berry, 1980; 1993). The socialization process includes both enculturation and acculturation experiences. While the former refers to the process of being socialized to conform to the standards of one's ethnic group, the latter refers to the process of adapting oneself to the broader social surroundings. Familial and non-familial socialization agents contribute to the processes of both enculturation and acculturation in minority individuals, which in turn contributes to their ethnic and host cultural identifications.

According to Berry's (1980) measurement approach, people are asked two questions: (1) "Is it considered to be of value to maintain cultural identity and characteristics?" and (2) "Is it considered to be of value to maintain relationships with other groups?" These two questions yield four acculturation strategies: integration, assimilation, separation, and marginalization. The *integration* strategy reflects a desire to maintain key features of the immigrant ethnic identity while adopting aspects of the host culture. Immigrants who adopt the *assimilation* strategy essentially relinquish their own ethnic identity for the sake of adopting the cultural identity of the host majority. The *separation* strategy is characterized by the desire to maintain all features of the immigrant ethnic identity while rejecting relationships with members of the host culture. Finally, *marginalization* characterizes individuals who reject both their own and the host culture, therefore losing contact with both their ethnic culture and that of the host culture.

Berry and his colleagues conducted numerous studies to assess acculturation strategies and their correlates among immigrant groups in North America. Studies have been conducted with Portuguese, Hungarian, and Korean first-generation immigrants in Canada (Berry, Kim, Power, Young, & Bujaki, 1989; Kim & Berry, 1986), Indian immigrants in the USA (Berry & Krishnan, 1992), and Australian aboriginal individuals (Berry, 1970). Furthermore, many other researchers have adopted Berry's categorization model to examine the acculturation strategies of people with Chinese or Asian origins in western countries (Eyou, Adair, & Dixon, 2000; Lay & Verkuyten, 1999; Liu, Pope-Davis, Nevitt, & Toporek, 1999; Noels, Pon, & Clements, 1996). Overall, these studies have supported the validity of the four acculturation strategies.

Although Berry's schema is one of the most widely adopted in acculturation research, there are several limitations found across studies using his schema. First, Berry originally proposed a conceptual model which was not accompanied by a comprehensive and corresponding measurement paradigm. It is clear that the above two questions are quite limited in capturing the richness within the processes of ethnic identity and acculturation. As a result, many studies used their own measures to capture individual's endorsements of ethnic and host cultures (e.g., Liem, Lim, & Liem, 2000), but Berry's categorization schema was still used for describing the results. Because of this inconsistency in measurement, it is not clear how well the findings across studies can be integrated.

Second, Berry's four-category model did not resolve the confusion about the differences between acculturation and ethnic identity. Although enculturation and

acculturation are described as two related and independent socialization processes in his conceptual model, other studies adopting his four-category model did not consistently apply a measurement approach in accordance with this orthogonal conceptual model. For example, some studies used a bipolar measurement approach (e.g., using loss of the ethnic culture as an indicator of level of acculturation) to classify participants into Berry's four acculturation strategies, without discussing the orthogonal relationship between ethnic identity and acculturation in Berry's model (e.g., Pawliuk et al., 1996). Other studies, although conceptualizing ethnic identity and acculturation as orthogonal, used bipolar scales (e.g., putting ethnic culture and host culture as two ends of continuum in the response scales) in order to assess the orthogonal constructs (e.g., Torres, 1999). These studies clearly illustrate a gap between the conceptual model and the measurement approach that is commonly seen in acculturation research.

A third limitation of Berry's model is that, in the existing literature, multiple terms are used to describe people who highly identify with both ethnic and host cultures. Specifically, people identifying strongly with both ethnic and host cultures are often labelled as "biculturals" or "integrated." These terms are different from what is implied in the orthogonal model. What makes a bicultural identity conceptually different from an orthogonal identity is that the former emphasizes the *integration* between ethnic and host cultures with a unitary structure in one's overall identification. However, many bicultural individuals report that the two cultural frames *take turns* in guiding their thoughts and behaviours (Phinney & Devich-Navarro, 1997), which is more consistent with an orthogonal understanding of identity. Individuals can acquire more than one cultural

meaning system, even if these systems contain conflicting theories. These internalized cultural frames are not necessarily one integrated piece (Hong, Morris, Chiu, & Benet-Martinez, 2000). From a research perspective, it is important to examine ethnic and host cultural identifications independently, allowing the investigator to clarify which dependent variables are a function of ethnic identification alone, of host identification alone, or a function of both.

Finally, the bicultural perspective usually applies an all-or-nothing method of categorization, rather than utilizing a continuous measure of individuals' identifications with their ethnic and the host cultures. This is a methodological issue, rather than a conceptual issue. Typically researchers use a cut-off score on continuous measures to group individuals into "high" and "low" categories. Individuals who score in the "high" category for both ethnic and host identities are labelled bicultural. However, this ignores the fact that ethnic minorities may show different degrees of immersion into ethnic and host cultures (Sanchez & Fernandez, 1993). Alternative methods that are more consistent with orthogonal model are to leave measures of ethnic and host identifications as separate continuous variables, or to submit these separate continuous variables to a cluster analysis in order to form acculturation groups. These methods are both improvements because they allow individuals to have varied degrees of immersion into either ethnic or host cultures.

Relationship between Ethnic Identity and Acculturation in the Current Study

In the current study, ethnic identity and acculturation are both conceptualized as multidimensional, with affective, cognitive, and behavioural components. Furthermore,

their relationship is conceptualized as orthogonal. Therefore, measures of ethnic identity and host culture identity (acculturation) are expected to be uncorrelated. In addition, consistent with Berry's model, we expect to find four types of cultural identifications: a Chinese identity group, a Canadian identity group, a dual cultural identity group, and a culturally unidentified group. In traditional acculturation research, the term "marginalization" is used more often to refer to people who do not strongly identify with either culture. We chose the term "un-identified" because this term does not imply that individuals are pushed away to become marginalized, and instead reflects a more neutral stance. Figure 1 presents for a graph of these four types of cultural identifications.

Correlates of Cultural Identifications

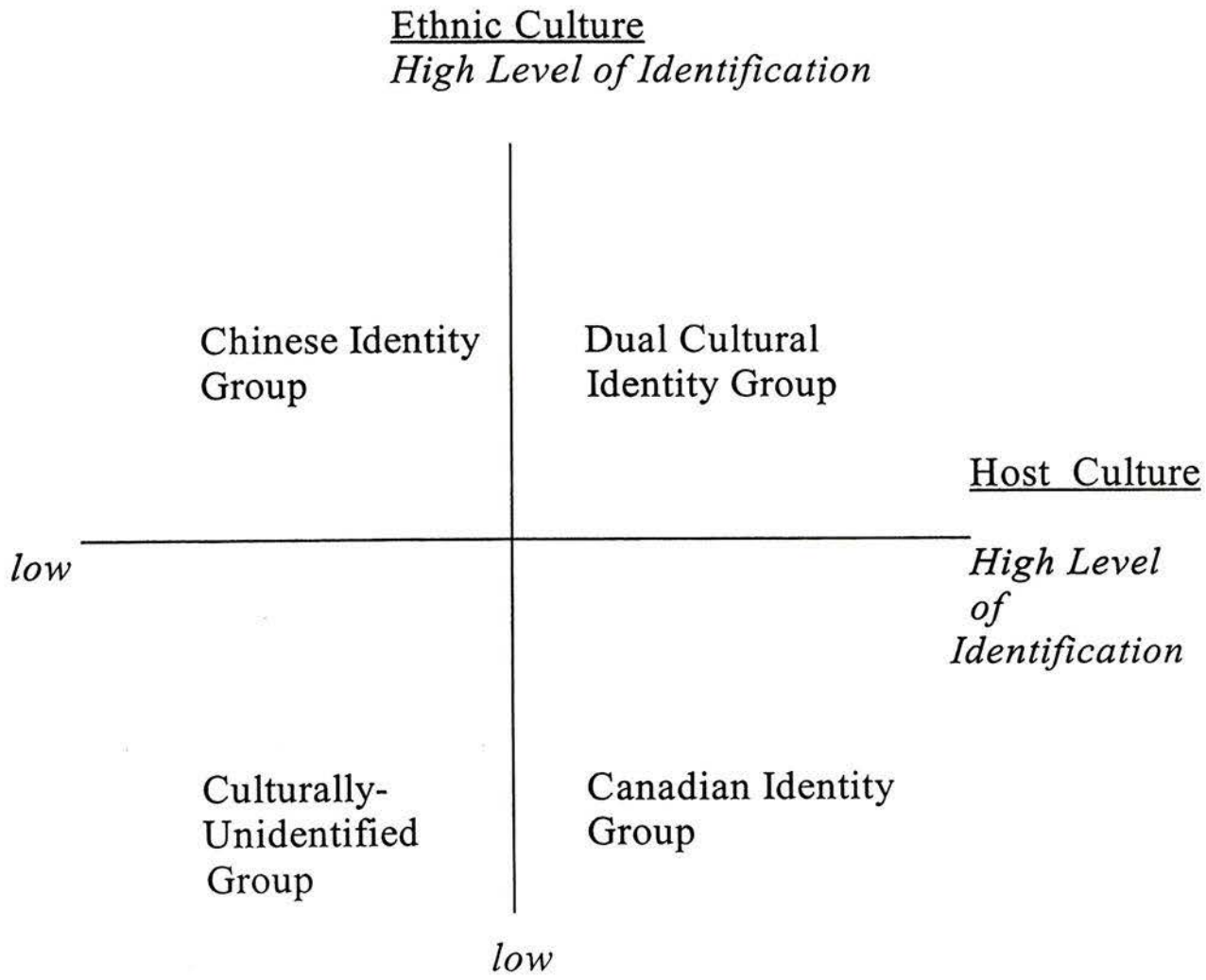
Contact Hypotheses

Nativity Status and Length of Residence

In studying ethnic identity and acculturation, the generational status of ethnic minority members is almost always examined. In addition, nativity, place of birth, and length of residence are also sometimes evaluated. Examining the relationship of these factors to individuals' ethnic identity and acculturation allows for a test of the contact hypothesis. The contact hypothesis states that the more contact an individual has with a specific cultural context, the more strongly he/she will identify with that culture and the more similar he/she will be to the members of that culture (Gurin et al., 1994). Foreign-born immigrants have the least amount of contact with the host culture, and have the most contact with their ethnic culture, compared with native-born generations (born into the host culture). According to the contact hypothesis, foreign-born immigrants should

Figure 1

Orthogonal Approach to Examining Ethnic Identity and Acculturation



identify more strongly with their ethnic culture than later generations, while the later generations should identify more strongly with the host culture.

Most past research supports this contact hypothesis. Foreign-born immigrants identify more strongly with their ethnic culture than native-born generations (Constantinou & Harvey, 1985; Cuéllar, Arnold, & Maldonado, 1995; Lalonde & Cameron, 1993; Masuda, Hasegewa, & Matsumoto, 1973; Rosenthal & Feldman, 1992; Sanchez & Fernandez, 1993). Similarly, native-born generations show higher levels of acculturation than their foreign-born counterparts (Cuéllar et al., 1995; Mendoza, 1989; Sodowsky, Lai, & Plake, 1991). A longer length of residence in the host country is also associated with a higher level of acculturation among immigrants (Lalonde & Cameron, 1993; Liem et al., 2000; Suinn, Richard-Figueroa, Lew, & Vigil, 1987). However, a few studies contradict the above pattern of the relationships between cultural contact and cultural identifications. Some find no generational differences in ethnic identification or acculturation level, and others find no relationship between the length of residence in the host culture and the identification with the host culture (Sodowsky & Carey, 1988; Sodowsky et al., 1991; Wooden, Leon, & Toshima, 1988).

These mixed findings may be related to the fact that ethnic identity and acculturation are often not examined or conceptualized as two independent processes. For example, lower levels of ethnic identity are attributed to more contact with the host culture, which is treated as an indicator of high levels of acculturation (e.g., Masuda et al., 1973). When ethnic identity and acculturation are conceptualized as orthogonal and assessed independently, findings regarding generational effects become more

complicated. For instance, consistent with the contact hypotheses, Cuéllar et al. (1995) found that ethnic identifications decreased and acculturation levels increased with increasing generational status. Alternatively, in another study, generational status was significantly related to identification with North American culture, but was not related to identification with Asian culture (Lew, Allen, Papouchis, & Ritzler, 1998).

Another possible factor contributing to these mixed findings may be related to the multidimensional nature of both ethnic identity and acculturation. Rosenthal and Feldman (1992) found that, although there was a decrease of ethnic identification among their participants, this decrease was most evident in the areas of ethnic behaviours and knowledge, but not in the importance of ethnic identity. Other studies have found a positive relationship between length of residence and traditional family values (Wolfgang & Josefowitz, 1978). Similarly, behavioural acculturation (adopting the behaviours of the host culture) is more evident than value acculturation (adopting the values of the host culture) (Kim et al., 1999; Szapocznik et al., 1978).

Age of Arrival

Most studies group first generation immigrants together when generational effects are examined. Because of the importance of age of arrival in the host culture to individuals' ethnic identity and acculturation, Rumbaut (1997) in the 1970s coined the term "1.5" generation, which best applies to individuals who immigrated after reaching school age but before reaching puberty (roughly ages 6-12). Among foreign-born immigrants, the age of arrival in the host culture is often examined in relation to second-language acquisition and ethnic language maintenance, rather than in relation to ethnic

identity and acculturation.

However, past research has shown that the age of arrival influences individuals' ethnic identity and level of acculturation. Some studies find that age of arrival is negatively correlated with level of acculturation (Iwamasa, 1996). Early-comers (usually before the age of 12) are similar to native-born generations in their ethnic identity and level of acculturation. In contrast, late-comers experience higher levels of acculturative stress than early comers or native-born generations (Fuertes & Westbrook, 1996; Mena, Padilla, & Maldonado, 1987). Other evidence has shown that early-comers show higher levels of acculturation than latecomers, but that their identifications with their ethnic culture are similar to the late-comers (Richman, Gaviria, Flaherty, Birz, & Wintrob, 1987).

These results suggest that the age of individuals' contact with a specific culture is likely related to the strength of their identification with that culture. A 20-year-old foreign-born Chinese immigrant, arriving in Canada at the age of 12, may have a different make-up of cultural identifications compared to a 28-year-old foreign-born Chinese immigrant arriving in Canada at the age of 20, even though they both have lived in Canada for eight years. Therefore, in addition to the nativity status (foreign-born vs. Canadian-born) and the length of residence, age of arrival should also be examined as a marker of cultural contact. That is, in addition to the "amount" of contact with Chinese and Canadian cultures, the chronological age when contact with Chinese culture ceased and contact with Canadian culture began is investigated in relation to cultural identifications.

In summary, the contact hypothesis is examined between individuals' contact with Chinese and Canadian cultures and their levels of ethnic identity and acculturation. When ethnic identity and acculturation are examined as continuous measures, foreign-born immigrants are expected to have a higher level of ethnic identity and lower level of acculturation than Canadian-born Chinese. In addition, the longer length of residence in Canada and earlier age of arrival in Canada is expected to be associated with a lower level of ethnic identity and a higher level of acculturation. When ethnic identity and acculturation are examined simultaneously in clusters, foreign-born and late-arriving Chinese are expected to fall into clusters characterized by strong identifications with Chinese culture only or with both Chinese and Canadian cultures. Canadian-born and early-arriving Chinese are expected to fall into clusters characterized with strong identifications by Canadian culture or by both Chinese and Canadian cultures. People in clusters characterized by strong identifications with Canadian culture and with both Chinese and Canadian cultures are expected to have longer length of residence than participants in clusters characterized by strong identifications with Chinese culture only.

Psychological Well-Being

Psychological Well-Being and Cultural Identifications

Another correlate of cultural identifications examined in the current study is psychological well-being. Within the bipolar perspective reviewed earlier, the ethnic culture is considered to be a trigger to problems a person might encounter when moving from their ethnic culture to the host culture (Oetting & Beauvais, 1991). In this view, the process of acculturation is inherently stressful (Berry & Annis, 1974). A person making

the transition from one culture to another is caught between two cultures, losing strength derived from original culture and unable to utilize the assets of the newly acquired culture before the point of total assimilation. Stress arising from the process of acculturation has been linked to overall mental health (Szapocznik et al., 1978), to self-esteem (Padilla, Wagatsuma & Lindholm, 1985), and to cultural conflict (Kwan & Sodowsky, 1997). Recently, however, the assumption of inevitable cultural conflict, and thus poor adjustment, has been challenged. For some individuals, successful integration of the ethnic and host cultures can be achieved. These individuals show a higher level of psychological flexibility that enables them to adapt to different demands, and therefore avoid cultural conflict (Rogler et al., 1991; Rosenthal, 1984).

When individuals' psychological well-being is examined by considering both ethnic identity and acculturation in Berry's model, a majority of studies find a relatively consistent pattern between acculturation strategies and well-being. Integrated individuals, who are acculturated in both ethnic and host cultures, show fewer psychological problems than individuals who are acculturated into the ethnic or the host cultures only (Berry, 1980; Berry et al., 1987; Donna & Berry, 1994; Eyou et al., 2000; Sanchez & Fernandez, 1993; Szapocznik & Kurtines, 1980). Assimilated individuals score higher in self-esteem and report less stress than marginalized individuals (Berry et al., 1987; Pawliuk et al., 1996). Individuals separated from the host culture experience higher stress and suffer more adjustment problems than those who were assimilated (Padilla et al., 1985; Moran et al., 1999; Szapocznik & Kurtines, 1980). Overall, marginalized individuals tend to have the poorest psychological outcomes (Berry, 1990;

Moran et al., 1999; Oetting & Beauvais, 1991; Phinney, Lochner, & Murphy, 1990; Sam, 2000; Verkuyten & Kwa, 1996). However, a few other studies report contradictory results. For example, some studies find that identifying strongly with the ethnic culture is positively associated with self-esteem (Phinney & Chavira, 1992), and that more acculturated individuals report higher rates of psychopathology (Burnam, Hough, Karno, Escobar, & Telles, 1987). Others find no relationship between ethnic identity and indicators of psychological well-being, including self-esteem (Rosenthal & Cichello, 1986; Zak, 1976).

One reason for the mixed results may be related to the confusion about the relationship between ethnic identity and acculturation. As discussed before, earlier acculturation research adopted a bipolar perspective to conceptualize and measure acculturation. Therefore, how much individuals lose their culture of origin is taken as an indicator of their level of acculturation (e.g., Iwamasa, 1996). The "acculturated" person may simply reflect a person who has lost his/her ethnic culture. It is also common that, as discussed before, the measurement approach does not reflect the orthogonal conceptual model. That is, a bipolar measurement approach is applied to group people according to Berry's four categories (e.g., Cuéllar et al., 1997; Pawliuk et al., 1996) or to other categories (e.g., Burnam et al., 1987; Meredith et al., 2000). It is difficult to integrate the findings of studies having a bipolar approach with those from studies having an orthogonal approach in understanding ethnic identity and acculturation.

When ethnic identity and acculturation are conceptualized and assessed independently, a more complicated picture is found. For instance, individuals identifying

with neither culture are equally stressed with people identifying strongly with the ethnic culture and host cultures (Sanchez & Fernandez, 1993), but show less psychosomatic symptoms than individuals identifying with the host culture (Eyou et al., 2000). Other studies find no relationship between host culture identification and self-esteem but a strong relationship between ethnic identity and self-esteem (Phinney, Cantu, & Kurtz, 1997), while other studies find a positive relationship between the host culture identification and self-esteem (Oetting & Beauvais, 1991). These recent studies support the importance of using an orthogonal approach for understanding the relationship between ethnic identity and acculturation, and for applying this understanding to examine the relationship cultural identifications and psychological well-being.

Another reason for the mixed results may be related to the multidimensional nature of ethnic identity and acculturation. The relationship seems to vary depending on the dimension of ethnic identity and acculturation being assessed in relation to psychological well-being. For instance, some studies find individuals' associations with their ethnic communities are related to better adjustment more than their internal sense of ethnic identity (Rosenthal & Cichello, 1986). Other studies report significant relationships between language use and proficiency and self-esteem (Chataway & Berry, 1989; Dion, Dion, & Pak, 1990; Noels & Clements, 1996). Different dimensions of ethnic identity and acculturation may have unique relationships with indicators of psychological well-being.

Our understanding of the relationship between cultural identifications and psychological well-being may be enhanced by considering multiple dimensions within

ethnic identity, and by including some aspects of ethnic identity and acculturation that were not examined extensively by previous studies. As previously reviewed, the constructs of Chinese cultural values and collective self-esteem are considered important aspects of ethnic identity in the current study. These constructs are both related to well-being, albeit inconsistently. For example, people with more collectivistic values report receiving more social supports and having a better quality of life, whereas people with individualistic values report that they are lonely (Triandis et al., 1985; 1988). However, other studies find that people with higher individualistic values show lower levels of stress in an individualistic culture (Donà & Berry, 1994). Furthermore, negative evaluations of one's ethnic group are related to lower self-esteem for African Americans (Parham & Helms, 1985). Higher collective self-esteem is positively associated with self-esteem for foreign-born immigrants, but unrelated for native-born generations (Lay & Verkuyten, 1999). Verkuyten (1995) found that individuals who identify strongly with their ethnic group may suffer lower self-esteem when they evaluate their group negatively. The highest levels of self-esteem are found among individuals who strongly identify with their ethnic group and evaluate their group positively. Therefore, including both constructs of Chinese cultural values and collective self-esteem into the overall structure of ethnic identity and including the construct of host cultural values into the overall structure of acculturation may help clarify the interrelationships between different dimensions of ethnic identity and acculturation and individuals' psychological well-being.

In summary, examining both individual variables as continuous measures and

acculturation types that emerge from a cluster analyses of these continuous measures in relation to psychological well-being should contribute to a better understanding about the correlates of psychological well-being among Chinese Canadians. Using a variable-centred approach and focusing on the associations between individual variables (e.g., collective self-esteem) and psychological well-being can help us propose specific hypotheses about the predictors of well-being. Unfortunately, due the limitations described above and to the mixed findings in past research, we are unable to construct specific hypotheses about the predictors of psychological well-being among Chinese Canadians. However, based on the multidimensional and orthogonal approaches adopted in the current study, we can begin to explore the specific relationships between multiple dimensions of ethnic identity and acculturation with an individual's psychological well-being.

On the other hand, using a pattern-centred approach to examine the relationship between acculturation types (e.g., dual vs. unidentified) and individual well-being can help us understand participants holistically. We believe a pattern-centred approach may be more meaningful than a variable-centred approach in investigating the correlates of psychological well-being. The problems we found in past research when using a pattern-centred approach is the way in which the subgroups were formed within a sample (i.e., their way of classifying individuals). These categorizing practices have been approached in an inconsistent manner in many studies (e.g., using different cut-off scores, using a bipolar scale to produce an orthogonal-like four categories). The current study will use statistical analyses (i.e., cluster analyses) to form categories, because there are no

guidelines regarding proper cut-off score for the participants in the current study and we want to allow different degrees of identifications with ethnic and host cultures (rather than reducing identifications to "high" and "low"). Furthermore, cluster analyses allow clusters to form naturally. This will allow us to empirically examine the validity of the typology proposed by Berry. It is expected that individuals identifying strongly with both the ethnic and host cultures will report the most positive psychological well-being, and individuals identifying with neither culture will report the poorest psychological well-being.

Indicators of Psychological Well-Being

In the current study, self-esteem, depression, and acculturative stress are chosen as indicators of psychological well-being. Self-esteem is often considered a measure of psychological well-being among minority group members (Berry & Kim, 1988; Fernando, 1994; Verkuyten, 1994), including people with Chinese origins (Liebkind, 1996). Furthermore, depressive symptoms are considered the most appropriate global indicator of stress (Pearlin, Meneghan, Lieberman, & Mullan, 1981), and is often used as an indicator of psychological distress for ethnic minorities particularly, either in relation to their overall mental health (Meinhardt, Tom, Tse, & Yu, 1985; Neff, 1986; Vega & Rumbaut, 1991), in relation to their ethnic identity and acculturation levels (Fernando, 1994; Moscicki, Locke, Rae & Boyd, 1989; Salgado de Snyder, 1987; Sam & Berry, 1995; Vega, Kolody, & Valle, 1987; Ward & Kennedy, 1994), or among people with Chinese origins specifically (Furham & Li, 1993; Ying, Lee, Tsai, Yeh, & Huang, 2000).

Lastly, although the experience of acculturation may not be a uniformly negative

experience for all ethnic minority individuals, the negative consequences of acculturation are often described as "acculturative stress" (Berry et al., 1987). Acculturative stress is often examined in relation to the coping strategies adopted by ethnic minority individuals (Mena et al., 1987), or in relation to the ethnic identity and acculturation levels across different ethnic groups (Donà & Berry, 1994; Kim & Berry, 1986), including Asian Americans (Padilla et al., 1985). Stress associated with acculturation is commonly used to evaluate the well-being of ethnic minority individuals (Betacourt & Lopez, 1993; Gil, Vega, & Dimas, 1994; Mehta, 1998), and is one of the significant predictors of other indicators of well-being, including depression (Hovey, 2000) and self-esteem (Padilla, Alvarez, & Lindholm, 1986).

CHAPTER 3: RESEARCH QUESTIONS

The first goal of the current study is to examine if ethnic identity and acculturation are independent constructs. It is expected that components related to ethnic identity and to acculturation will be clearly differentiated in an overall factor analysis.

The second goal of the current study is to examine the factorial structure of ethnic identity. This is examined in two steps. Ethnic identity is conceptualized with two primary dimensions: internal and external. Therefore, the validity of this two-dimensional structure of ethnic identity is examined first. It is expected that internal and external dimensions of ethnic identity will be clearly differentiated. After the internal and external dimensions of ethnic identity are validated, efforts will be made to explore if components within the internal dimension of ethnic identity can be identified. It is expected that there will not be a clear differentiation among the components of the internal dimension (i.e., affective and cognitive components). Attention will also be paid to the constructs of collective self-esteem and Chinese cultural values, both of which are expected to be subsumed under the internal dimension of ethnic identity. The relationship of these two constructs with the other components of ethnic identity will be explored.

The factorial structure of acculturation will be examined in a similar fashion. The validity of the two-dimensional structure of acculturation will be examined, followed by an exploration of the specific components within the internal dimension of acculturation. It is expected that internal and external dimensions will be identified, but that further differentiation within the internal dimension will not be found. Specific attention will be

paid to the construct of host cultural values, which is expected to be subsumed under the internal dimension of acculturation. The relationship of this construct with the other components of acculturation will be explored.

The third goal is to examine the validity of the "contact hypothesis," which refers to how ethnic identity and acculturation vary with exposure to Chinese and Canadian society. Nativity status (foreign-born vs. Canadian-born), length of residence, and age of arrival in Canada were chosen as demographic predictors of ethnic identity and acculturation for assessing this hypothesis. It is expected that more exposure to Chinese culture will be associated with higher ethnic identity, and more exposure to Canadian culture will be associated with higher acculturation. If multiple dimensions within ethnic identity and acculturation are found, the relationships between cultural contact and these specific dimensions will be explored.

The fourth goal is to conduct a pattern-centred analysis (i.e., cluster analysis) in which different groups are formed based on the constellation of multiple aspects of ethnic identity and acculturation. Clusters will be compared in relation to key cultural correlates (i.e., length of residence, age of arrival, generational status, country of origin).

The fifth goal is to evaluate the relationship between ethnic identity and acculturation. Contemporary models of acculturation argue that one's involvement with the host country and one's country of origin are independent. However, evaluations of this orthogonal model typically only assess selected aspects of acculturation. In the current study, we assess the relationship between ethnic identity and acculturation when multiple aspects of both ethnic identity and acculturation are considered. By doing so,

ethnic identity is evaluated as equivalent to acculturation, rather than as one indicator of acculturation. If different cluster groups are formed as hypothesized, the relationship between ethnic identity and acculturation will be further explored within each cluster.

The sixth goal is to investigate the relationship between ethnic identity and acculturation with individual's psychological well-being with both a variable-centred and a pattern-centred approach. Specifically, the relationship between psychological well-being and each dimension of ethnic identity and acculturation will be explored, followed by a comparison of clusters in relation to the three indicators of psychological well-being. Cluster groups characterized by strong identifications with both cultures are hypothesized to report the highest psychological well-being, whereas cluster groups characterized with weak identifications with both cultures are hypothesized to report the poorest psychological well-being. With the advantages of applying both approaches, a better understanding of such relationships may be obtained.

CHAPTER 4: METHODOLOGY

Procedures

The majority of the participants were recruited through Chinese school clubs and student associations (e.g., Chinese Christian Fellowship, Asian and Canadian Student Society, Taiwanese Association), fliers that were posted on campus and through internet list-serves (e.g., Chinese Student Association, International Student Association), and Japanese and Chinese language classes. In order to encourage participation, three prizes with a value of $30 dollars each were provided at the end of data collection. These prizes were drawn in a lottery among participants who provided their contact information, and winners were contacted individually to receive their prizes. Other participants were recruited through an undergraduate psychology course. In exchange for their participation, these participants received credit points that were added into their final grade for the course.

Participants were scheduled for an individual appointment or for a small-group session in the lab space assigned to the principal investigator. Participants were also given the option of completing the questionnaires at home. Participants were fully debriefed after they completed the questionnaires. The time to complete all questionnaires was 30 minutes to 1 hour. Copies of the informed consent and de-briefing form are included in Appendix A.

Sample Description

The participants were individuals with Chinese origins, who were over the age of eighteen and living in Canada for at least two years. A total of 234 students were

recruited between May and August of 2001, about half from University of British Columbia and half from the University of Victoria. See Table 3 for a description of the sample. The sample was roughly evenly divided between men and women. Their ages ranged from 18 to 40 (M= 22.3; SD= 3.26). Of the total sample, 13.6% were born in Canada and 86.4% were foreign-born. The mean length of residence in Canada among the foreign-born participants was 8.36 years. Among the foreign-born participants, 57.0% were from Taiwan, 35.5% were from Hong Kong, and 7.5% were from China. With regard to the developmental stage when participants came to Canada, 16.4% came before the age of 6, 17.8% came between 7 and 11 years old, and the majority (65.8%) came after the age of 12. More than half of the participants' fathers had a college degree or more (59.5%).

The majority of the participants reported speaking in their ethnic language at home (82.6%), whereas only 17.4% reported speaking English at home. Only 10 participants reported using multiple languages at home. On the other hand, about half of the participants used English outside the home. Regarding participants' religion and religious practices, one-third reported having no religion, 23.5% were Catholic or Christian, and 35% were Buddhist or Taoist. Among those endorsing a religion, only 20% reported moderate to strong involvement.

Measures

Participants completed a demographic questionnaire and a variety of measures of ethnic identity and acculturation that assessed affective, cognitive, and behavioural dimensions as reviewed below. See Appendix B for the copy of each questionnaire.

Table 3

Description of the Sample

Variable		Range or N	% or M (SD)
Gender	Male	N = 101	43.2%
	Female	N = 133	56.8%
Campus	U of Victoria	N = 134	57.3%
	U of British Columbia	N = 100	42.7%
Age (in years)		18 to 40	22.3 (3.26)
Generational Status	Canadian-born	N = 30	13.6%
	Foreign-born	N = 190	86.4%
Length of Residence	Whole sample	0 to 40 years	9.79 (6.21)
	Foreign born only	2 to 25 years	8.36 (3.25)
Country of Origin (foreign-born)			
	China	N = 14	7.5%
	Taiwan	N = 106	57.0%
	Hong Kong	N = 66	35.5%
Age of Arrival (foreign-born)			
	0-6	N = 6	3.0%
	7-11	N = 39	20.6%
	12+	N = 144	76.2%
Languages Spoken at Home			
	English	N = 40	17.4%
	Ethnic	N = 190	82.6%

(table continues)

Variable		Range or N	% or M (SD)
Languages Spoken outside the Home			
	English	N = 114	52.5%
	Ethnic	N = 103	47.5%
Religion			
	None	N = 78	33.3%
	Christian/ Catholic	N = 55	23.5%
	Buddhism/ Taoism	N = 82	35.0%
Religious Involvement		0 to 4	1.2 (1.11)
Father's Education			
	Elementary	N = 15	6.5%
	Junior High School	N = 14	6.1%
	High School	N = 64	27.8%
	College/ Vocational School	N = 58	25.2%
	University	N = 56	24.3%
	Graduate/ Professional	N = 23	10.0%

Demographic Background Questionnaire

A demographic questionnaire was designed for the purpose of this study. Common demographic questions were included, such as gender, age, and parents' socio-economic status. Specific demographic questions were also included, such as age of arrival, self-reported English and ethnic language proficiency, and languages spoken at home and outside the home.

Ethnic Identity

Ethnic identity was conceptualized as multidimensional, with affective, cognitive, and behavioural components. Several measures were chosen to assess each component (see Table 4).

Affective Component

Two subscales, Ethnic Affirmation and Belonging and Ethnic Identity Achievement, from the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) were used to assess the affective component of the ethnic identity. The Ethnic Affirmation and Belonging subscale has 5 items, and the Ethnic Identity Achievement subscale has 7 items. Both subscales have demonstrated good reliability ($\alpha = .86$ and $\alpha = .80$, respectively) and good validity in assessing ethnic identity for university students across ethnic groups (Cuéllar, Nyberg, Maldonado, & Roberts, 1997; Eyou et al., 2000; Phinney, 1992). Items are rated on a 4-point scale from *strongly disagree* to *strongly agree*. Scores are derived by reversing negatively worded items, summing across items, and obtaining the mean. Scores may range from 1 to 4. Higher scores indicate higher ethnic identity (e.g., "I feel a strong attachment towards my own ethnic group").

Table 4

List of Measures

Ethnic Identity- Internal Dimension- Affective Component
Ethnic Affirmation & Belongingness (MEIM; Phinney, 1992) [a]
1. I am happy that I am a member of the group I belong to.
2. I have a strong sense of belonging to my own ethnic group.
3. I have a lot of pride in my ethnic group and its accomplishments.
4. I feel a strong attachment towards my own ethnic group.
5. I feel good about my cultural or ethnic background.
Ethnic Identity Achievement (MEIM; Phinney, 1992) [a]
1. I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.
2. I have a clear sense of my ethnic background and what it means for me.
3. I think a lot about how my life will be affected by my ethnic group membership.
4. I am not very clear about the role of my ethnicity in my life.
5. I really have not spent much time trying to learn more about the culture and history of my ethnic group.
6. I understand pretty well what my ethnic group membership means to me, in terms of how to relate to my own group and other groups.
7. In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.
Collective Self-Esteem (adapted from CSE; Luhtanen & Crocker, 1992)
1. I am a worthy member of my ethnic group.
2. I often regret that I belong to the ethnic group I do.
3. Overall, my ethnic group is considered good by others.
4.Overall, my ethnic group membership has very little to do with how I feel about myself.
5. I feel I don't have much to offer to my ethnic group.

6. In general, I'm glad to be a member of my ethnic group.
7. Most people consider my ethnic group, on the average, to be more ineffective than other ethnic groups.
8. The ethnic group I belong to is an important reflection of who I am.
9. I am a cooperative participant in my ethnic group.
10. Overall, I often feel that the ethnic group of which I am a member is not worthwhile.
11. In general, others respect my ethnic group.
12. My ethnic group is unimportant to my sense of what kind of person I am.
13. I often feel I'm a useless member of my ethnic group.
14. I feel good about the ethnic group I belong to.
15. In general, others think that my ethnic group is unworthy.
16. In general, belonging to my ethnic group is an important part of my self-image.

Ethnic Identity- Internal Dimension- Cognitive Component

Chinese Identity Scale (adapted from Jewish Identity Scale; Zak, 1973)

1. When an important newspaper insults Chinese people, I feel that it is insulting me.
2. My fate and future are bound up with that of the Chinese everywhere.
3. Chinese the world over are my kin (as "one family").
4. It is necessary to take an active interest in the fate of Chinese everywhere in order to be a good Chinese in Canada.
5. Being Chinese plays an important part in my life.
6. When an important newspaper praises the Chinese, I feel that it is praising me.
7. If I were to be born all over again, I would wish to be born a Chinese.
8. If a non-Chinese were to meet me and mistake me as being non-Chinese, I would correct his/her misperception and tell him/her that I am a Chinese.

Chinese Cultural Values (The Chinese Culture Connection, 1987) [a]

1. Filial Piety (Obedience to parents, respect for parents, honouring ancestors, financial support of parents).
2. Industry (Working hard).

3.Tolerance of others.

4. Harmony with others.

5. Humbleness.

6. Loyalty to supervisors.

7. Observation of rites and social rituals.

8. Reciprocation of greeting, favours, gifts.

9. Kindness (Forgiveness, compassion).

10. Knowledge (Education).

11. Solidarity with others.

12. Moderation, following the middle way.

13. Self-cultivation.

14. Ordering relationships by status and observing this order.

15. Sense of righteousness.

16. Benevolent authority.

17. Non-competitiveness.

18. Personal steadiness and stability.

19. Resistance to corruption.

20. Patriotism.

21. Sincerity.

22. Keeping oneself disinterested and pure.

23. Thrift.

24. Persistence (Perseverance).

25. Patience.

26. Repayment of both the good or the evil that another person has caused you.

27. A sense of cultural superiority.

28. Adaptability.

29. Prudence (Carefulness).

30. Trustworthiness.

31. Having a sense of shame.

32. Courtesy.
33. Contentedness with one's position in life.
34. Being conservative.
35. Protecting your "face"
36. A close, intimate friend.
37. Chastity in women.
38. Having few desires.
39. Respect for tradition.
40. Wealth.

Ethnic Identity- External Dimension- Behavioural Component

Chinese Practices & Customs (adapted from MOS of ARSMA-II; Cuéllar et al., 1995)

1. I speak Chinese.
2. I enjoy speaking Chinese.
3. I associate with Chinese and/or Chinese Canadians.
4. I enjoy listening to Chinese language music.
5. I enjoy Chinese language TV.
6. I enjoy Chinese language movies.
7. I enjoy reading in Chinese.
8. I write in Chinese.
9. My thinking is done in Chinese.
10. My contact with a Chinese country has been...
11. My father identifies himself as a "Chinese"
12. My mother identifies herself as a "Chinese"
13. My friends, while I was growing up, were of Chinese origin.
14. My family cooks Chinese foods.
15. My friends now are of Chinese origin.
16. I like to identify myself as a Chinese Canadian.
17. I like to identify myself as a Chinese.

Acculturation- Internal Dimension- Affective Component

Canadian Affirmation & Belongingness (adapted from MEIM; Phinney, 1992).

1. I am happy that I am Canadian.
2. I have a strong sense of belonging to Canada.
3. I have a lot of pride in my Canadian background and Canada's accomplishments.
4. I feel a strong attachment towards Canada.
5. I feel good about my Canadian background.

Canadian Identity Achievement (adapted from MEIM; Phinney, 1992)

1. I have spent time trying to find out more about my Canadian background, such as its history, traditions, and customs.
2. I have a clear sense of being a Canadian and what it means for me.
3. I think a lot about how my life will be affected by my Canadian group membership.
4. I am not very clear about the role of my Canadian background in my life.
5. I really have not spent much time trying to learn more about the culture and history of Canada.
6. I understand pretty well what being a Canadian means to me, in terms of how to relate to other Canadians and other groups.
7. In order to learn more about my Canadian background, I have often talked to other people about being a Canadian.

Acculturation- Internal Dimension- Cognitive Component

Canadian Identity Scale (adapted from American Identity Scale; Zak, 1973)

1. If a stranger were to meet me and mistake me for a non-Canadian, I would correct his/her mistake, and tell him/her that I am a Canadian.
2. My fate and future are bound up with that of the Canadian people.
3. The mixture of many races and cultures in Canada contributes to its greatness.
4. I regard Canadians everywhere as my kin (as "one family").
5. Being a Canadian plays an important part in my life.
6. When an important newspaper insults the Canadian people, I feel that it is insulting me.

7. One of my most important duties as a Chinese-Canadian is loyalty to Canada.
8. My destiny is closely connected to the destiny of Canada.
9. When an important newspaper praises the Canadian people, I feel that it is praising me.
10. If I were to be born all over again, I would wish to be born a Canadian.

Canadian Cultural Values-Individualism (Triandis et al., 1986; Triandis et al., 1988) [a]

1. If the group is slowing me down, it is better to leave it and work alone.
2. To be superior, a man/woman must stand alone.
3. Winning is everything.
4. Only those who depend on themselves get ahead in life.
5. If you want something done right, you've got to do it yourself.
6. What happens to me is my own doing.
7. I feel winning is important in both work and games.
8. Success is the most important thing in my life.
9. It annoys me when other people perform better than I do.
10. Doing your best isn't enough; it is important to win.
11. In most cases, to cooperate with someone whose ability is lower than oneself is not as desirable as doing the thing on one's own.
12. In the long run, the only person you can count on is yourself.
13. Even if a child won the Nobel Prize, the parents should not feel honoured in any way.
14. Children should not feel honoured even if the father were highly praised and given an award by the government official for his contributions and service to the community.
15. I am not to blame if one of my family members fails.
16. My happiness is unrelated to the well-being of my coworkers.
17. My parents' opinions are not important to my choice of a spouse.
18. I am not to blame when one of my close friends fails.
19. My coworkers' opinions are not important in my choice of a spouse.
20. When a close friend of mine is successful, it does not really make me look better.
21. One need not worry about what the neighbours say about whom one should marry.

Acculturation- External Dimension- Behavioural Component

Canadian Practices & Customs (adapted from AOS of ARSMA-II; Cuéllar et al., 1995)

1. I speak English.
2. I enjoy speaking English.
3. I associate with Caucasians.
4. I enjoy listening to English language music.
5. I enjoy English language TV.
6. I enjoy English language movies.
7. I enjoy reading in English.
8. I write in English.
9. My thinking is done in English.
10. My contact with Canada has been...
11. My father identifies himself as a "Canadian."
12. My mother identifies herself as a "Canadian."
13. While I was growing up, my friends were of Caucasian origin.
14. My family cooks Canadian foods.
15. My friends now are of Caucasian origin.
16. I like to identify myself as a Caucasian.
17. I like to identify myself as a Canadian.

Psychosocial Well-being

Self-esteem (Rosenberg, 1979)[a]

1. I feel that I'm a person of worth, at least on an equal basis as most other people.
2. I feel that I have a number of good qualities.
3. On the whole, I am satisfied with myself.
4. I am able to do things as well as most other people.
5. I take a positive attitude toward myself.
6. All in all, I am inclined to feel that I'm a failure.
7. I feel that I do not have much to be proud of.
8. I wish I could have more respect for myself.

9. I certainly feel useless at times.

10. At times I think I am no good at all.

Depressive symptoms (CES-D; Radloff, 1977) [a]

1. I was bothered by things that usually don't bother me.

2. I did not fee like eating; my appetite was poor.

3. I felt that I could not shake off the blues even with help from my family or friends.

4. I felt that I was just as good as other people.

5. I had trouble keeping my mind on what I was doing.

6. I felt depressed.

7. I felt that everything I did was an effort.

8. I felt hopeful about the future.

9. I thought my life had been a failure.

10. I felt fearful.

11. My sleep was restless.

12. I was happy.

13. I talked less than usual.

14. I felt lonely.

15. People were unfriendly.

16. I enjoyed life.

17. I had crying spells.

18. I felt sad.

19. I felt that people disliked me.

20. I could not get "going" (or motivated).

Acculturative stress (Mena et al., 1987) [a]

1. I feel uncomfortable when others make jokes about or put down people of my ethnic background.

2. I have more barriers to overcome than most people.

3. It bothers me that family members I am close to do not understand my new values.

4. Close family members and I have conflicting expectations about my future.

5. It is hard to express to my friends how I really feel.
6. My family does not want me to move away, but I would like to.
7. It bothers me to think that so many people use drugs.
8. It bothers me that I cannot be with my family.
9. In looking for a job, I sometimes feel that my ethnicity is a limitation.
10. I don't have any close friends.
11. Many people have stereotypes about my culture or ethnic group and treat me as if they are true.
12. I don't feel at home.
13. People think I am unsociable, when in fact I have trouble communicating in English.
14. I often feel that people actively try to stop me from advancing.
15. It bothers me when people pressure me to assimilate.
16. I often feel ignored by people who are supposed to assist me.
17. Because I am different, I do no get enough credit for the work I do.
18. It bothers me that I have an accent.
19. Loosening the ties with my country is difficult.
20. I often think about my cultural background.
21. Because of my ethnic background, I feel that others often exclude me from participating in their activities.
22. It is difficult for me to "show off" my family.
23. People look down upon me if I practice customs of my own culture.
24. I have trouble understanding others when they speak.

[a]See the reference for the original questionnaire.

Another hypothesized affective component of ethnic identity in the current study is collective self-esteem. The Collective Self-Esteem Scale (CSE; Luhtanen & Crocker, 1992) was used to assess participants' social evaluation of their ethnic group. This scale consists of 16 items and 4 subscales: CSE-Private (judgments of how good one's group is), CSE-Public (judgments of how other people evaluate one's group), CSE-Member (judgment of how good they are as members of their group), and CSE-Identity (importance of group membership to one's self-concept). The scale demonstrates good reliability and validity in assessing people's feeling and presumed values about their social groups (Luhtanen & Crocker, 1992). This measure was adapted for the current study to focus on the individual's "ethnic group" (e.g., "I am a worthy member of my ethnic group"). This type of alteration of the original scale into an ethnic-specific scale has demonstrated good reliability and validity in assessing the collective self-esteem of Asian college students and Chinese immigrants, with coefficient alphas ranging from .63 to .88 (Crocker et al., 1994; Verkuyten & Lay, 1998). Items are rated on a 7-point scale from *strongly disagree* to *strongly agree*. Scores for each subscale are derived by reversing negatively worded items, summing across items, and obtaining the mean. Scores may range from 1 to 7. Higher scores indicate more positive feelings and presumed values about one's ethnic group.

Cognitive Component

The Jewish identity subscale in the Jewish-American identity scale (Zak, 1973) was adapted and used to measure the cognitive component of the ethnic identity for people with Chinese origins. The Jewish Identity subscale demonstrates good validity

and reliability in assessing the cognitive aspects of ethnic identity for Jewish-Americans (Elias & Blanton, 1987), and for Mexican-Americans (α = .72; Der-Karabetian & Ruiz, 1997). In the current study, this scale was adapted (replacing "Jewish" with "Chinese") to formulate the Chinese identity subscale. This scale has 10 items, and scores are derived by summing across items and obtaining the mean. Items are rated on a 7-point scale from *strongly disagree* to *strongly agree*. Scores may range from 1 to 7. These 10 items deal with a sense of common fate, kinship, sensitivity to praise and insult as a Chinese (e.g., "My destiny is bound up with the destiny of the Chinese in Canada"). Higher scores indicate higher levels of ethnic identity.

The second cognitive component of ethnic identity in the current study is Chinese cultural values. The Chinese Value Survey (CVS; The CCC, 1987) was used to assess the degree to which participants endorse traditional Chinese cultural values (collectivism). Some previous research has found a four-factor structure for the measure: Integration, Confucian work dynamism, Human-heartedness, and Moral discipline (Chiu, Wong, & Kosinski, 1998). Other studies have found a two-factor structure: Social Integration-Cultural Inwardness, and Reputation-Morality (Bond, 1988). Still other studies have found one overall factor of collectivism (The CCC, 1987). The current study used the overall score to represent an individual's degree of endorsement of traditional Chinese values. This scale has demonstrated good validity in assessing Chinese cultural values for people with Chinese origins (Chiu, 1990; Chiu et al., 1998). The CVS consists of 40 items whose degree of importance is rated by each participant on a 9-point scale, ranging from *of no importance at all* to *of supreme importance*. The stem

items (with synonyms in brackets) are values considered of fundamental importance in Chinese culture by a group of Chinese scholars who were consulted during the development of this scale (e.g., moderation, having a sense of shame). Scores are obtained by summing across items and obtaining the mean. Scores may range from 1 to 9. Higher scores indicate higher endorsement of Chinese cultural values.

Behavioural Component

The Mexican Orientation subscale of the Acculturation Rating Scale for Mexican Americans (ARSMA-II; Cuéllar et al., 1995) was used to measure the behavioural component of ethnic identity[1]. This subscale has demonstrated good reliability and validity in assessing individuals' behavioural orientation toward Mexican culture for Mexican-Americans (Cuéllar et al., 1995; Cuéllar et al., 1997), and for Asian American university students (Liem et al., 2000). In the current study, this subscale was adapted (replacing "Mexican" with "Chinese") to formulate the Chinese Orientation subscale. This subscale consists of 17 items, including items such as language use, media and food preference, and friendships (e.g., "I enjoy speaking Chinese"). Items are rated on a 5-point scale from *not at all* to *almost always*. Scores are derived by summing across items and obtaining the mean. Scores may range from 1 to 5. Higher scores indicate more frequent practice of Chinese behaviours and customs.

Acculturation

Acculturation was also conceptualized as multidimensional, with affective, cognitive, and behavioural components. Several measures were chosen to assess each component (see Table 4).

Affective Component

In order to assess the affective component of acculturation, two subscales (the 5-item Affirmation and Belonging subscale and the 7-item Ethnic Identity Achievement subscale) of the Multigroup Ethnic Identity Measure were included (MEIM; Phinney, 1992). The overall scale of MEIM has previously been adapted to assess individuals' identification with the host culture, and demonstrates good reliability and validity in doing so (Eyou et al., 2000). In the current study, these two scales were adapted by replacing "ethnic" with "Canadian" or "Canada" (e.g., "I have a lot of pride in my Canadian background and Canada's accomplishments"). Items are rated on a 4-point scale from *strongly disagree* to *strongly agree*. Scores are derived by reversing negatively worded items, summing across items, and obtaining the mean. Scores may range from 1 to 4. Higher scores indicate higher host cultural identity.

Cognitive Component

The American identity subscale in the Jewish-American identity scale (Zak, 1973) was adapted and used to measure the cognitive component of acculturation for people with Chinese origins. The American Identity subscale demonstrates good validity and reliability in assessing cognitive aspects of acculturation for Jewish-Americans (Elias & Blanton, 1987), and Mexican-Americans ($\alpha = .70$; Der-Karabetian & Ruiz, 1997). In the current study, the American Identity subscale was adapted (replacing "American" with "Canadian") to formulate the Canadian Identity subscale. This subscale has 10 items, which are rated on a 7-point scale from *strongly disagree* to *strongly agree*. Scores are derived by summing across items and obtaining the mean, and may range from 1 to 7.

These 10 items deal with a sense of common fate, kinship, sensitivity to praise and insult as a Canadian (e.g., "Being a Canadian plays an important part in my life"). Higher scores indicate higher level of host cultural identity.

Another cognitive component of acculturation was host cultural values. Assessing the values of the majority group is always difficult (Phinney, 1990). To date, an accepted scale for assessing Canadian host cultural values is not available. In the current study, individual's endorsement of individualistic values was considered to be an index of endorsing host cultural values. The 21-item Individualism subscale captures two main features of individualism: self-reliance and competition (e.g., "If the group is slowing me down, it is better to leave it and work alone"), and emotional distance from in-groups (e.g., "I am not to blame if one of my family members fails) (Triandis et al., 1986; 1988). Items are rated on a 5-point scale from *strongly disagree* to *strongly agree.* Scores are obtained by summing across items and obtaining the mean, and may range from 1 to 5. Higher scores indicate higher endorsement of host cultural values (individualistic values).

Behavioural Component

In order to assess the behavioural component of acculturation, the Anglo Orientation subscale of the Acculturation Rating Scale for Mexican-American- II was used in the current study (ARSMA-II; Cuéllar et al., 1995)[2]. The Anglo Orientation subscale has demonstrated good reliability and validity in assessing individuals' behavioural orientation toward American culture for Mexican-Americans (Cuéllar et al., 1995; Cuéllar et al., 1997), and for Asian-American university students (Liem et al.,

2000). In the current study, the Anglo Orientation subscale was adapted (replacing "Anglo" with "Canadian") to formulate the Canadian Orientation subscale. This subscale has 13 items, including items such as language use, media and food preference, and friendship choices (e.g., "I associate with Caucasians"). Items are rated on a 5-point scale from *not at all* to *almost always*. Scores are derived by summing across items and obtaining the mean, and may range from 1 to 5. In addition, in order to make each item parallel with the items in the Chinese Orientation subscale (the one assessing the behavioural component of ethnic identity in the current study), four items were added as follows: "I enjoy speaking English", "My father identifies himself as a Canadian", "My mother identifies herself as a Canadian", and "My family cooks Canadian foods". Therefore, the total number of items of this subscale is 17, which is the same as the Chinese Orientation subscale. Higher scores indicate more frequent practice of Canadian cultural behaviours and customs.

Psychological Well-Being

Three aspects of psychological well-being were assessed: self-esteem, depression, and acculturation stress (see Table 4).

Self-Esteem

Rosenberg's (1986) Self-Esteem Scale was included to assess individuals' global sense of self-esteem (e.g., "On the whole, I am satisfied with myself"). This scale is widely used in research and has demonstrated high reliability and validity in assessing self-esteem across ethnic groups in North America (Grossman, Wirt, & Davids, 1985; Phinney et al., 1997; Rumbaut, 1994) and with Asian and Chinese immigrants in

particular (Nesdale, Rooney, & Smith, 1997; Sam, 2000; Verkuyten & Lay, 1998). This scale has 10 items, which are rated on a 4-point scale from *strongly disagree to strongly agree*. Scores are derived by reversing negative items, summing across items, and obtaining the mean. Scores may range from 1 to 4, with higher scores indicating higher levels of self-esteem.

Depressive Symptoms

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used to assess depressive symptoms. This scale has demonstrated good reliability and validity in assessing depressive symptoms across different ethnic minority groups, including Chinese Americans (Ying, 1988), and Chinese American college students particularly (α = .88, Ying et al., 2000). The CES-D has 20 items, and each is scored from zero (rarely, or less than 1 day) to three (most of the time, or 5 to 7 days). The scale includes items such as depressed mood, feelings of guilt, and helplessness (e.g., "I felt sad"). Scores are derived by reversing negative items, summing across the items, and obtaining the mean. Scores may range from 0 to 3, with higher scores indicating more depressive symptoms, weighted by frequency of occurrence during the past week.

Acculturative Stress

Acculturative stress was assessed with a short version of the original SAFE scale (Social, Attitudinal, Familial, and Environmental Acculturation Stress Scale) by Mena and the colleagues (1987). Mena et al. (1987) revised the original 60-item SAFE scale (Padilla et al., 1985) by reducing the number of items to 17 and adding 7 new items. This 24-item scale has good reliability (α = .89) and good validity in assessing acculturation

stress in college students with diverse ethnic backgrounds (Mena et al., 1987), and among Hispanic American university students (Fuertes & Westbrook, 1996). The original 60-item scale also demonstrates good reliability and validity in assessing acculturation stress among Asian American college students (Padilla et al., 1985). In the current study, this 24-item version of the SAFE Acculturation Stress Scale was used. The 24 items are rated on a 5-point scale from *not stressful* to *extremely stressful* (e.g., "It bothers me when people pressure me to assimilate"). Scores are derived by summing across the items and obtaining the mean. Scores may range from 1 to 5, with higher scores indicating higher levels of acculturation stress.

CHAPTER 5: RESULTS

Descriptive Statistics

The psychometric characteristics of all of the measures used in the current study are presented in Table 5. In order to determine whether the sample could be treated as a whole, mean score comparisons by gender and by location of participant recruitment were conducted on key dependent variables (the 14 measures of different dimensions of ethnic identity and acculturation). There were no differences on any variable based on the location of participant recruitment (University of British Columbia vs. University of Victoria). In addition, only one between-group difference was found for gender, F (1, 229) = 6.57, p = .03, on the Affirmation and Belonging subscale of ethnic identity. Male participants endorsed a higher sense of belonging to Chinese culture than did females. Since the other 13 variables did not show any gender differences, groups were combined for all remaining analyses.

The distributions of the 14 key variables were evaluated by examining their skewness and kurtosis. Only one variable (CVS; Chinese Value Survey) had a significant level of both skewness (-1.47) and kurtosis (6.34). Efforts were made first to detect any potential outliers that might contribute to this abnormal distribution. Among continuous variables, univariate outliers are the cases with standardized scores in excess of 3.29 (Tabachnick & Fidell, 1996). After transforming the CVS scores into standardized scores, one participant (#188) was found to be an outlier, having a standardized score of -6.31, which was significantly in excess of 3.29 (p = .001, two-tailed test). After deleting this participant's score on the CVS, a re-examination of skewness and kurtosis revealed

Table 5

Psychometric Characteristics of Measures

Measure	N	Mean (SD)	Coefficient alpha
Ethnic Identity			
Chinese Affirmation/ Belonging[b]	231	3.08 (.54)	.89
Chinese Identity Achievement[b]	231	2.86 (.48)	.82
CSE-Private[a]	231	5.43 (.97)	.80
CSE-Public[a]	232	5.00 (.80)	.67
CSE-Member[a]	232	4.81 (.96)	.73
CSE-Identity[a]	232	4.67 (.99)	.75
Chinese Identity (Cognitive)[a]	232	4.89 (.85)	.77
Chinese Values (Collectivism)[c]	229	7.01 (.87)	.95
Chinese Behaviour[d]	233	3.92 (.65)	.88
Acculturation			
Canadian Affirmation/ Belonging[b]	231	2.78 (.61)	.89
Canadian Identity Achievement[b]	231	2.53 (.48)	.76
Canadian Identity (Cognitive)[a]	231	4.37 (.98)	.86
Canadian Values (Individualism)[d]	232	3.03 (.41)	.78
Canadian Behaviour[d]	231	3.23 (.62)	.88
Psychological Well-being			
Self-esteem[b]	231	2.98 (.51)	.90
Depressive symptoms[e]	229	0.85 (.48)	.90
Acculturative stress[d]	233	2.52 (.55)	.89

Notes: [a]7-point scale; [b]4-point scale; [c]9-point scale; [d]5-point scale; [e]3-point scale.

no abnormality (skewness = -.591; kurtosis = .515), and only one participant (#100) had a standardized score slightly higher than 3.29 (-3.67). This participant was retained for the following analyses, and the distributions of the 14 key variables in the current study were considered normal.

All of the 14 key variables showed good internal consistency (alphas ranging from .65 to .95). The number of participants who had missing values on a subset of items within a scale was small, and was dealt with following the guidelines provided by Appelbaum (1993). These guidelines state that if less than 20% of the items on a specific scale are missing, missing values can be replaced with the individual's overall scale mean.

Factor Analyses

Preliminary Analyses

In order to determine if the data were suitable for factor analyses and if any variable should be excluded from subsequent analyses, these 14 variables were submitted to a principal component analysis (PCA) with varimax rotation without specifying a factor solution. The results showed that the maximum number of factors (eigenvalues higher than 1) was 3, accounting for 60.87% of the total variance. A bivariate correlation matrix among the 14 variables revealed a relatively wide range of correlations among variables (see Table 6). This indicated the factorability of the present data set, and different patterns in response to variables were anticipated. Furthermore, the original nonrotated PCA revealed that the smallest eigenvalue was .157, not dangerously close to zero. After submitting these 14 variables to principal axis factoring (PAF) with varimax

Table 6

Bivariate Correlation Coefficients Among the 14 Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1: Chinese Identity	---													
2: Chinese Affirm/Belong	.49**	---												
3: Chinese Id Achieve	.44**	.10	---											
4: Chinese Values	.23**	.31**	.29**	---										
5. CSE-Identity	.47**	.52**	.49**	.20**	---									
6. Chinese Behaviour	.46**	.30**	.20**	.30**	.16*	---								
7. CSE-Private	32**	59**	.34**	.09	.47**	.07	---							
8. CSE-Public	.18**	.39**	.19**	.06	.24**	-.07	.64**	---						
9. CSE-Member	.39**	.61**	.59**	.19**	.51**	.13*	.60**	.41**	---					
10. Canadian Identity	.22**	.15*	.23**	.02	.16*	.20**	.19**	.18**	-.10	---				
11. Canadian Affirm/belong	-.03	.18**	.24**	.04	.16*	.17**	.20**	.52**	-.20**	.75**	---			
12. Canadian Id Achieve	-.03	.10	.31**	.13*	.06	.07	.21**	.49**	-.18**	.55**	.66**	---		
13. Canadian Behaviour	-.06	.00	.07	-.04	.16*	.25**	.15*	.02	-.32**	.55**	.65**	.54**	---	
14. Canadian Values	.05	.05	-.02	-.00	-.11	-.09	-.09	-.09	.05	-.11	-.03	-.08	-.01	-

Note: * $p < .05$; ** $p < .01$. 1. Chinese Identity: Chinese Identity Scale (Zak, 1973); 2. Chinese Affirm/Belong: Chinese Affirmation/ Belonging (Phinney, 1992); 3. Chinese Id Achieve: Chinese Identity Achievement (Phinney, 1992); 4. Chinese Values: Chinese Value Survey (The Chinese Culture Connection, 1987); 5. CSE-Id: Identity Collective Esteem (Luhtanen & Crocker, 1992); 6. Chinese Behaviour: Chinese Orientation Scale (Cuéllar et al., 1995); 7. CSE-Private: Private Collective Esteem (Luhtanen & Crocker, 1992); 8. CSE-Public: Public Collective Esteem (Luhtanen & Crocker, 1992); 9. CSE-Member: Membership Collective Esteem (Luhtanen & Crocker, 1992); 10. Canadian Identity: Canadian Identity Scale (Zak, 1973); 11. Canadian Affirm/Belong: Canadian Affirmation/ Belonging (Phinney, 1992); 12. Canadian Id Achieve: Canadian Identity Achievement (Phinney, 1992); 13. Canadian Behaviour: Canadian Orientation Scale (Cuéllar et al., 1995); 14. Canadian Values (Triandis et al., 1986; 1988). Due to instances of missing data, Ns ranged from 229 to 233.

rotation, it was found that squared multiple correlations (SMC) between variables did not approach 1. The largest SMC among the variables was .731. Therefore, multicollinearity and singularity were not a threat in this data set.

Low SMC among variables (lower than .3) was used to screen for outliers among variables. The SMC for the variable "individualism" was very low, close to zero. Further examination of the factor loadings of each variable revealed that the "individualism" variable also had a low loading on its own factor (.225). Therefore, it was decided to drop this variable from subsequent analyses.

Primary Factor Analyses

Determining the Number of Factors

The 13 variables were submitted to a PCA with varimax rotation. The maximum number of factors (eigenvalues larger than 1) was 3, accounting for 65.26% of the total variance. Inspection of a scree plot indicated that the magnitude of eigenvalues visibly tapered off after the third factor. Thus, a three-factor model best fit the data for the overall sample. After determining the number of factors to be retained, the methods of extraction and rotation can then be chosen to best account for the variance in the sample.

Determining Factor Extraction Method

Principal factor analysis was chosen over principal component analysis in the current study. In principal factor analysis, only the variance that each observed variable shares with other observed variables is available for analysis. Exclusion of error and unique variance from principal factor analysis is based on the belief that such variance only confuses the picture of underlying processes. Thus, a linear combination of factors

approximates the observed correlation matrix and scores on observed variables (Kline, 1994). The goal of the principal factor analysis, like the one for the principal component analysis, is to extract maximum orthogonal variance from the data set with each succeeding factor (Tabachnick & Fidell, 1996). In SPSS 10, the principal factor extraction is conducted through principal axis factoring (PAF).

Determining the Factor Rotation Method

In order to determine the appropriate factor rotation method (orthogonal vs. oblique), the correlations among the factors obtained from an oblique rotation were examined. The highest correlation between factors was .28, suggesting that there is at least an 8% overlap in variance among the factors. Usually, when there is 10% (or more) overlap in variance among factors, oblique rotation is warranted unless there are compelling reasons for orthogonal rotation (Tabachnick & Fidell, 1996). Furthermore, based on the conceptual model of the current study, individuals' identifications with Chinese and Canadian cultures were theorized to be independent of each other. Therefore, we wished to be able to explore the interrelationship between them, which would not be possible if these two constructs could only be orthogonal. Thus, oblique, rather than orthogonal, rotation was chosen for the current study.

Factorial Structures of Ethnic Identity and Acculturation

One of the major goals of the current study was to examine the factorial structure of ethnic identity and acculturation, which were conceptualized as individuals' identification with the Chinese and the Canadian culture, respectively. In addition, a two-dimensional structure (the internal and the external) was hypothesized within each

construct.

The 13 variables were submitted to a PAF with oblique rotation. The results of factor solution are presented in Table 7. Three factors emerged, accounting for 65.23% of the total variance. Factor loadings ranged from .42 to .91. The rotation converged in 14 iterations. The three factors were labelled as follows. Factor 1, Chinese Identity, consisted of 6 variables (N= 224; coefficient α = .75), including affective, cognitive, and behavioural aspects of ethnic identity. Factor 2, Canadian Identity, consisted of 4 variables (N= 228; coefficient α = .84), including affective, cognitive, and behavioural aspects of host cultural identity. Factor 3, Ethnic Evaluation, consisted of 3 variables (N= 231; coefficient α = .78), including private and public evaluations of one's ethnic group, and the evaluation of one's contribution to one's ethnic group.

The most unexpected finding came from the third factor, Ethnic Evaluation, which is related to the construct of "collective self-esteem" (CSE). We measured four aspects of collective-self-esteem: CSE-Membership, CSE-Private, CSE-Public, and CSE-Identity. It was hypothesized that these four scales, representing an overall construct of collective self-esteem, would be subsumed under the internal domain of ethnic identity. Contrary to these expectations, the results showed that these four subscales did not go together as an overall representation of collective self-esteem. Instead, consistent with our expectations, CSE-Identity was subsumed under the internal domain of the Chinese Identity. However, inconsistent with our expectations, the CSE-Membership, CSE-Private, and CSE-Public branched out to form a third factor. One common feature of these three subscales, unlike the CSE-Identity, is that they are all evaluative in nature

Table 7

Factor Loadings for the 3-Factorial Solution

	Factor 1 Chinese Identity	Factor 2 Canadian Identity	Factor 3 Ethnic Evaluation
Chinese Identity (Cognitive)	**.65**	-.02	.12
Chinese Affirmation/ Belonging	**.60**	.02	.43
Chinese Identity Achievement	**.65**	.24	.15
Chinese Values (Collectivism)	**.44**	.02	-.02
CSE-Identity	**.46**	.03	.35
Chinese Behaviour	**.58**	-.25	-.15
Canadian Identity (Cognitive)	.10	**.77**	-.03
Canadian Affirmation/ Belonging	-.03	**.92**	-.02
Canadian Identity Achievement	.02	**.78**	-.12
Canadian Behaviour	-.21	**.71**	.13
CSE-Private	.02	-.02	**.90**
CSE-Public	-.10	.02	**.71**
CSE-Member	.38	.11	**.52**
Eigenvalue	4.20	2.84	1.44
Percentage of Variance	32.31	21.84	11.11

Notes: CSE = Collective Self-Eesteem.

(e.g., "I am a worthy member of my ethnic group", "Overall, I often feel that the ethnic group of which I belong to is not worthwhile", "Overall, my ethnic group is considered good by others"). Therefore, the third factor was termed "Ethnic Evaluation" in order to reflect the evaluation of one's ethnic group as separate from identification with one's ethnic group. High scores on this factor indicate a positive evaluation of one's ethnic group, a perception that the group is evaluated positively by others, and a positive evaluation of oneself as a valuable member of the group.

Separate factor analyses were conducted within Chinese Identity and within Canadian Identity in order to explore if there were specific dimensions within each. We expected to find a two-dimensional structure (internal vs. external) within Chinese Identity and within Canadian Identity. It was anticipated that the internal and external dimensions would be clearly differentiated, and that there would be less clear differentiation among the components of the internal dimension. To determine the number of factors within Chinese Identity, the six variables subsumed under Chinese Identity were submitted again to another PCA with varimax rotation without specifying a factor solution. The maximum number of factors (eigenvalues larger than 1) was 2, accounting for 65.65% of the total variance. Inspection of a scree plot indicated that the magnitude of eigenvalues visibly tapered off after the second factor. A 2-factor solution was specified for the next PAF with oblique rotation in order to determine the method of rotation. The highest correlation was .42 (above 17% of shared variance), which suggested the appropriateness of an oblique rotation. A 2-factor solution was specified again with PAF and oblique rotation, which converged in 6 iterations and led to

moderately satisfactory loadings (ranging from .26 to .93). The factor loadings are presented in Table 8. Consistent with our expectations, ethnic identity was comprised of two primary dimensions: internal and external. The two factors were labelled Chinese-Internal Identity and Chinese-External Identity. The Chinese-Internal Identity consisted of 5 variables, including both affective (e.g., sense of affirmation and belongingness) as well as cognitive (e.g., common fate, Chinese cultural values) aspects of Chinese identity. The Chinese-External Identity consisted of only the one behavioural variable.

Similar analyses were conducted within the Canadian Identity factor. The four variables subsumed under Canadian Identity were submitted to another PCA with varimax rotation without specifying a factor solution. The maximum number of factors (eigenvalues larger than 1) was 1, accounting for 71.28% of the total variance. A 1-factor solution was specified for the second PAF, leading to very good factor loadings (ranging from .71 to .93). The factor loadings are presented in the bottom half of Table 8. Contrary to our expectations, Canadian Identity was only comprised of one primary dimension that encompassed affective, cognitive, and behavioural components. Furthermore, the correlations among these variables were high, suggesting a strong tendency to respond to these components in a consistent manner.

Because the measures used in the current study were rated on different scales, before calculating factor scores, all 13 measures were first standardized into z-scores (M= 0; SD= 1) and then re-expressed as t-scores (M= 50; SD= 10). The standardized t-scores of the variables that loaded on each factor were summed and then averaged to produce a factor score for each of the four factors: Chinese-Internal Identity, Chinese-External

Table 8

Factor Loadings of the Structures within Chinese Identity and within Canadian Identity

Chinese Identity	Factor 1: Internal	Factor 2: External
Chinese Identity (Cognitive)	**.47**	.34
Chinese Affirmation/ Belonging	**.83**	.02
Chinese Identity Achievement	**.84**	-.10
Chinese Values (Collectivism)	**.26**	.21
CSE-Identity	**.66**	-.02
Chinese Behaviour	-.02	**.93**
Eigenvalue	2.92	1.03
Percentage of Variance	48.48	17.18
Canadian Identity	One Factor	
Canadian Identity (Cognitive)	**.79**	
Canadian Affirmation/ Belonging	**.93**	
Canadian Identity Achievement	**.72**	
Canadian Behaviour	**.71**	
Eigenvalue	2.85	
Percentage of Variance	71.28	

Identity, Canadian Identity, and Ethnic Evaluation. These factor scores were used in subsequent analyses. There were no gender differences on any of these four identity factors, and groups were combined for all remaining analyses.

Contact Hypothesis for Four Identity Factors

The following analyses evaluated the "contact hypothesis" which states that the more contact an individual has with a specific cultural context, the more strongly he/she will identify with that culture, and the more similar he/she will be to the members of that culture (e.g., Gurin et al., 1994). This test of the contact hypothesis was examined in relation to three specific demographic variables that index the degree of cultural contact: nativity, age of arrival, and length of residence in Canada. We expected that being born in Canada, early age of arrival, and longer length of residence in Canada would be associated with higher Canadian Identity. Being foreign-born, arriving at a later age, and shorter length of residence in Canada were expected to be associated with both higher Chinese-Internal and Chinese-External Identity. Since the Ethnic Evaluation factor was not expected, we did not form specific hypotheses related to this factor.

Differences on the four factor scores were examined by using one-way multivariate analysis of variance (MANOVA). Significant differences were probed using Scheffe's post hoc test of significance. The means, standard deviations, and F statistics associated with these analyses are presented in Table 9. Furthermore, since foreign-born participants comprised 86.4% of the overall sample, analyses were repeated in this more homogenous sample. The means, standard deviations, and F statistics associated with these analyses are presented in Table 10.

Table 9

Demographic Differences on the Four Identity Factors (Whole Sample)

Criterion	Mean (SD)			Effect
Nativity				
	Canadian-born (N = 30)	Foreign-born (N= 190)		
Chinese-Internal Id.	49.46 (8.28)	50.13 (7.00)		ns
Chinese-External Id.	37.15 (11.30)	51.97 (8.07)		Foreign > Canadian
Canadian Identity	60.16 (6.36)	48.47 (7.67)		Canadian > Foreign
Ethnic Evaluation	54.53 (8.15)	49.28 (8.19)		Canadian > Foreign
Age of Arrival				
	0-6 (N=34)	7-11 (N=38)	12+ (N=144)	
Chinese-Internal Id.	49.93 (8.00)	51.02 (7.09)	49.70 (6.80)	ns
Chinese-External Id.	38.37 (11.36)	51.71 (7.89)	52.08 (8.12)	0-6 < 7-11, 12+
Canadian Identity	59.73 (6.16)	51.85 (5.49)	47.48 (7.84)	0-6 > 7-11> 12+
Ethnic Evaluation	54.94 (7.99)	50.42 (7.98)	48.64 (8.13)	0-6 > 12+
Length of Residence, r[a]				
Chinese-Internal Id.	.03			
Chinese-External Id.	-.42**			
Canadian Identity	.55**			
Ethnic Evaluation	.28**			

Notes. [a]correlation between length of residence with four factor scores and Ns ranged from 227 to 232. * $p < .01$.

Table 10

Demographic Differences on the Four Identity Factors (Foreign-born Participants Only)

Criterion	Mean (SD)		Effect
Age of Arrival			
	Early arrival (0-11; N=42)	Late arrival (12+; N=144)	
Chinese-Internal Identity	51.25 (6.90)	49.70 (6.80)	ns
Chinese-External Identity	51.31 (7.88)	52.08 (8.12)	ns
Canadian Identity	52.30 (5.47)	47.48 (7.84)	0-11 > 12+
Ethnic Evaluation	51.15 (8.12)	48.64 (8.13)	ns
Length of Residence, r[a]			
Chinese-Internal Identity	.08		
Chinese-External Identity	-.02		
Canadian Identity	.44**		
Ethnic Evaluation	.20*		

Notes. [a]correlation between length of residence with four factor scores and Ns ranged from 191 to 201. * $p < .05$; ** $p < .01$.

Nativity

Nativity was categorized as either Canadian-born or foreign-born. The four factor scores were entered into a one-way (Nativity) MANOVA. The results revealed a significant multivariate effect, $F(4, 215) = 37.48, p = .00$. This multivariate effect was accounted for by significant univariate effects on three factors: Chinese-External Identity, $F(1, 218) = 77.53, p = .00$, Canadian Identity, $F(1, 218) = 62.83, p = .00$, and Ethnic Evaluation, $F(1, 218) = 10.67, p = .00$. Consistent with expectations, foreign-born participants reported higher Chinese-External Identity than did Canadian-born participants, who in turn reported higher Canadian Identity. However, contrary to our expectations, no significant differences were found between Canadian-born and foreign-born participants in their Chinese-Internal Identity. In addition, foreign-born participants reported lower Ethnic Evaluation than Canadian-born participants.

Age of Arrival

The age of arrival in Canada was also examined in relation to the four factor scores. Age of arrival was categorized into three groups: age 0 to 6 (early arrival), 7 to 11 (mid arrival), and 12 and older (late arrival). Participants who were born in Canada were included in the first group. The four factor scores were entered into a one-way (Age of Arrival) MANOVA. The results revealed a significant multivariate effect, $F(4, 210) = 15.81, p = .00$. This multivariate effect was accounted by significant univariate effects on three factors: Chinese-External Identity, $F(2, 213) = 35.45, p = .00$, Canadian Identity, $F(2, 213) = 40.65, p = .00$, and Ethnic Evaluation, $F(2, 213) = 8.45, p = .00$. No significant univariate effect was found for Chinese-Internal Identity. The nature of these

significant univariate effects was evaluated with Sheffe's post hoc test. Consistent with expectations, participants arriving in Canada at a younger age reported higher Canadian Identity than those arriving later. Participants arriving later reported higher Chinese-External Identity than participants arriving earlier. Specifically, participants arriving between 0 and 6 years old reported higher Canadian Identity than those arriving later, and participants arriving between 7 and 11 years old reported higher Canadian Identity than those arriving after 12 years old. Participants arriving after age 6 reported higher Chinese-External Identity than those arriving between age 0 and 6. However, contrary to our expectations, no significant effect of age of arrival was found in participants' Chinese-Internal Identity. In addition, participants arriving early (between 0 to 6) reported higher Ethnic Evaluation than those arriving late (after 11 years old).

Age of arrival was then examined among the foreign-born participants only. Due to the small sample size of early arriving and mid arriving groups within the foreign-born participants, age of arrival was categorized into two groups (instead of three groups): early arrival (0-11) and late arrival (12+). The four factor scores were entered into a one-way (Age of Arrival) MANOVA. The results revealed a significant multivariate effect, F (4, 181) = 3.91, p = .00 (see Table 10). This multivariate effect was accounted for by a significant univariate effect on one factor: Canadian Identity, F (1, 184) = 13.87, p = .00. Consistent with expectations, participants arriving earlier (0-11) in Canada reported higher Canadian Identity than participants arriving later (12+). However, contrary to our expectations, no significant effect of age of arrival was found in participants' Chinese-Internal Identity or Chinese-External Identity. In addition, there were no significant

differences in Ethnic Evaluation.

Length of Residence

Participants' length of residence in Canada was examined in relation to the four factors by bivariate correlation. Current age was used for length of residence for the participants who were born in Canada. Consistent with expectations, length of residence was positively associated with Canadian Identity, and negatively associated with Chinese-External Identity (see Table 9). However, contrary to expectations, length of residence was not associated with Chinese-Internal Identity. Length of residence was also positively associated with Ethnic Evaluation.

When examining the relationship between length of residence and identity variables among the foreign-born participants (see Table 10), length of residence was positively associated with Canadian Identity in an expected direction. However, unexpectedly, it was not related to Chinese-Internal Identity or Chinese-External Identity. Due to a strong relationship between Chinese-External Identity and nativity, the correlation between Chinese-External Identity and length of residence is significant across the whole sample, whereas it becomes non-significant within the foreign-born subgroup. Finally, as in the whole sample, a longer length of residence in Canada was associated with higher Ethnic Evaluation.

Comparing Cultural Contact Demographic Variables

There is a lack of consensus as to which demographic variable should be examined in relation to identity variables. Studies of ethnic identity and acculturation almost always examine the generational status or nativity of ethnic minority members,

and sometimes length of residence. The three cultural contact demographic variables (nativity, length of residence, age of arrival) all demonstrated a fairly consistent pattern of relationship with the identity variables in the whole sample and the foreign-born sub-sample. Regression analyses were conducted in the whole sample and among the foreign-born participants to evaluate which of the above cultural contact demographic variables accounted for the most variance in individuals' four identity scores when they were considered simultaneously.

Each identity variable was regressed on the three cultural contact variables in the whole sample. These analyses were then repeated in the foreign-born sub-sample with two cultural contact variables (since nativity status is irrelevant to this sub-sample). The results are presented in Table 11. None of the cultural contact variables was significant in predicting Chinese-Internal Identity in either sample. Nativity status significantly predicted Chinese-External Identity in the whole sample. In the foreign-born sub-sample, neither remaining demographic variable predicted Chinese-External Identity. Longer length of residence was significantly associated with higher Canadian Identity and more positive Ethnic Evaluation in both the whole sample and the foreign-born sub-sample.

Finally, the above regression analyses were repeated, after including controls for participants' gender and chronological age in the whole sample. Gender and age were entered in the first step and the three cultural contact variables were entered simultaneously in the second step. The results are presented in Table 12. Age was significantly positively associated with Chinese-Internal Identity and Ethnic Evaluation, and negatively associated with Canadian Identity. Gender was unrelated to any identity

Table 11

Simultaneous Regression Analyses to Predict Four Identity Factors from Cultural Contact

Variables Entered	Whole Sample			Foreign-born Sub-sample		
	R^2	Beta	F	R^2	Beta	F
			Criterion: Chinese-Internal Identity			
Nativity	.01	-.20	.97	.01	N/A	1.03
Length of Residence		.13			.06	
Age of Arrival		-.09			-.06	
			Criterion: Chinese-External Identity			
Nativity	.27	-.49**	28.11**	.00	N/A	.14
Length of Residence		.07			-.00	
Age of Arrival		.11			.04	
			Criterion: Canadian Identity			
Nativity	.30	-.01	31.92**	.19	N/A	21.93**
Length of Residence		.29**			.43**	
Age of Arrival		-.19			-.01	
			Criterion: Ethnic Evaluation			
Nativity	.09	-.09	7.45**	.05	N/A	4.94**
Length of Residence		.29*			.22*	
Age of Arrival		-.10			.00	

Note: N/A = Not Applicable. * $p < .05$; ** $p < .01$

Table 12

Simultaneous Regression Analyses to Predict Four Identity Factors from Cultural Contact (Controlling for Gender and Age)

Step	Variable Entered	R^2	ΔR^2	Beta	F for Change
		Criterion: Chinese-Internal Identity			
1	Gender	.04		-.10	
	Age			.18*	
2	Nativity	.05	.01	-.15	.67
	Length of Residence			-.01	
	Age of Arrival			-.17	
		Criterion: Chinese-External Identity			
1	Gender	.00		.08	
	Age			-.03	
2	Nativity	.28	.28	-.47**	28.88**
	Length of Residence			.19	
	Age of Arrival			.24	
		Criterion: Canadian Identity			
1	Gender	.01		.02	
	Age			-.19**	
2	Nativity	.33	.32**	-.02	34.36**
	Length of Residence			.59**	
	Age of Arrival			.00	(table continues)

Step	Variable Entered	R^2	ΔR^2	Beta	F for Change
		Criterion: Ethnic Evaluation			
1	Gender	.03		-.07	
	Age			.17*	
2	Nativity	.12	.09**	-.07	7.03**
	Length of Residence			.12	
	Age of Arrival			-.24	

* $p < .05$; ** $p < .01$

factor. Nativity remained significantly associated with Chinese-External Identity, and longer length of residence remained significantly associated with Canadian Identity, after controlling for chronological age. However, after controlling for age, length of residence was no longer associated with Ethnic Evaluation. Similar regression analyses were performed with the foreign-born participants only. The results paralleled the findings for the whole sample[3].

In sum, contrary to our expectations, none of the three cultural contact variables was associated with Chinese-Internal Identity. On the other hand, as expected, Chinese-External Identity was associated with nativity status (foreign-born), shorter length of residence, and later age of arrival in Canada. In addition, Nativity remained a significant predictor when examining all three cultural contact demographic variables together, after controlling for chronological age. Canadian Identity was associated with nativity status (Canadian-born), earlier age of arrival, and longer length of residence; furthermore, length of residence remained a significant predictor when the three cultural contact demographic variables were considered together after controlling for chronological age. Ethnic Evaluation demonstrated a similar pattern of relationship with these cultural contact variables as Canadian Identity. That is, nativity (Canadian-born), earlier age of arrival, and longer length of residence in Canada were associated with more positive Ethnic Evaluation. Similarly, length of residence remained the only significant predictor when these three cultural contact variables were considered together. However, unlike Canadian Identity, after controlling for chronological age, none of the cultural contact variables were related to Ethnic Evaluation.

Cluster Analyses

Cluster analyses were performed to classify individuals into distinct groups based on the constellation of their factor scores on Chinese-Internal Identity, Chinese-External Identity, Canadian Identity, and Ethnic Evaluation. There are two general types of clustering methods: hierarchical agglomerative and iterative partitioning. The hierarchical agglomerative method builds clusters sequentially by merging similar cases until there is no case to be merged. On the other hand, iterative partitioning cluster analyses divide the data into a specified number of clusters, and each data point is then assigned to the cluster to which it is closest (Aldenderfer & Blashfield, 1984). Usually, the most useful solutions are obtained by employing iterative partitioning clustering for the final solution based on the number of clusters derived from hierarchical agglomerative clustering methods (Borgen & Barnett, 1987). This is the approach taken by the current study.

Primary Cluster Analyses

Clustering Method

Within both the hierarchical agglomerative and iterative partitioning methods, there are a large number of clustering methods available and no specific guidelines for selecting a particular one is established yet (Everitt, 1993). For the hierarchical agglomerative method, Ward's method was chosen because evidence from a number of Monte-Carlo type investigations showed that it performs well on a variety of data types (Hands & Everitt, 1987; Kuiper & Fisher, 1975). *K*-means clustering is considered optimal among iterative partitioning clustering methods when the probable number of

clusters can be specified in advance (Borgen & Barnett, 1987). Thus, in the current study, clusters were first derived with Ward's method (using squared Euclidean distance as the measure of similarity). After determining the number of clusters, k-means clustering was employed for the final solution.

Ward's Method

Several approaches to determine the resulting cluster solution are recommended in the literature (Milligan & Cooper, 1985). One of the most recommended objective methods is Mojena's Rule One (Mojena, 1977). This method uses the distribution of the clustering criterion (the within-group sum of squares) to determine when a significant change from one stage to the next implies a partition which should not be undertaken. Three values are needed in the formula: the mean of the distribution of the clustering criteria, the unbiased standard deviation of their distribution, and the standard deviate *k*. Mojena found that values of *k* in the range of 2.75 and 3.50 give the best overall results. Lorr (1983) found, on the other hand, that Mojena's rule worked equally well when using $k = 3.0$ and $k = 3.5$. The formula for Mojena's Rule One is as follows:

$$\text{Alpha} = \text{Mean} + k * \text{Standard Deviation}$$

Therefore, the current study uses Mojena's rule as well as visual examination of the dendrogram and fusion coefficients to determine the optimal number of clusters. These analyses suggested that the optimal number of clusters was 4 or 5. The fusion coefficients showed a clean jump (4008.22) when five clusters were merged into four, which indicated dissimilarity in the clusters that were merged. In contrast, the jump between the merging of six clusters into five (2354.06) was relatively small (see Figure

2). Therefore, a 5-cluster solution was determined as the most optimal for the current sample[4].

K-Means Clustering

A *k*-means cluster analysis was conducted by specifying a 5-cluster solution. The analyses converged in 15 iterations. A MANOVA was performed using the four factor scores as dependent variables and the cluster groups as independent variables in order to describe cluster membership and name the clusters. The results of this 5-cluster solution are presented in Table 13 and in Figure 3. The MANOVA revealed a significant multivariate effect, $F(4, 212) = 38.42$, $p = .000$. This multivariate effect was accounted for by significant univariate effects on all four factor scores: Chinese-Internal Identity, $F(4, 215) = 47.85$, $p = .00$, Chinese-External Identity, $F(4, 215) = 96.35$, $p = .00$, Canadian Identity, $F(4, 215) = 49.88$, $p = .00$, and Ethnic Evaluation, $F(4, 215) = 81.06$, $p = .00$. The nature of these significant univariate effects was evaluated with Scheffe's post hoc test.

Participants in Cluster 1 reported higher Chinese-Internal Identity than those in Cluster 2 and 4, who in turn were higher than those in Cluster 3 and 5. No significant difference in Chinese-Internal Identity was found between participants in Cluster 2 and Cluster 4, and between participants in Cluster 3 and Cluster 5. Participants in Cluster 1 reported higher Chinese-External Identity than those in Cluster 5, Cluster 4, and Cluster 3. Participants in Cluster 2 and Cluster 5 reported higher Chinese-External Identity than those in Cluster 4, who in turn scored higher than those in Cluster 3. For Canadian Identity, participants in Cluster 3, Cluster 1, and Cluster 4 reported similar levels and all

Figure 2

Coefficient Jump between Clusters

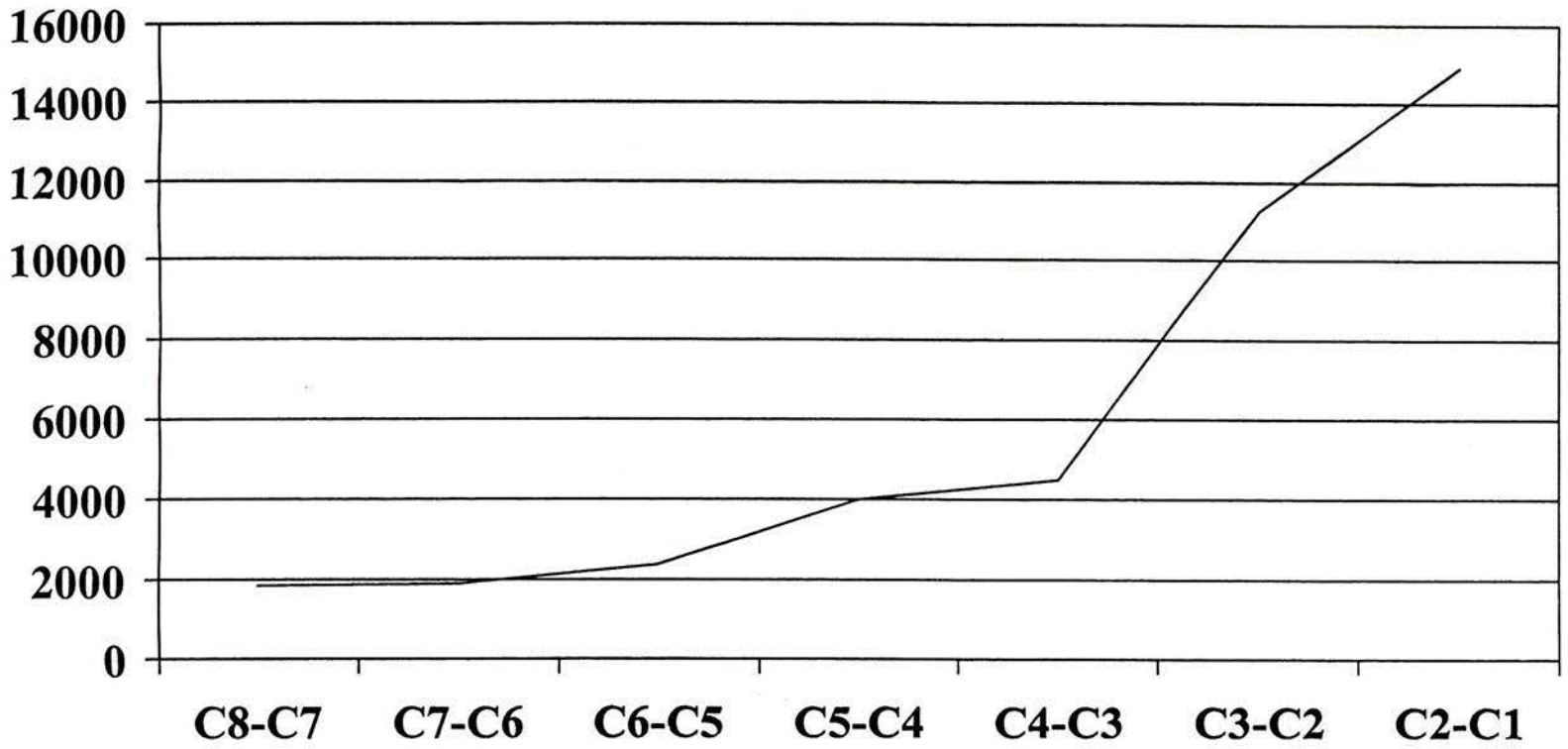


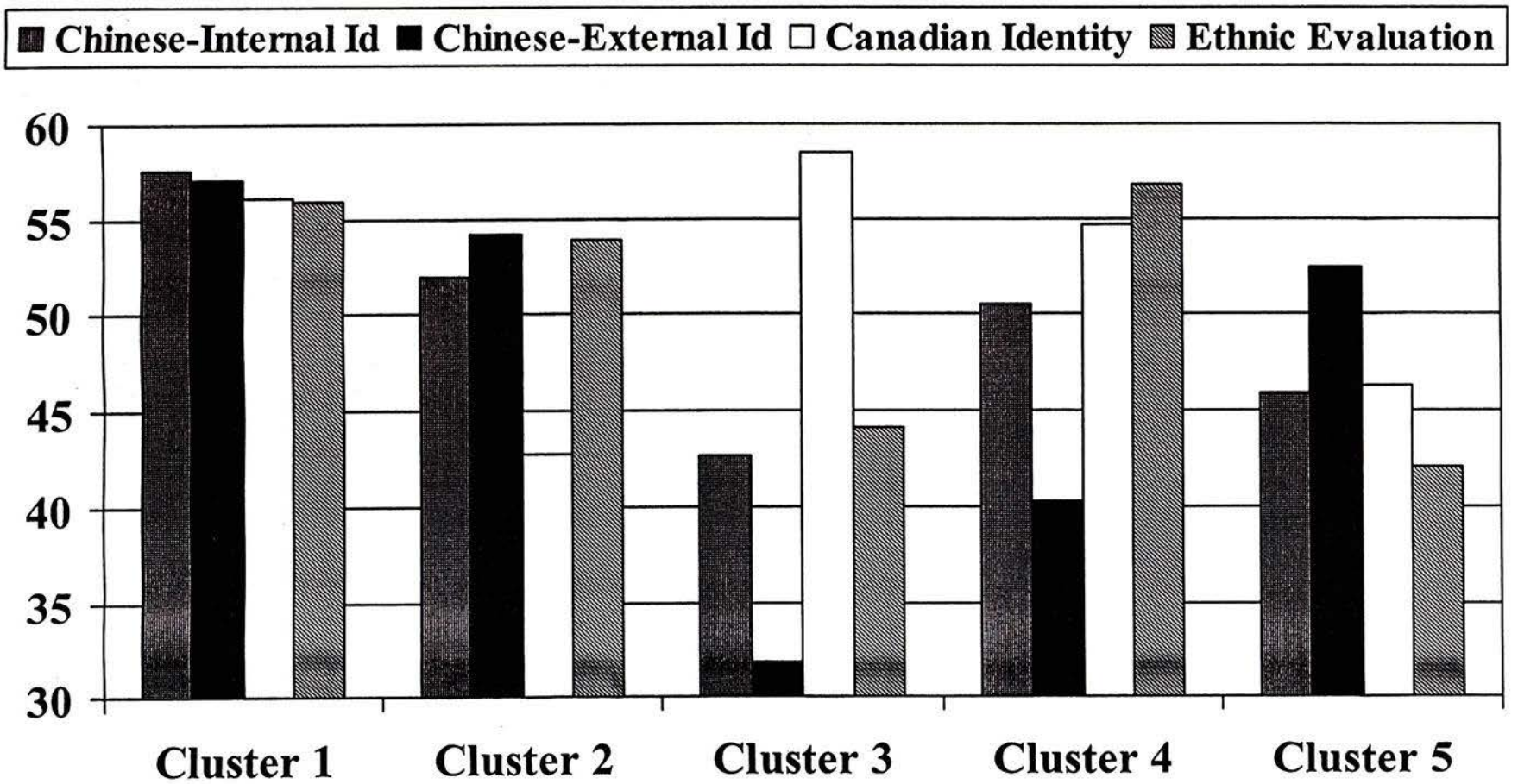
Table 13

Means and Standard Deviations for Cluster Differences on the Four Identity Factors

Criterion	Predictor					Effect
	Cluster 1 (N = 46)	Cluster 2 (N = 48)	Cluster 3 (N =22)	Cluster 4 (N = 33)	Cluster 5 (N = 71)	
Chinese-Internal Identity	57.67 (6.21)	51.96 (4.85)	42.61 (5.31)	50.51 (4.55)	45.89 (5.16)	1 > 2, 4 > 3, 5
Chinese-External Identity	57.11 (5.03)	54.22 (5.16)	31.90 (7.86)	40.30 (6.89)	52.49 (6.01)	1> 5, 4, 3 2, 5 > 4 > 3
Canadian Identity	56.16 (5.61)	42.77 (5.12)	58.54 (7.03)	54.75 (6.98)	46.23 (6.50)	1, 3, 4 > 2, 5
Ethnic Evaluation	56.01 (6.40)	53.91 (4.78)	44.14 (7.67)	56.90 (4.16)	42.05 (4.47)	1, 2, 4 > 3, 5

Notes. Cluster 1 is the Dual Cultural Identity Group. Cluster 2 is the Chinese Identity Group. Cluster 3 is the Canadian Identity Group. Cluster 4 is the Dual Cultural Identity-Low Chinese Behaviour Group. Cluster 5 is the Unidentified-High Chinese Behaviour Group. * $p < .05$; ** $p < .01$

Figure 3 Five Cluster Solution



three were higher than those in Cluster 2 and Cluster 5. Lastly, participants in Cluster 4, Cluster 1, and Cluster 2 reported higher Ethnic Evaluation than those in Cluster 3 and Cluster 5.

Description of Profile for Each Cluster

One sample t-tests were performed in order to evaluate where scores on specific factors within each cluster differed significantly from the mean of 50 (i.e., if scores should be considered generally high or low). Paired t-tests were also performed in order to examine if factor scores significantly differed from each other within each cluster[5]. Based on the results of the above MANOVA and these t-tests, the five clusters were named. The following analyses describe the characteristics of participants in each cluster. Relevant descriptive statistics are presented in Table 14.

Cluster 1: Dual Cultural Identity Group (N = 46; 20.9% of the sample)

Participants in this cluster score significantly above the mean on all four factors (Chinese-Internal Identity, Chinese-External Identity, Canadian Identity, and Ethnic Evaluation). In fact, their scores on the four identity factors are among the highest across all clusters. Therefore, participants in this cluster report strong Chinese-Internal Identity, Chinese-External Identity, Canadian Identity, and Ethnic Evaluation. They view themselves strongly as a Canadian and also as a Chinese (both internally and externally). They perceive the Chinese as a group that is viewed positively by others and also by themselves.

People in this cluster have an average age of 22.4, similar to people in the other four clusters (no significant difference was found in age across the five clusters). Their

Table 14

Descriptions of Clusters based on Demographics, Language Use, and Proficiency (Means & SD or Column Counts & Percentage)

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	F or X^2
Age, M (SD)						.61
	22.4 (3.3)	22.1 (2.6)	21.6 (3.3)	22.9 (3.8)	22.0 (3.0)	
Gender						5.98
Male	20 (43%)	15 (31%)	6 (27%)	15 (46%)	35 (49%)	
Female	26 (57%)	33 (68%)	16 (73%)	18 (54%)	36 (51%)	
Nativity						74.23**
Foreign-born	42 (91%)	48 (100%)	10 (45%)	19 (58%)	71 (100%)	
Canadian-born	4 (9%)	0 (0%)	12 (55%)	14 (42%)	0 (0%)	
Age of Arrival (foreign-born)						28.86**
Early arrival (0-6)	1 (2%)	0 (0%)	0 (0%)	3 (16%)	0 (0%)	
Mid arrival (7-11)	12 (29%)	6 (13%)	2 (20%)	7 (37%)	11 (16%)	
Late arrival (12+)	28 (68%)	40 (87%)	8 (80%)	9 (47%)	59 (84%)	
Country of Origin (foreign-born)						11.99
China	2 (5%)	5 (11%)	2 (20%)	2 (11%)	3 (4%)	
Taiwan	21 (50%)	29 (63%)	7 (70%)	12 (67%)	37 (53%)	
Hong Kong	19 (45%)	12 (26%)	1 (10%)	4 (22%)	30 (43%)	
Length of Residence, M (SD)						29.42**
	9.8 (4.5)	6.7 (3.3)	15.4 (7.2)	15.8 (8.1)	7.1 (2.8)	3, 4 > 1, 2, 5

(table continues)

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	F or X^2
Length of Residence (foreign-born participants), M (SD)						5.79**
	8.71	6.69	8.80	10.26	7.14	4 > 2, 5
Language Use at Home						47.93**
Ethnic Language	40 (87%)	47 (98%)	11 (50%)	16 (52%)	64 (91%)	
English	6 (13%)	1 (2%)	11 (50%)	15 (48%)	6 (9%)	
Language Use outside the Home						41.48**
Ethnic Language	19 (45%)	31 (72%)	2 (9%)	5 (15%)	39 (60%)	
English	23 (55%)	12 (28%)	20 (91%)	28 (85%)	26 (40%)	
English Proficiency, M (SD)						4.18**
	3.1 (.7)	2.7 (.5)	3.4 (.8)	3.3 (.7)	2.5 (.5)	1, 3, 4 > 2, 5
Ethnic Language Proficiency, M (SD)						4.11**
	3.4 (.6)	3.3 (.6)	2.4 (.9)	2.5 (.8)	3.1 (.7)	1, 2, 5 > 3, 4

Notes. Cluster 1 is Dual Cultural Identity Group. Cluster 2 is Chinese Identity Group. Cluster 3 is Canadian Identity Group. Cluster 4 is Dual Cultural Identity-Low Chinese Behaviour Group. Cluster 5 is Unidentified-High Chinese Behaviour Group. * $p < .05$; ** $p < .01$.

length of residence in Canada averages around 9.8 years, which is relatively shorter than some other clusters. Members of this cluster are fairly even divided between males and females. The majority (91%) are foreign-born, and over sixty percent came to Canada after the age of 12. Since almost eighty percent of the participants in the current study came from either Taiwan or Hong Kong, it is not surprising that the majority (95%) of people in this cluster are also from either Taiwan or Hong Kong. Members of this cluster mostly use their ethnic language at home, and about half also use their ethnic language outside the home. People in this cluster report good proficiency in both their ethnic language and English.

Cluster 2: Chinese Identity Group (N = 48; 21.8% of the sample)

Participants in this cluster score significantly above the mean on Chinese-Internal Identity, Chinese-External Identity, and Ethnic Evaluation, and significantly below the mean on the measure of Canadian Identity. Within the three ethnic-related identity variables, what makes this cluster unique is the very high score on Ethnic Evaluation (one of the highest across the five clusters). Members in this cluster highly value the Chinese group, and perceive the Chinese as valued highly by others. When examining the four identity scores within Cluster 2, scores on Ethnic Evaluation are also moderately higher than the scores on Chinese-Internal Identity ($p = .05$). Therefore, people in this cluster report higher levels of evaluation of the Chinese than levels of Chinese identity. In addition, scores on Chinese-Internal Identity and Chinese-External Identity are among the highest across the clusters, but not as high as those of Cluster 1.

People in this cluster have an average age of 22.1 years. Their length of residence

in Canada is 6.7 years, which is one of the shortest across all clusters. About one-third of the members are male and two-thirds are female. All of the participants in this cluster are foreign-born, and the majority came to Canada after the age of 12. About sixty percent are from Taiwan, and relatively fewer are from Hong Kong. They mostly speak an ethnic language at home and outside the home. They report higher ethnic language proficiency and lower English proficiency than clusters characterized with strong Canadian identity (i.e., Cluster 3 and Cluster 4). Participants in Cluster 1 and Cluster 2 are similar except for their language use, with those in Cluster 1 using more English outside the home and having greater English language proficiency.

Cluster 3: Canadian Identity Group (N = 22; 10% of the sample)

Cluster 3 is the smallest cluster found in the sample. People in this cluster score significantly above the mean on Canadian Identity, and their scores on this factor are the highest of the clusters. They score significantly below the mean on the three ethnic-related identity variables. Their score on Chinese-External Identity is the lowest among the three ethnic-related variables within Cluster 3, and it is also the lowest of the clusters. What particularly characterizes people in this cluster is a strong Canadian Identity and a weak Chinese identity, particularly a lack of ethnic-related behaviours.

People in this cluster are on average 21.6 years old. Almost 75% are female. Participants in this cluster (similar to those in Cluster 4) have a long length of residence in Canada. Approximately half of the participants in this cluster are foreign-born and the other half are Canadian-born. In fact, Cluster 3 and Cluster 4 are the only clusters with a significant representation of people who were born in Canada, whereas the other three

clusters are mostly comprised of foreign-born participants. Among the foreign-born participants, the majority are from Taiwan, and about eighty percent came after the age of 12. They use an ethnic language and English roughly equally at home, and the majority use English outside the home. They report lower ethnic language proficiency and higher English proficiency than other groups.

Cluster 4: Dual Cultural Identity-Low Chinese Behaviour Group (N = 33; 15% of the sample)

People in this cluster score significantly above the mean on Canadian Identity and Ethnic Evaluation, and significantly below the mean on Chinese-External Identity. Scores on Chinese-Internal Identity are around the mean. What separates this cluster from Cluster 1 (Dual Cultural Identity Group) is its low score on Chinese-External Identity (the second lowest among clusters) and its relative lower on Chinese-Internal Identity (although it is still around the mean). When looking at the four identity scores within this cluster, scores on Chinese-External Identity differ significantly from the other identity measures. Therefore, people in this group see themselves strongly as Canadian and moderately as Chinese, and they evaluate the Chinese group very positively. However, they do not practice many Chinese behaviours.

People in this cluster are on average 22.9 years old, and are fairly evenly divided between males and females. Like the participants in Cluster 3, people in this cluster have a longer length of residence in Canada than people in other clusters. Over half of the participants in this cluster are foreign-born and the other half are Canadian-born. Among the foreign-born, most came to Canada either between 7 and 11 years of age or after the

age of 12. However, there are only 4 early arriving participants in the foreign-born sub-sample, and three of them are in this cluster. Therefore, early arriving participants are more likely to be in this cluster. This is similar to the fact that majority of Canadian-born participants are either in Cluster 3 or Cluster 4. Among the foreign-born, most come from Taiwan, with fewer people from Hong Kong and China. Like the participants in Cluster 3, they use both ethnic language and English relatively equally at home, but use English predominantly outside the home. Also like the participants in Cluster 3, they report lower ethnic language proficiency and higher English proficiency than other groups. When looking at the demographic and language profiles, participants in Cluster 3 and Cluster 4 are virtually indistinguishable. They differ from each other primarily based on their identity (i.e., the four factors that these two clusters are based upon).

Cluster 5: Unidentified-High Chinese Behaviour Group (N = 71; 32.3% of the sample)

Cluster 5 is the largest of all the clusters found in the current study. Participants in this group score significantly below the mean on all identity measures, except for the Chinese-External Identity, which is significantly above the mean. In other words, people in this cluster do not strongly identify with Chinese or Canadian culture, but they actually practice many Chinese behaviours (the second highest among the clusters).

People in this cluster have an average age of 22 years, and are fairly evenly divided between males and females. None is Canadian-born, and the majority came to Canada after the age of 12. About half come from Taiwan and half from Hong Kong. Of all the foreign-born participants across the five clusters, 57 percent are from Taiwan and 35 percent are from Hong Kong. Therefore, most clusters are characterized with a much

higher proportion of people from Taiwan and a relatively small proportion from Hong Kong, with two exceptions, Cluster 1 and Cluster 5. In these two clusters, participants from Taiwan and Hong Kong are roughly equally represented. In addition, people in Cluster 5 use an ethnic language predominantly at home, and over half use their ethnic language outside the home. Although they report higher ethnic language proficiency than participants in Cluster 3 and Cluster 4, they do not differ in their ethnic language proficiency from those in Cluster 1 and Cluster 2. They also report the lowest levels of English proficiency.

Relationship Between Ethnic Identity and Acculturation

Across the Whole Sample

Next set of analyses concerns the relationship between acculturation (Canadian Identity) and ethnic identity (Chinese-Internal Identity and Chinese-External Identity). We proposed that these two processes are independent of each other; that is, we expected that both Chinese-Internal Identity and Chinese-External Identity to be orthogonal in relation to Canadian Identity.

In order to establish an orthogonal relationship between two constructs, the most common approach is to examine the correlation between them. If two constructs are not significantly and negatively correlated, they are considered to be orthogonal. In addition, if both constructs demonstrate unique relationships with a third variable, this can serve as additional evidence to support the orthogonal relationship between two constructs (Ryder, Alden, & Paulhus, 2000). To examine the relationship between ethnic identity and acculturation, the correlations among the four identity factors were examined. These

correlations are presented in Table 15. Chinese-Internal Identity and Canadian Identity were moderately but positively correlated. Furthermore, in the preceding analyses, Chinese-Internal Identity and Canadian Identity demonstrated unique relationships with "third variables" (e.g., length of residence, self-esteem). Consistent with expectations, these results suggest that Chinese-Internal Identity and Canadian Identity are orthogonal.

On the other hand, the relationship between Chinese-External Identity and Canadian Identity was not orthogonal, but bipolar. First, they were significantly negatively correlated. In addition, although each demonstrated different relationships with various "third variables" (i.e., nativity), such relationships were generally inversely related. For instance, foreign-born participants reported higher Chinese-External Identity than Canadian-born participants, who in turn reported higher Canadian Identity. Earlier age of arrival and longer length of residence in Canada were associated with higher Canadian Identity and lower Chinese-External Identity. Therefore, the orthogonal relationship between Chinese-External Identity and Canadian Identity was not supported.

Within Each Cluster

As a further test of the relationship between ethnic identity and acculturation, we next explored their relationships within each of the five clusters. These analyses evaluated the possibility that ethnic identity and acculturation were orthogonal constructs within some clusters but not others. The results are summarized in Table 16. Canadian Identity and Chinese-Internal Identity were not significantly related in Cluster 1, clearly indicating an orthogonal relationship. In Cluster 3, Cluster 4, and Cluster 5, they were either negatively related but not significantly, or they were significantly positive related.

Table 15

Bivariate Correlation Coefficients among Four Identity Factors

	Chinese-Internal Identity	Chinese-External Identity	Canadian Identity	Ethnic Evaluation
Chinese-Internal Identity	---			
Chinese-External Identity	.38**	---		
Canadian Identity	**.14***	**-.26****	---	
Ethnic Evaluation	.57**	.05	.22**	---

Notes. Due to missing data, Ns. ranged from 221 to 233. * $p < .05$; ** $p < .01$.

Table 16

Bivariate Correlation Coefficients between Acculturation (Canadian Identity) and Ethnic Identity (Chinese-Internal Identity and Chinese-External Identity) within Each Cluster

	Canadian Identity and Chinese-Internal Identity	Canadian Identity and Chinese-External Identity
Cluster 1	.06	-.25
Cluster 2	-.52**	-.05
Cluster 3	-.19	-.25
Cluster 4	.36*	.44**
Cluster 5	.38**	.10

Notes. Cluster 1 is Dual Cultural Identity Group. Cluster 2 is Chinese Identity Group. Cluster 3 is Canadian Identity Group. Cluster 4 is Dual Cultural Identity-Low Chinese Behaviour Group. Cluster 5 is Unidentified-High Chinese Behaviour Group. * $p < .05$; ** $p < .01$

Therefore, the relationship was clearly not bipolar in these three clusters. Lastly, they were significantly negatively correlated in Cluster 2, clearly indicating a bipolar relationship. Overall, the relationship between Chinese-Internal Identity and Canadian Identity was orthogonal or non-bipolar in most clusters, which was similar to their relationship when the whole sample was examined. However, they were bipolar in Cluster 2, which is the opposite of the orthogonal relationship that was found across the whole sample.

Chinese-External Identity and Canadian Identity were not related in Cluster 2 and Cluster 5, clearly indicating an orthogonal relationship. They were also somewhat but non-significantly related in Cluster 1 and Cluster 3, and significantly positive related in Cluster 4, both of which indicate a non-bipolar relationship between. Overall, these correlations revealed either an orthogonal or non-bipolar relationships between Chinese-External Identity and Canadian Identity across five clusters. That is the opposite of the bipolar relationship that was found when the whole sample was examined. In summary, except for the clearly non-orthogonal relationship between Canadian Identity and Chinese-Internal Identity in Cluster 2, all other relationships between Chinese-Internal Identity and Canadian Identity, and between Chinese-External Identity and Canadian Identity were either non-bipolar or orthogonal.

Relationship between Identity and Psychological Well-being

The final set of analyses concerns the relationship between cultural identities and three psychological well-being which is first examined with a variable-centred approach, and then with a pattern-centred approach.

Variable-Centred Approach

The four identity factors (Chinese-Internal Identity, Chinese-External Identity, Canadian Identity, Ethnic Evaluation) were next examined in relation to participants' psychological well-being. Past research has failed to reveal consistent relationships among ethnic identity, acculturation, and individual's psychological well-being. For example, some studies report a positive relationship between ethnic identity and psychological well-being (Phinney & Chavira, 1992), but others find no relationship (Rosenthal & Cichello, 1986). Similar mixed findings are also found in the relationship between acculturation and psychological well-being. The current study examined both processes individually by examining the relationship of the four identity factors with three well-being indicators. Self-esteem, depressive symptoms, and acculturative stress were chosen as indicators of participants' psychological well-being. No specific hypotheses were proposed regarding the relationship of each of the four identity variables with the three psychological well-being outcomes.

Regression analyses were conducted to test which of the four identity factors accounted for the most variance in individuals' psychological well-being. Based on preliminary analyses, nativity (but not length of residence) was significantly related to the three well-being indicators[6]. In order to account for potential confounds, nativity was entered along with gender and age as control variables in Step 1. The four identity variables were entered simultaneously in Step 2. These analyses were conducted in the whole sample and also within the foreign-born sub-sample. The results are presented in Table 17.

Table 17

Simultaneous Regression of Psychological Well-being on the Four Identity Factors (Controlling for Gender, Age, and Nativity)

Step	Variable Entered	Whole Sample				Foreign-born Sub-sample			
		R^2	ΔR^2	Beta	FΔ	R^2	ΔR^2	Beta	FΔ
				Criterion: Self-Esteem					
1	Gender	.17		-.04		.06		-.06	
	Age			.17**				.20**	
	Nativity			.23**				N/A	
2	Chinese-Internal Id[a]	.26	.09**	-.17*	6.40**	.19	.13**	-.16	7.13**
	Chinese-External Id			.02				.06	
	Canadian Id			.14*				.13	
	Ethnic Evaluation			.34**				.39**	
3	CI[x]EE[b]	.29	.03*	1.63*	7.89**	.23	.04*	1.95**	8.73**
				Criterion: Depressive Symptoms					
1	Gender	.15		.01		.03		.02	
	Age			-.15**				-.16*	
	Nativity			-.36**				N/A	
2	Chinese-Internal Id	.23	.07**	.22*	4.46**	.13	.10**	.20*	5.05**
	Chinese-External Id			-.20*				-.21**	
	Canadian Id			-.07				-.04	
	Ethnic Evaluation			-.27**				-.31**	
3	CI[x]EE	.23	.00	-.44	.51	.13	.00	-.65	.82

(table continues)

Step	Variable Entered	Whole Sample				Foreign-born Sub-sample			
		R^2	ΔR^2	Beta	FΔ	R^2	ΔR^2	Beta	FΔ
				Criterion: Acculturative Stress					
1	Gender	.14		-.02		.01		-.02	
	Age			.06				.07	
	Nativity			-.29**				N/A	
2	Chinese-Internal Id	.25	.11**	.34**	7.78**	.12**	.12**	.31**	6.10**
	Chinese-External Id			-.14				-.14	
	Canadian Id			-.11				-.10	
	Ethnic Evaluation			-.38**				-.37**	
3	CI^xEE	.26	.01	.80	1.83	.13	.00	.40	.33

Note. [a]Due to limited space, "identity" here is abbreviated as "id." [b]CI^xEE is the interaction term of Chinese-Internal Identity and Ethnic Evaluation. * $p < .05$; ** $p < .01$.

The results showed that higher self-esteem was predicted by older age, being born in Canada, lower Chinese-Internal Identity, higher Canadian Identity, and higher Ethnic Evaluation. Depressive symptoms were predicted by younger age, being foreign-born, higher Chinese-Internal Identity, lower Chinese-External Identity, and lower Ethnic Evaluation. Higher acculturative stress was predicted by being foreign-born, higher Chinese-Internal Identity, and lower Ethnic Evaluation. The results within the foreign-born sub-sample paralleled these findings, with one difference in the beta weight of Chinese-Internal Identity (-.17, -.16) when predicting participants' self-esteem.

One surprising finding was that Ethnic Evaluation consistently functioned as a suppressor variable for the relationship between Chinese-Internal Identity and psychological well-being. As shown in Table 17, the beta weight for the Chinese-Internal Identity main effect in predicting self-esteem (-.17), depressive symptoms (.22), and acculturative stress (.34) was absolutely larger than the zero-order correlations with these three indicators (.06, -.01, .09, respectively). In addition, Chinese-Internal Identity was significantly positively related with Ethnic Evaluation ($r = .57, p = .00$). According to Lutz (1983) and Conger (1974), the present results illustrate the case where a suppressor variable (i.e., Ethnic Evaluation) correlates positively with the criterion (i.e., psychological well-being). One of its functions in the multiple regression is to suppress a portion of the variance in the suppressed variable (i.e., Chinese-Internal Identity) that is irrelevant to the criterion variable. Once such variance is removed, the relationship between the suppressed variable and the criterion variable grows clearer and stronger. Therefore, in the current study, there was a "net increase" in the predictive contribution

of Chinese-Internal Identity due to the suppressor effect of Ethnic Evaluation. The increased association showed that Chinese-Internal Identity had a significant negative relationship with psychological well-being. Thus, removing the portion of variance in Chinese-Internal Identity that related to Ethnic Evaluation increased the inverse relationship between Chinese-Internal Identity and psychological well-being.

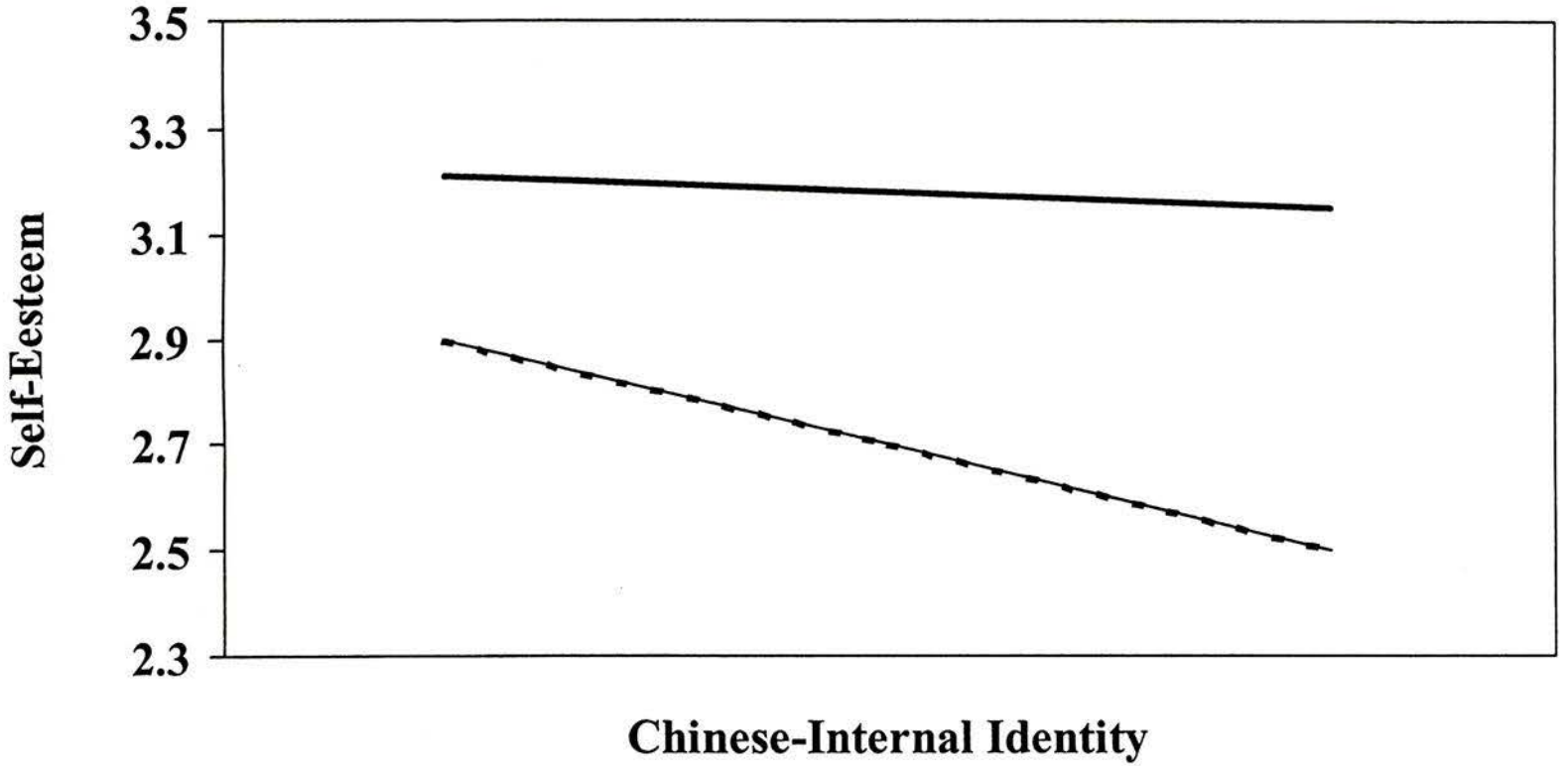
Since Ethnic Evaluation was positively associated with better psychological well-being, and since Chinese-Internal Identity was also positively associated with Ethnic Evaluation, it was the portion of variance in the Chinese-Internal Identity, not shared with Ethnic Evaluation, that had an negative relationship with psychological well-being. If Ethnic Evaluation is kept constant, greater Chinese-Internal Identity is associated with poorer psychological well-being. Therefore, it is possible that Ethnic Evaluation might buffer the adverse impact of Chinese-Internal Identity on psychological well-being. Although Ethnic Evaluation branched out as a unique factor, some portion of Chinese-Internal Identity still relates significantly to Ethnic Evaluation (shown by their high correlation). This portion may buffer against the negative impact of other aspects of Chinese-Internal Identity on psychological well-being. It appears that Chinese-Internal Identity itself is a complicated phenomenon. From an ethnic identity perspective, the multiple components relate to each other in a consistent manner, producing an overall Chinese-Internal Identity. However, their relationships with psychological well-being seem to diverge among themselves. Some aspects of ethnic identity relate to poorer and others relate to better psychological well-being. When they are combined together, the effect seems to cancel each other out, producing a non-significant relationship with

psychological well-being.

In order to explore whether other interpretations were probable regarding the relationship between Chinese-Internal Identity and psychological well-being in the context of Ethnic Evaluation, a two-way interaction variable (Chinese-Internal Identity^{x} Ethnic Evaluation) was created (after standardizing the variables). The above regression analyses were repeated so that participants' gender, age, and nativity were entered in Step 1 as control variables, the four identity variables were entered simultaneously in Step 2, and the interaction term was entered in Step 3. The results of the interaction terms are presented in Step 3 of each regression in Table 17. The Chinese-Internal Identity by Ethnic Evaluation interaction was significant in predicting self-esteem ($\beta = 1.63, p = .01$), but was not significant in predicting depressive symptoms ($\beta = -.44, p = .48$) or acculturative stress ($\beta = .80, p = .19$). In order to understand the nature of this interaction term for self-esteem, the relationship between Chinese-Internal Identity and self-esteem was calculated at high and low levels of Ethnic Evaluation. These relationships are plotted in Figure 4. Increasing levels of Chinese-Internal Identity related lower self-esteem for individuals with low Ethnic Evaluation ($\beta = -.20$). For individuals with high Ethnic Evaluation, increasing levels of Chinese-Internal Identity were unrelated to self-esteem ($\beta = -.03$). Thus, Chinese-Internal Identity was related to lower self-esteem only among participants with a low Ethnic Evaluation. Although the interaction term was not significant in predicting the other two indicators of psychological well-being, the illustration of this interaction effect provides additional support for the buffering role of Ethnic Evaluation.

Figure 4

Interaction of Ethnic Evaluation & Chinese-Internal Identity for Self-Esteem



In sum, both demographic and identity variables were significantly related to psychological well-being indicators. Older age, being Canadian-born, and a positive Ethnic Evaluation were significantly and consistently associated with the three indicators of better psychological well-being. Chinese-External Identity and Canadian Identity were related to only one indicator of well-being each. Specifically, higher Chinese-External Identity predicted few depressive symptoms, and higher Canadian Identity predicted higher self-esteem. Chinese-Internal Identity, when by itself, was not related to psychological well-being. However, it became significantly associated with poor psychological well-being when considered in the context of Ethnic Evaluation.

Pattern-Centred Approach

Next, cluster membership was examined in relation to participants' psychological well-being. It was hypothesized that participants with strong identifications with both Chinese and Canadian cultures (i.e., Cluster 1 and Cluster 4) would report the highest psychological well-being. Participants with weak identifications with both (i.e., Cluster 5) were expected to report the lowest levels of psychological well-being. Self-esteem, depressive symptoms and acculturative stress were again used as the indicators of psychological well-being. The three psychological well-being scores were entered into a one-way (Cluster Membership) MANOVA. The results are presented in Table 18. The results revealed a significant multivariate effect, $F(4, 210) = 3.09, p = .00$. This multivariate effect was accounted for by significant univariate effects on all three psychological well-being scores: self-esteem, $F(4, 212) = 8.15, p = .00$, depressive symptoms, $F(4, 212) = 4.23, p = .00$, and acculturative stress, $F(4, 212) = 3.51, p = .01$.

Table 18

Means and Standard Deviation for Cluster Differences in Psychological Well-being

Cluster 1 (N = 46)	Cluster 2 (N = 48)	Cluster 3 (N = 22)	Cluster 4 (N = 33)	Cluster 5 (N =71)	F Stats	Contrast
		Self-Esteem, M (SD)				
3.10 (.52)	2.95 (.44)	3.33 (.60)	3.15 (.50)	2.76 (.44)	8.15**	3 & 4 & 1 >5
		Depressive Symptoms, M (SD)				
.80 (.50)	.84 (.40)	.66 (.51)	.69 (.42)	1.02 (.51)	4.23**	5 > 3 & 4
		Acculturative Stress, M (SD)				
2.53 (.46)	2.58 (.48)	2.30 (.70)	2.27 (.58)	2.63 (.57)	3.51**	5 > 4

Notes. Cluster 1 is the Dual Cultural Identity Group. Cluster 2 is the Chinese Identity Group. Cluster 3 is the Canadian Identity Group. Cluster 4 is the Dual Cultural Identity-Low Chinese Behaviour Group. Cluster 5 is the Unidentified-High Chinese Behaviour Group. * $p < .05$; ** $p < .01$

As expected, participants in Cluster 5 reported the lowest levels of psychological well-being. Specifically, they had higher depressive symptoms than those in Cluster 3 and Cluster 4, higher acculturative stress than Cluster 4, and lower self-esteem than Cluster 1, Cluster 3, and Cluster 4. However, contrary to our expectations, participants in Cluster 1 did not report the highest level of psychological well-being. Instead, Cluster 3 and, particularly, Cluster 4 tended to show the highest psychological well-being. However, it should be noted that there were no significant differences among Cluster 1, Cluster 2, Cluster 3, and Cluster 4 in these three indicators of psychological well-being. That is, Cluster 5 consistently showed the lower levels of psychological well-being than those in other clusters (especially Cluster 4), whereas there were no significant differences in psychological well-being among people in the other four clusters.

CHAPTER 6: DISCUSSION

Multidimensional Structures within Ethnic Identity & Acculturation

Ethnic Identity: Non-Unitary Construct

In the existing ethnic identity literature, there is little consistency as to what elements or dimensions within ethnic identity should be studied. Therefore, the first goal of the current study was to examine the validity of a multidimensional conceptual model of ethnic identity among Chinese Canadians. As expected, we found a two-dimensional structure (internal vs. external) of ethnic identity among people with Chinese origins in Canada. Affective and cognitive aspects of ethnic identity were embedded within the Chinese-Internal Identity, such as a sense of affirmation and belonging to the Chinese group, Chinese identity achievement, a sense of common fate as a Chinese person, and an endorsement of Chinese cultural values. Except for Chinese cultural values, these constructs are commonly assessed in the literature as part of ethnic identity (Phinney, 1990).

This two dimensional model is similar to the conceptual model proposed by Isajiw (1981; 1990). In his original studies, efforts were made to examine generational differences associated with each dimension, rather than to empirically validate the proposed two-dimensional structure of ethnic identity. Similarly, when adopting Isajiw's two-dimensional conceptual model, studies often focus on examining the demographic or psychological correlates of each dimension, without empirically validating the multi-dimensionality of ethnic identity (i.e., Kwan & Sodowsky, 1997). The current study provides such evidence and also serves as an example of studying ethnic identity with a

multidimensional approach. This bridges earlier theorizing with more empirically grounded research.

In the current study, the affective and cognitive components within Chinese-Internal Identity were strongly positively correlated. This is in line with Ullah's research (1987) in which a positive relationship was found between the affective (i.e., ethnic pride) and the cognitive (i.e., self-identification) dimensions of ethnic identity for Irish adolescents in England. Furthermore, Chinese-Internal Identity and Chinese-External Identity were positively correlated, consistent with the findings of Der-Karabetian (1980) and Kwan and Sodowsky (1997). Thus, even though the behavioural aspect of ethnic identity branches out as a unique factor, it is still strongly associated with the internal dimension of Chinese identity.

It is evident that ethnic identity is not a unitary construct, and that ethnic identity can only be fully understood by considering both the internal and the external aspects of ethnic identity separately. Our findings suggest that a uni-dimensional approach may lead to a less accurate or incomplete understanding of ethnic identity. For example, foreign-born and Canadian-born participants reported similar levels of Chinese-Internal Identity, but foreign-born participants reported significantly higher Chinese-External Identity than Canadian-born participants. Therefore, a uni-dimensional model may over-estimate or under-estimate the generational differences and similarities in ethnic identity, depending on which dimension is under review. Most studies of ethnic identity are interested in the relationship between ethnic identity and other constructs, such as mental health outcomes. Needless to say, examining only one dimension of ethnic identity in

relation to other constructs may lead to limited and possibly mistaken findings, because the construct of ethnic identity is not fully represented.

Acculturation: A Unitary Phenomenon

We found one over-arching dimension within acculturation, which included affective, cognitive, and behavioural components. Clearly, participants in the current study endorsed all aspects of acculturation (named Canadian Identity) in a similar manner. Previous acculturation research focused heavily on behavioural aspects of acculturation. More recent studies have demanded a switch of focus to include psychological aspects of acculturation (Cuéllar et al., 1995; Tropp et al., 1999). However, in the current study, the affective, cognitive, and behavioural dimensions were highly correlated with each other, which suggests that there is a lack of dimensionality within Canadian Identity. This contrasts with several multidimensional conceptual models in the literature. For example, Szapocznik and colleagues (1978) described the process of acculturation as occurring at two levels (behavioural vs. value). Marin (1992) also proposed that the acculturation should be understood at three levels (superficial, intermediate, and significant), because individuals may demonstrate different degrees of acculturation within each.

Many factors may explain the uni-dimensional phenomenon of acculturation found in the current study, which is in contrast with the multi-dimensional conceptualization of acculturation in the past research. The majority of past acculturation research has treated acculturation as unidimensional, even though it is conceptualized as multidimensional. This practice is evident in research which categorizes participants into

acculturation types based on their overall acculturation scores, and examined the correlates of these acculturation types (Berry & Kim, 1988; Mendoza, 1989; Padilla, 1980; Szapocznik et al., 1978). In these studies, although the acculturation was conceptualized or assessed with multiple components, such as language use and preference for food and friendships, an overall score was predominantly used to represent an individual's level of acculturation. In addition, although more recent studies use a multidimensional model to study acculturation, the "dimensions" they referred to are the ethnic cultural and host cultural dimensions, rather than multiple dimensions within acculturation (e.g., Ryder et al., 2000). Therefore, these studies are not really examining the multi-dimensionality *within* acculturation.

Moreover, earlier acculturation research predominantly adopted a bipolar perspective in understanding acculturation; therefore, the loss of one's ethnic culture was used as an indicator of acculturation. The current study adopts a recent orthogonal perspective in understanding and assessing acculturation which is an individual's orientation towards the host culture, independent from his/her orientation towards ethnic culture. The orthogonal conceptualization and measurement approach contrasts with the majority of past research, which may explain the difference between a multidimensional understanding of acculturation in the past research and the unidimensional finding in the current study.

When multiple dimensions of acculturation (orientation towards host culture) were assessed, they are not always systematically examined. For example, the study of Ying, Lee, and Tsai (2000) assessed multiple domains within acculturation, with an

orthogonal conceptual and measurement approach, followed by an empirical examination of the dimensional structure of acculturation. They found three dimensions within an individual's orientation toward the host culture: language, social affiliation, and cultural pride. Although language and social affiliation are often considered as behavioural aspects of acculturation, they were treated as two separate dimensions in this study. Other behavioural items were dropped in their analyses, such as food and cultural activities. The variability within the same domain (i.e., the behavioural) challenges our understanding about the core features of acculturation and our hypothesis-generating for explaining the relationships between items being retained and items being dropped.

It is possible that the factorial structure of acculturation may be sample-specific (i.e., university students) and therefore less stable. In the current study, Chinese Canadians saw themselves consistently as Canadians across many domains (affective, cognitive, or behavioural) of being a Canadian. In fact, the correlation coefficients among all variables of acculturation were higher than the correlation coefficients among variables of Chinese-Internal Identity and much higher than the correlation coefficient between Chinese-Internal Identity and Chinese-External Identity. Multiple dimensions might be more likely if people are followed longitudinally to examine changes of each dimension over time. Different dimensions may show different trajectories of changes.

In summary, a two-dimensional structure (the internal vs. the external) of ethnic identity and a uni-dimensional structure of acculturation among Chinese Canadians was found in the current study. These findings are particularly meaningful because these two cultural identification processes were conceptualized and assessed in a similar fashion,

and because these structures were empirically examined among the same group of people. Current acculturation research that struggles with the separation between ethnic identity and acculturation treats these two cultural orientations as parallel across ethnic groups, just like the conceptual model proposed in the current study. However, our findings suggest that, although these two processes may be conceptualized as parallel, they might not manifest themselves as parallel. This signals the importance of empirical validation of a conceptual model prior to further investigation of other questions of interest.

In addition, it might be informative to generate hypotheses for explaining the differences in the factorial structures of ethnic identity and acculturation. It is possible that identifications with specific cultures should be understood within a specific context. Living in a Canadian society, the extent to which a person feels Canadian may be relatively consistent across contexts. That is, being Canadian is experienced coherently, both internally and externally, as part of people's self-concept, whether they identify strongly or weakly as Canadians. On the other hand, in a Canadian context, being Chinese may not be experienced consistently and coherently across situations. Therefore, less coherence in people's self-concept as a Chinese person in a Canadian context may be evident among Chinese people. This might explain the emergence of two-dimensional structure of ethnic identity, and of one-dimensional structure of acculturation among Chinese Canadians in a Canadian context. Therefore, the identifications with both cultures (or multiple cultures) should be understood within specific contexts.

Cultural Values

Recognition of the need to study cultural values is long-standing. Empirical results have often been interpreted as due to cultural characteristics that are assumed to exist but are not assessed directly (Betancourt & Lopez, 1993). To remedy this, the current study directly assessed the level of an individual's endorsement of Chinese cultural values. Consistent with our expectations, Chinese cultural values were subsumed under the Chinese-Internal Identity factor, and were positively related to other affective and cognitive components of ethnic identity.

Previous studies suggested that ethnic-specific factors (such as cultural values) should be included as a supplement to an overall ethnic identity model when studying people with Asian origins, including Chinese (Phinney, 1990; 1992). Our findings that Chinese cultural values were an integral part of ethnic identity support the above proposal. In addition, we found that Chinese cultural values among Chinese Canadians can be reliably measured with the Chinese Value Survey (CVS; The Chinese Culture Connection, 1987). Studies of the psychology of Chinese people in Chinese countries often find that Chinese culture itself is pervaded by strong and persistent traditional values (Bond & Hwang, 1986; The CCC, 1987). The current study supports this notion of the importance of Chinese cultural values and the significance of Chinese cultural values toward the formation of Chinese ethnic identity.

On the other hand, the measure of host cultural values, individualism, was identified in initial stages of data analyses as an outlier and was dropped from further analyses. Although measured reliably, this variable was not significantly related to any of the other 13 key variables or to the four identity factors. Therefore, contrary to our

expectations, Canadian cultural values were not part of participants' Canadian Identity. Many factors may relate to the lack of significance of Canadian cultural values to acculturation among Chinese Canadians. First of all, both the fact that characteristics of mainstream culture are far more difficult to define than those of a particular subculture (Phinney, 1990; Roysircar-Sodowsky & Maestas, 2000) and the lack of homogeneity in values within the host culture (Szapocznik et al., 1978), make it difficult to assess Canadian cultural values. Although Canada encompasses all the essential qualities of being an individualistic country (Triandis & Gelfand, 1998), the results from the current study raise questions about whether individualism represents the core features of Canadian values.

Second, even if individualistic values represent Canadian cultural values, other factors may complicate attempts to measure individualistic values among Canadians. For example, major themes of individualism may be predominant in different kinds of individualistic society. For example, some studies suggest that for individualism in the U.S., the theme of subordination of in-group goals to personal goals is more important than other themes, such as self-reliance and competitions (Triandis et al., 1988). Perhaps our measure of individualism did not capture the most relevant themes for understanding this construct in a Canadian context.

In summary, although values are consistently considered an important aspect of acculturation (Szapocznik et al., 1978; Marin, 1992), and although Canadian cultural values were conceptualized as part of the acculturation, the empirical evidence has shown otherwise: they were not part of an individual's identification with the host culture. This

highlights the value of empirically validating a conceptual model prior to further investigation of the relationships among variables. Since host cultural values are rarely empirically examined in acculturation research, we are unsure if cultural values are really unimportant in the process of acculturation, if this is a sample-specific phenomenon, or if Canadian values were not measured adequately in the current study. Furthermore, existing acculturation models are usually applied uniformly to explain the process of acculturation of different ethnic groups, and ethnic-specific factors are often introduced only in the context of ethnic-specific topics (e.g., ethnic identity). Perhaps there are some ethnic-specific elements (not related to ethnic identity) that contribute uniquely to the process of acculturation. For example, it is possible that Chinese people do not need to acquire host culture's values in order to have a higher level of acculturation.

The Role of External Context

One of the purposes of the current study was to examine ethnic identity by considering ethnic identity and social identity simultaneously, which provides us an opportunity to understand the role of the external context in the formation of ethnic identity. To do this, we examined people's feelings and presumed values about their ethnic group and their group membership (collective self-esteem; Crocker & Luhtanen, 1990). The four domains of collective self-esteem (CSE) were all hypothesized to be subsumed under the internal dimension of the ethnic identity. However, only one aspect (CSE-Identity) was subsumed under the internal dimension of ethnic identity as expected. Thus, the importance of one's ethnic group membership to one's self-concept (CSE-Identity) is an integral part of one's ethnic identity. The other three aspects of collective

self-esteem (CSE-Member, CSE-Private, CSE-Public) branched out to form a third factor, Ethnic Evaluation.

This overall CSE scale has been used inconsistently in the past. Sometimes a summary score of the four subscales is used to represent a unitary construct of social evaluation about specific cultural groups (Feather, 1996). Other times selected subscales are used to represent the overall construct of collective self-esteem (Alvarez & Helms, 2001; Verkuyten, 1995). Fewer studies use all four subscales and examined their inter-relationships or their individual relationships to other constructs (i.e., Crocker et al., 1994; Verkuyten & Lay, 1998). In the current sample, the CSE-Identity subscale had the weakest correlations with the other CSE subscales. In addition, the three evaluative subscales, but not the CSE-Identity, were significantly related to measures of psychological well-being. This is consistent with past research (Crocker et al., 1994; Luhtanen & Crocker, 1992; Verkuyten & Lay, 1998), suggesting that the three scales of Ethnic Evaluation are qualitatively different from the identity domain of CSE.

Ethnic Evaluation, consisting of the three evaluative subscales, was significantly related to higher Chinese-Internal Identity. This suggests that the presumed values of and feelings about one's ethnic group and group membership are positively related to an individual's ethnic identity. Previous studies have found that the importance of social identity is stronger for people with more collectivistic values than for people with individualistic values (Luftanen & Crocker, 1992; Paez et al., 1998). In Chinese culture, the self, the importance of one's public image, and the importance of feelings and evaluations of others are often intertwined (Markus & Kitayama, 1991). How the

Chinese people in the current study see themselves as Chinese is highly related to how they perceive their group being evaluated by others. The current study demonstrates the separate but related nature of the relationship between ethnic identity and the evaluative influence of the external context in the formation of ethnic identity.

Ethnic Evaluation also relates positively to Canadian Identity. In other words, having a positive evaluation about one's ethnic group seems to be related to a stronger identification with Canadian society. Perhaps when the ethnic aspect of oneself is perceived positively, this perception may signal an acceptance of oneself by the members of the majority society, regardless of one's level of ethnic identity. This finding has important implications as to how ethnic groups should be portrayed in the public. In the province of British Columbia where there are many different ethnic groups, it is important to emphasize the positive aspects of such diversity. Promoting a positive regard for multiple ethnic groups could foster a stronger sense of belongingness and connectedness to Canada.

These results highlight the importance of incorporating the impact of external context to the formation of ethnic identity. As reviewed previously, social identity research has focused on the "minority" rather than "ethnic" aspect of identity (Verkuyten & Lay, 1998), whereas ethnic identity research tends to examine the "ethnic" aspect of identity with less attention paid to a person's social context and minority status (Phinney & Rosenthal, 1992). The current study applied concepts derived from both traditions. Our results suggest that "ethnic identity" is not only an intra-individual process related to an individual's personal identity as an ethnic being, but also an inter-personal process

which other people and the society as a whole impact. Unfortunately, the current study failed to address the "minority" aspect of ethnicity. The external context may not only influence an individual's identity as an ethnic person in Canada, but may also influence an individual's identity as a minority or as an immigrant in Canada. Studying multiple identities within an individual, without centring upon one specific aspect of identity, is a challenging task for future research.

Contact Hypothesis

Relationship between Cultural Contact and Identity

In order to empirically assess the "contact hypothesis", key demographic variables (i.e., nativity, length of residence, and age of arrival in Canada) were chosen to assess the amount of contact individuals have with Chinese and Canadian cultures. The results supported the contact hypothesis for understanding Chinese-External Identity and Canadian Identity, but not Chinese-Internal Identity. Although no specific hypotheses were proposed for Ethnic Evaluation, the contact hypothesis was not supported for this construct when participants' age was considered.

It is interesting that the contact hypothesis was useful for understanding Chinese-External Identity, but not for understanding Chinese-Internal Identity. Specifically, the foreign-born participants had a higher level of Chinese-External Identity but a similar level of Chinese-Internal Identity with the Canadian-born participants. This suggests, again, that when ethnic identity is not measured comprehensively (with separate internal and external dimensions), generational similarities and differences may be under- or over-estimated. In addition, these findings are consistent with previous research when

specific features of ethnic identity are studied. For example, Rosenthal and Feldman (1992) proposed that the importance of having an ethnic identity may be more central than practicing ethnic behaviours to the formation of ethnic identity among Chinese people. Similarly, traditional Chinese values have been found to exhibit a considerable degree of persistence (Bond & Hwang, 1986), and there are basic continuities in the cultures of Chinese people overseas (Bond, 1986). Therefore, for Chinese people, the internal aspects of ethnic identity may be more central and therefore more resistant to change than the external aspects of ethnic identity.

There are other explanations for these findings. Chinese-External Identity may show greater differences, based on contact with Canadian culture than Chinese-Internal Identity because the external context does not support the frequent and consistent practice of ethnic behaviours. In a Canadian context, Chinese people might not be expected to perform many ethnic behaviours, ethnic behaviours may be expected inconsistently across people and situations (home vs. school), or ethnic behaviours may be de-emphasized in favour of competing behaviours (e.g., Canadian behaviours and customs). The effect of inconsistent and infrequent external support for practicing ethnic behaviours might be most evident overtime. Therefore, the longer a Chinese person lives in Canada, the more likely changes in Chinese-External Identity will manifest.

Second, characteristics of the current sample may contribute to these findings. During the data-collection process, questions were raised from interested individuals about their eligibility to participate (e.g., "although I am of Chinese origin, can I participate if I think I am more of a Canadian?"). Therefore, it is possible that

participants in the current study might have a pre-existing higher ethnic identity than individuals who did not participate. This might be particularly true for Canadian-born participants and may account for the lack of generational differences in Chinese-Internal Identity. A challenge for future research is to recruit Chinese participants who might not have a strong ethnic identity in a Canadian context or who may not associate with an ethnic community.

In the existing literature, generational status and length of residence in the host country are used inconsistently to operationalize the construct of cultural contact. In the current study, three demographic variables (i.e., nativity status, length of residence, age of arrival in Canada) all demonstrated a fairly consistent pattern of relationships with the identity variables when considered individually. This suggests that any of these three variables would be a reasonable choice. On the other hand, different indicators of cultural contact emerged as "best" predictors of identity factors when three indicators were examined simultaneously. Nativity was the most significant predictor of Chinese-External Identity, and length of residence in Canada was the most significant predictor of Canadian Identity. It is possible that being born in a specific country may bring about a "given" sense of identity. Since the majority of the participants in the current study were foreign-born, their sense of being Chinese was intuitive when they were in their country of origin. Once they immigrated to a host country, different domains in their ethnic identity may have changed due to the influence of the external context. Since the external dimension of ethnic identity may be impacted more by the external context than the internal dimension, nativity status is a better predictor of Chinese-External Identity.

The cultural contact hypothesis was also related to acculturation (Canadian Identity), and the length of residence, rather than nativity status, is the best predictor of Canadian Identity. Perhaps being Canadian-born may create a natural sense of Canadian Identity, similar to the above discussion about the relationship between nativity status (being born in foreign Chinese countries) and Chinese-External Identity. Since the majority of the participants in the current study were foreign-born, their level of Canadian Identity varies depending on the extent of contact they have with the Canadian culture. Therefore, length of residence in Canada is the best predictor of Canadian Identity. Furthermore, length of residence in Canada is a good indicator of cultural contact with the Canadian culture (rather than Chinese culture), which further supports the relationship between cultural contact and acculturation.

Our findings about the contact hypothesis also call attention to look closely at what we mean by "contact." It became apparent that these three cultural contact variables are better indexes of the extent of contact with Canadian culture than the extent of contact with Chinese culture. In fact, other than an individual's nativity status, we know very little about the extent of contact people have with a Chinese culture after they come to Canada. After arriving in Canada, people's contact with Chinese culture may vary widely depending on other factors, such as the neighbourhood where they live. Some participants reported experiencing "cultural shock" after they came to study in a metropolitan city, since they grew up in a less ethnically diverse neighbourhood. Others commented on their difficulties in adjusting to a mainstream university after they attended high schools in which the majority of students were Chinese. Therefore, how

we measure "contact" with a Chinese culture for people already in Canada, other than their nativity status, is an important question.

Importance of Basic Demographic Variables: Age

Chronological age was also associated with identification processes. Specifically, older age predicted higher Chinese-Internal Identity, higher Ethnic Evaluation, and lower Canadian Identity. These findings about the importance of chronological age to identity variables are particularly meaningful since none of the cultural contact variables predicted Chinese-Internal Identity, and since age was predictive of Canadian Identity in addition to length of residence in Canada. In most ethnic minority research, cultural contact variables, such as length of residence, are studied more often than basic demographic variables, such as age. This is problematic because true relationships between cultural contact variables and outcome variables may be disguised by failing to consider basic demographic variables.

When chronological age is considered in the context of ethnic identity and acculturation, findings are inconsistent. Sometimes, no relationship is found between age and an individual's identification with the ethnic or host cultures (Phinney et al., 1997; Romero, Cuéllar, & Roberts, 2000). When a significant relationship with age is found, older ethnic minority adolescents (Grade 10) and young adults report higher levels of ethnic identity exploration than their younger counter-parts (Grade 8 and late adolescence) (Phinney, 1989; Phinney & Chavira, 1992; Phinney & Tarver, 1988). In addition, younger individuals (under the age of 30) show a higher level of immersion into Canadian society than older individuals (Kim & Berry, 1986). These findings are

consistent with ours. The mixed findings in the past research might relate to the fact that different aspects of ethnic identity and acculturation are examined in relation to age. It is possible that different dimensions of these two processes have different relationships with age (Tsai, Ying, & Lee, 2001). This is consistent with our findings that age is significantly related to Chinese-Internal Identity and Canadian Identity, but not to Chinese-External Identity. Therefore, it might be more meaningful to propose separate hypotheses regarding the relationship between age and each dimension of ethnic identity and acculturation.

Unfortunately, we are unable to propose a comprehensive model to account for the different relationships between age and each dimension of ethnic identity and acculturation. However, two specific explanations that are based on past research in second-language acquisition and in ego identity are relevant. First, the relationship between age and identity may be related to the relationship between age and language acquisition. Second-language acquisition is related to developmental age (Fledge, Yeni-Komshian, & Liu, 1999). For example, Chinese children who immigrated after age five use Chinese more frequently and fluently, and value Chinese as their native language more than Chinese children immigrating before the age of five (Luo & Wiseman, 2000). Language is also a major medium of cultural contact (Dion et al., 1990), and more cultural contact relates to a higher cultural identity with that language group (Noels & Clements, 1996). Therefore, it is possible that the relationship between age and identity is transmitted through language acquisition and proficiency. In other words, younger age might be associated with better English proficiency, which provides more opportunities

for contact with Canadian society. Consequently, younger participants in the current study had a higher level of Canadian Identity. In contrast, older participants may have been past the age to learn English as fluently as their native languages when they arrived in Canada. As a result, they may have less contact with the Canadian society, which precludes them from having a strong Canadian identity. At the same time, their ethnic language proficiency provides them with more opportunities for contact with the ethnic community in Canada, which may strengthen their sense of ethnic identity.

Taken together, these possible pathways might explain why older age was associated with higher Chinese-Internal Identity and younger age was associated with Canadian Identity. However, these explanations do not account for the lack of relationship between age and Chinese-External Identity. In addition, there is a confound between chronological age and age of arrival in the host country in terms of second-language acquisition. In the current study, the age of arrival was not significantly related to any cultural identity when age was considered. Furthermore, chronological age and length of residence in Canada were not significantly related, meaning that not all older participants arrived in Canada at later age and not all younger participants arrived early in Canada. Therefore, although the hypothesis based on second-language acquisition sounds plausible, it does not fully account for the relationship between age and identity.

Another possible explanation for the relationship between age and ethnic identity may be found in the relationship between age and ego identity. That is, older age may be associated with higher Chinese-Internal Identity because older age is more generally associated with a more achieved ego identity. Age is discussed more often within the

context of ego identity formation than in the context of ethnic identity or host cultural identity. In general, past studies have found that older people are more likely to have an achieved identity, while younger people exhibit less mature identity (Adam, Bennion, & Huh, 1989). Therefore, older people may have both an achieved ego identity and a higher Chinese-Internal Identity. In the current study, we found that an achieved identity status was significantly related to a higher Chinese-Internal Identity, but not related to the other identity variables. Furthermore, age was still significantly related to Chinese-Internal Identity, after controlling for achieved identity status. Apparently, there is a unique contribution of age to a higher Chinese-Internal Identity, which cannot be accounted for by an achieved identity status. Furthermore, Canadian Identity can also be considered as part of an overall identity, but it showed the opposite relationship with age. Therefore, it is not simply the case where older age is associated with higher level of identity across the board.

Overall, applying the concepts derived from both second-language acquisition and ego identity theories illuminates the relationship between chronological age and identity. The specific developmental stage of the current sample (i.e., young adulthood), the restricted range of participants' chronological age (i.e., mean age of 22), and the procedure used to recruit participants (i.e., through ethnic organization, language classes, etc.) all contribute to the fact that the relationship between chronological age and identity cannot be fully accounted for by these two research traditions. Future longitudinal studies in which participants represent having a wider range of ages, and include earlier developmental stages, are necessary in order to construct a comprehensive model of the

relations among multiple identities, chronological age, and cultural contact.

A Pattern-Centred Approach

Another purpose of the current study was to use cluster analyses to sort participants into groups that are as homogeneous as possible based on the four identity variables identified in the factor analyses. Participants could have different degrees of immersion into ethnic and host cultures since the continuous measures of four identity scores were used to categorize participants. This is an improvement over previous studies in which cut-off scores were used in an all-or-nothing fashion to categorize people into sub-groups (Sanchez & Fernandez, 1993).

Five Cluster Groups

The results of the cluster analyses revealed five distinct cultural groups, rather than the four clusters that were hypothesized based on Berry's model (dual cultural identity group, host cultural identity group, ethnic cultural identity group, and culturally unidentified group) (Berry, 1980; 1993). In the current study, three of the groups (i.e., Dual Cultural Identity Group, Chinese Identity Group, Canadian Identity Group) were consistent with groups expected based on Berry's model. People in Cluster 1 (Dual Cultural Identity Group) were characterized by strong identifications across all four identity factors. They viewed themselves strongly both as a Canadian and also as a Chinese (both internally and externally). They positively regarded the Chinese as a group and believed that the Chinese are viewed positively by other people. This cluster is similar to Berry's category of "integration" that is characterized by high levels of both ethnic identity and acculturation. People in Cluster 2 (Chinese Identity Group) were

characterized by a strong identification with the ethnic culture (both internally and externally), a weak identification with the host culture, and a very positive regard for their ethnic group. This cluster is similar to the "separated" category in Berry's model. People in Cluster 3 (Canadian Identity Group) were characterized predominantly by a strong host cultural identity, with weak identifications with all ethnic aspects of ethnic identity. That is, people in this cluster strongly identified themselves with the Canadian culture, and did not see themselves as particularly as Chinese. This cluster is similar to the "assimilated" category in Berry's model.

The other two clusters presented features that only partially conformed to the typology in Berry's model (i.e., Unidentified- High Chinese Behaviour Group, Dual Cultural Identity- Low Chinese Behaviour Group). People in Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group) were characterized by a strong Canadian Identity and high Ethnic Evaluation, a relatively neutral Chinese-Internal Identity, and a weak Chinese-External Identity. They possessed features similar to Berry's host cultural identity group (characterized by strong host identity), ethnic cultural identity group (characterized by strong ethnic identity), and host cultural identity group (characterized by strong identifications with both ethnic and host cultures). However, no single Berry's mode fully describes people in this cluster.

People in Cluster 5 (the Unidentified-High Chinese Behaviour) were characterized by a low Chinese-Internal Identity, a low Canadian Identity, a low Ethnic Evaluation, but a high Chinese-External Identity. This cluster is similar to Berry's "marginalized" category, with the major exception of a high Chinese-External Identity.

The nature of marginalization in general is a lack of belongingness and relatedness to any culture. However, people in this cluster, although not strongly identifying with either culture, practiced many Chinese customs and behaviours. Therefore, they still maintained an essential element of being Chinese.

Several potential reasons may account for the differences between our cluster groups and Berry's four acculturation categories. First, the additional factor of Ethnic Evaluation and its positive relationships with the other identity factors gives us a richer understanding of ethnic identity and acculturation. For example, people in Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group) have high positive regard towards the Chinese group, even though they do not see themselves strongly as Chinese. On the other hand, people in Cluster 1 (Dual Cultural Identity Group) not only have high positive regard for the Chinese, but also see themselves strongly as Chinese.

Second, the division of ethnic identity into Chinese-Internal and Chinese-External Identity also enriched the results of the clustering. For example, again, people in Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group) differ from people in Cluster 1 (Dual Cultural Identity Group) the most in terms of their lack of practicing Chinese behaviours and their neutral sense of being Chinese. In addition, people in Cluster 5 (Unidentified-High Chinese Behaviour Group) are most characterized by practicing many Chinese behaviours, in addition to weak identifications with Chinese and Canadian cultures.

Third, past studies that have adopted Berry's model usually use a cut-off score approach to assign each participant to a category. This cut-off approach can produce

relatively equal numbers of people in each category, which facilitates further statistical analyses. However, inconsistent cut-off scores are chosen across studies and this practice is a major methodological limitation (Liem et al., 2000). The use of cluster analyses in the current study allowed people to have different degrees of identification with Chinese and Canadian cultures, rather than forcing them into an all-or-nothing categorization. The emergence of Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group), distinctive from Cluster 1, is one of the best examples of the advantages of using cluster analyses. People in Cluster 1 (Dual Cultural Identity Group) are characterized by strong identifications with the Chinese culture (internally and externally) and the Canadian culture. In contrast, the ethnic identifications of people in Cluster 4 were at different levels: high Ethnic Evaluation, neutral Chinese-Internal Identity, and low Chinese-External Identity. These nuances would not be possible with an all-or-nothing categorization system.

Another example supporting the use of cluster analysis instead of cut-off scores concerns Cluster 3 (Canadian Identity Group). The Chinese-External Identity score in this cluster was the lowest across the five clusters, and also the lowest among the three ethnic aspects of identity within Cluster 3. In other words, people in this cluster are not only primarily characterized by a strong host cultural identity and weak identifications with all ethnic aspects of identity, but also particularly distinguished themselves by not practicing many Chinese behaviours and customs. This variation among the ethnic aspects of identity within one cluster would not be as visible if cut-off scores had been used. Exploring naturally forming subgroups within an overall sample to emerge allowed

us to identify some distinctive features of specific clusters that otherwise would have been ignored or obscured.

The last difference between Berry's typologies and our clusters concerns the conceptual difference between the Berry's "integration" category and the clusters formed in the current study. In Berry's model, an "integrated" cultural identity emphasizes the unitary cultural identity that is formed by integrating the ethnic culture and the host culture. In contrast, the orthogonal perspective adopted in the current study emphasizes co-existing multiple cultural identities. That is, people in clusters characterized by strong multiple identities (e.g., Cluster 1, Cluster 4) are not assumed to have one unitary cultural identity. They may, instead, alternate between multiple cultural worlds. The lack of integration and the presence of alternation among cultural worlds do not necessary mean poorer psychological well-being due to the conflicting demands from different worlds, as proposed by previous acculturation research.

Demographic and Language Profiles of Five Clusters

Nativity Status. In the current study, the majority of Canadian-born participants were in Cluster 3 (Canadian Identity Group) and Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group). Few were in Cluster 1 (Dual Cultural Identity Group), and none were in Cluster 2 (Chinese Identity Group) or Cluster 5 (Unidentified-High Chinese Behaviour Group). The composition of people in these two clusters (Cluster 3 and 4) is consistent with earlier results in which Canadian-born participants reported lower Chinese-External Identity and higher Canadian Identity than foreign-born participants. Recall another earlier result that Canadian-born and foreign-born participants were

similar in their Chinese-Internal Identity. This is consistent with the finding that some Canadian-born participants were in Cluster 1 and Cluster 4, in addition to Cluster 3. Apparently, when considering Chinese-Internal Identity, Chinese-External Identity, and Canadian Identity simultaneously, Canadian-born Chinese primarily divide into two groups: those identifying with Canadian culture only, and those who identify internally with both cultures. Being born in Canada seems to cultivate an inherent sense of belongingness and identity as Canadians.

Interestingly, being born in foreign Chinese countries did not have the same effect on Chinese identity, since such individuals from foreign Chinese countries are present in all five clusters. In particular, foreign-born participants were more likely to be classified in Cluster 1 (Dual Cultural Identity Group), Cluster 2 (Chinese Identity Group), and, in particular, Cluster 5 (Unidentified-High Chinese Behaviour Group). Cluster 5, the largest cluster found, was comprised exclusively of foreign-born participants. Foreign-born participants might have an inherent sense of being Chinese in their country of origins. However, after immigrating and living in a Canadian society, other factors may be significant in facilitating the loss or retention of different aspects of Chinese identity. As a result, the foreign-born participants were represented in all five clusters.

Length of Residence. The length of time participants resided in Canada also brought complexity to the clustering. People in Cluster 3 (Canadian Identity Group) and Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group) had resided in Canada for a longer period of time than participants in the other three clusters. When examining cluster differences in the length of residence among foreign-born participants only, it was

found that the foreign-born participants in Cluster 4 had the longest length of residence. In other words, Canadian-born participants were most likely to be in Cluster 3 and Cluster 4, and the portion of foreign-born participants who resided in Canada for a longer period of time showed cultural identification profiles similar to those Canadian-born participants.

These results suggest a potential developmental progression in the formation of ethnic identity and Canadian Identity for foreign-born Chinese. Being born in foreign Chinese countries might be related to a stronger ethnic identity. Therefore, very new immigrants might fall into Cluster 2 or Cluster 5. With a longer exposure to the Canadian context, a sense of belonging to Canada develops. This growing sense of Canadian Identity either competes with ethnic identity, as in Cluster 3 (Canadian Identity Group), or merges with ethnic identity, as in Cluster 1 (Dual Cultural Identity Group). Therefore, there may be a diverging point when people move from Cluster 2 and Cluster 5 to either Cluster 3 or Cluster 1. These two pathways may re-merge when participants reside in Canada even longer. That is, participants in Cluster 3 may re-claim their ethnic identity overtime, leading to their eventual grouping in Cluster 4. Participants in Cluster 1 may have less external support for practicing their ethnic behaviours, and eventually show identity profiles similar to Cluster 4.

The variable "length of residence in Canada" serves as a reference point for us to propose these potential developmental pathways, and this proposed developmental progression is consistent with ethnic identity stage theory (e.g., Sue & Sue, 1990). However, it is based on cross-sectional data. Future longitudinal research is needed in

order to empirically explore the developmental trajectories of ethnic identity and acculturation.

Language. One last particularly interesting phenomenon across the five clusters concerned language proficiency and use. In terms of language proficiency, people in clusters characterized with high Canadian Identity (i.e., Cluster 1, Cluster 3, Cluster 4) reported higher English proficiency and lower ethnic language proficiency than people in clusters characterized with exclusively strong Chinese identity (i.e., Cluster 2, Cluster 5). People in Cluster 1 were the only group of people reporting high proficiency in both English and their ethnic language. In terms of language use, participants in clusters characterized with strong Canadian identity predominately used English outside the home, especially those in Cluster 3 and Cluster 4. However, about half of the participants across clusters and about half of members in Cluster 1 (Dual Cultural Identity Group) reported using an ethnic language predominantly outside the home. Fewer people characterized with a strong Canadian Identity (e.g., Cluster 3, Cluster 4) reported using an ethnic language outside the home.

This pervasive use of an ethnic language outside the home, particularly in Cluster 1, Cluster 2, and Cluster 5, is meaningful given that the current sample is comprised of university students, not community members. As earlier reviewed, previous studies have focused on the behavioural aspects of acculturation, in particular language use, and have ignored the psychological aspects of acculturation (Tropp et al., 1999). In fact, language itself has a very strong presence in acculturation research to the extent that some acculturation measures are solely based on participants' self-reported language use and

proficiency (e.g., Deyo, Diehl, Hazada, & Stern, 1985). The above findings challenge the emphasis on language in previous acculturation research, and question the validity of using language as an index of acculturation.

These findings also dispute a commonly held belief that immigrants "have to" learn English to function effectively in a host country. Using a second language and proficiency in the host country's language have been examined in relation to levels of stress experienced by immigrants (Dorrie, 1986; Fuertes & Westbrook, 1996). In the current study, people in clusters characterized by strong ethnic identity, frequent use of ethnic language, and higher ethnic language proficiency (i.e., Cluster 2) reported similar levels of psychological well-being as people in cluster characterized with strong Canadian Identity, frequent use of English, and higher English proficiency (i.e., Cluster 3). The high rate of ethnic language use outside the home may be specific to our sample, in that our participants attend multi-ethnic universities in western Canada. As Canada becomes more multi-ethnic and multi-linguistic, we might begin contemplating the absolute primacy given to official languages, the implications of co-existing linguistic sub-cultures, and the linguistic qualities we would like to cultivate among contemporary Canadians.

Demographic information may be helpful in providing a general understanding of the population being studied; however, it is apparent that using demographic information alone would not be able to fully describe those people under review. Recent studies have attempted to examine relationships among variables within subgroups in order to capture the uniqueness of different subgroups in an overall sample. However, these subgroups

are usually based on participants' demographic background, especially their nativity status (foreign-born vs. native-born). For example, Lay and Verkuyten (1999) and Tsai and colleagues (2000) found that the profiles of ethnic identity and acculturation were different among the foreign-born and the native-born Chinese in Canada and the U.S. The current study found more heterogeneity than can be captured by one aspect of participants' demographic background. In fact, some of the clusters can only be distinguished by the four identity factors. For example, Cluster 3 (Canadian Identity Group) and Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group) were distinguished primarily based on ethnic identity and, especially, Ethnic Evaluation, whereas the demographic and language profiles in these two clusters were very similar.

An advantage of using a method, such as cluster analysis, in a heterogeneous sample is that it allows people with different demographic backgrounds to be similar to one another in their profiles of cultural identifications, rather than assuming people with different demographic background will be different. For example, we found that a portion of foreign-born participants showed similar cultural identity profiles as the Canadian-born participants in Cluster 3 and Cluster 4. This type of finding can only be obtained when people are allowed to cross over limits set by their demographic backgrounds and to share commonalities with other people.

Relationship between Ethnic Identity and Acculturation

Another objective in the current study was to examine the relationship between ethnic identity and acculturation. In the current study, ethnic identity and acculturation were assessed independently and were expected to be orthogonal.

Across the Whole Sample

Across the whole sample, the relationship between Chinese-Internal Identity and Canadian Identity was clearly not bipolar. They were moderately positively correlated, and they demonstrated unique relationships with third variables. Therefore, their relationship can be described as orthogonal. On the other hand, the relationship between Chinese-External Identity and Canadian Identity was bipolar and clearly not orthogonal. These factors were not only significantly negatively correlated, but also revealed an almost inverse relationship with many other third variables. Therefore, both orthogonal and bipolar relationships between ethnic identity and acculturation were found, depending on which dimension of ethnic identity was under review.

Within Each Cluster

In addition to looking at the relationship between ethnic identity and acculturation across the whole sample, this relationship was also examined within each of the five clusters. The results suggested a clear orthogonal relationship between Chinese-Internal Identity and Canadian Identity in Cluster 1, and a non-bipolar relationship in Cluster 3, Cluster 4, and Cluster 5. This pattern of relationship was similar to their relationship when the whole sample was examined. However, they were clearly bipolar in the Chinese Identity Group (Cluster 2). On the other hand, Chinese-External Identity and Canadian Identity were clearly orthogonal in Cluster 2 and Cluster 5, and non-bipolar in Cluster 1, Cluster 3, and Cluster 4. These relationships were the opposite of the bipolar relationship found when the whole sample was examined. In fact, except for the clearly bipolar relationship between Canadian Identity and Chinese-Internal Identity in Cluster 2,

all other relationships were either not related (orthogonal) or were not significantly inversely related (non-bipolar).

It is possible that, when people choose a single identity as a representation for their overall identity, one is more likely to find a bipolar relationship among identities. For people choosing multiple identities (Cluster 1 and 4), several relationships among those identities are possible. These hypotheses can best describe the non-bipolar or orthogonal relationships between identity variables in the Dual Cultural Identity (Cluster 1) and the Dual Cultural Identity- Low Chinese Behaviour Group (Cluster 4). This pattern can also describe the bipolar relationship between identity variables in the Chinese Identity Group (Cluster 2). That is, people in Chinese Identity Group seem to have chosen to be Chinese to the exclusion of being Canadian. This seeming "choice" is only made in the internal aspects but not in the external aspects of ethnic identity.

However, this hypothesis is unable to explain the non-bipolar and orthogonal relationships among identity variables found in the Unidentified-High Chinese Behavioural Group (Cluster 5). Because Cluster 5 was primarily characterized with an elevation of single identity factor (Chinese-External Identity), we should have found a non-orthogonal relationship among identity variables. Furthermore, although this hypothesis cannot account for the non-bipolar relationships among identity variables found in the Canadian Identity Group (Cluster 3), the negative correlations among identity variables, although not statistical significant, implied a trend of bipolar relationship.

The above findings have important practical implications as well as research

implications. First, they again signal the importance of adopting a multidimensional conceptual and measurement approach to ethnic identity and acculturation in future studies. By doing so, a more complete understanding of their relationships can be obtained. This has become one of the most salient themes throughout the current study.

Second, it is evident that we have limited understanding of the processes underlying the formation of identity, especially when multiple identities are considered together. However, multiple ways of understanding the relationship between ethnic identity and acculturation should be the norm, rather than the exception. Neither an orthogonal nor bipolar perspective can be applied indiscriminately to everyone within a heterogeneous sample.

Third, since Chinese-Internal Identity and Canadian Identity were non-bipolar across the whole sample, and since Chinese-Internal Identity, Chinese-External Identity, and Canadian Identity were either non-bipolar or orthogonal in most clusters, it is fair to say that a person can be both Chinese and Canadian at the same time. This challenges our belief about whether immigrants need to choose one identity over another. This finding is particularly meaningful since participants in the Chinese Identity Group (Cluster 2) and the Canadian Identity Group (Cluster 3) did not differ in their psychological well-being. This is an important message to researchers and to anyone living in a multicultural society. These results do not minimize the fact that immigrants can feel caught in between two worlds. However, the key point is that they do not have to choose, since there are successful examples of living in two worlds at the same time.

Fourth, across the whole sample, Chinese-External Identity is seemingly at the

opposite end of a continuum with Canadian Identity. Because there are multiple features within Canadian Identity (e.g., affective, cognitive, behavioural), we are not sure if one component is especially competing with Chinese-External Identity. It may not matter since Canadian Identity is unidimensional. It would be interesting to see if this finding can be replicated in future studies among Chinese Canadians or in other ethnic groups.

Fifth, finding bipolar, non-bipolar, and orthogonal relationships between ethnic identity and acculturation across the whole sample and within the five clusters has practical implications as to how we can promote multiculturalism among ethnic minority individuals in Canada. Promoting multiculturalism and cultural diversity in Canada has been one of the most articulated policies and/or regulations at a federal level (i.e., Canadian Multiculturalism Act, 1971), a provincial level (i.e., Multiculturalism Act in B. C., 1993), and at a local level (i.e., policy on multiculturalism at various school districts). However, operations involved in achieving such a mandate are not specified, and a quick review of the existing programs for promoting multiculturalism in British Columbia revealed that these efforts have been mostly behaviour-based. If we looked across all Chinese Canadians and understand the relationship between Chinese-External Identity and Canadian Identity as bipolar, promoting multiculturalism by emphasizing ethnic behavioural practices may indirectly negatively impact an individual's identification with Canadian culture. The orthogonal relationship between Chinese-Internal Identity and Canadian Identity suggests that we should switch our focus to promote a psychological identification with both the Chinese culture and the Canadian culture.

If we looked within each cluster, the fact that Chinese-Internal Identity, Chinese-

External Identity, and Canadian Identity were either non-bipolar or orthogonal in most clusters (except for Cluster 2) suggests we can promote multiculturalism by focusing on fostering a strong sense of psychological Chinese identity in addition to practicing ethnic customs and behaviours. We need not worry about the competing relations among identities. For Chinese individuals who have features similar to those in Cluster 2, we might want to do something differently. Since Chinese-Internal Identity and Canadian Identity were competing with each other, we might instead adopt a dual focus on promoting Canadian identity on the basis of acknowledging the importance of practicing ethnic behaviours. A sole focus on promoting Canadian Identity may be in competition with their strong sense of being Chinese, since Canadian Identity and Chinese-Internal Identity were bipolar. Since these people might strongly identify themselves as Chinese and practice many Chinese behaviours, a multiculturalism program that has a component of encouraging Chinese behaviours may be easily accepted. As a result, a stronger sense of Canadian Identity can be more likely fostered.

Overall, examining the relationships between multiple dimensions of ethnic identity and acculturation across the sample as well as within each cluster has important practical implications as illustrated above. Utilizing the uniqueness of each cluster might optimize the effects of either prevention or intervention programs. There was a clear difference between the patterns of relationship among identity variables when the whole sample was studied and when the relationships were examined within each cluster. Although we are unable to reconcile all of these differences, these results do highlight the uniqueness of each subgroup within a heterogeneous sample.

Relationships with Psychological Well-Being

Using a variable-centred approach, we found significant relationships among individuals' identities, their demographic backgrounds, and their psychological well-being. Overall, older age, being Canadian-born, and positively evaluating one's ethnic group were significantly associated with better psychological well-being. Chinese-Internal Identity, when considered by itself, was not related to psychological well-being. However, it became significantly associated with poorer psychological well-being when considered in the context of Ethnic Evaluation. Higher Chinese-External Identity was associated fewer depressive symptoms, whereas higher Canadian Identity was associated with higher self-esteem.

In past research on the relationship between ethnic identity and well-being, the findings were mixed. Some studies supported a positive relationship (e.g., Phinney & Chariva, 1992), some studies found a negative relationship (e.g., Noels & Clements, 1996), and some studies found no relationship between ethnic identity and well-being (e.g., Rosenthal & Cichello, 1986). The multidimensional features of ethnic identity and acculturation may have contributed to such mixed findings. Indeed, the current study found that two identity factors (Chinese-Internal Identity, Ethnic Evaluation) consistently showed relationships with three indicators of psychological well-being, whereas the other two identity variables only showed relationships with one specific indicator of psychological well-being.

Ethnic Evaluation

Ethnic Evaluation was the most consistent predictor of psychological well-being.

This finding again highlights the significance of validating a conceptual model prior to further investigation. In addition, the significance of this factor demonstrates the important influence of the external context for individuals' well-being. This is consistent with findings that negative evaluations about one's own ethnic group are related to poorer well-being (Parham & Helms, 1985), and that higher collective self-esteem is associated with enhanced well-being (Lay & Verkuyten, 1999; Zea, Reisen, & Poppen, 1999). The positive relationship between Ethnic Evaluation and psychological well-being is particularly meaningful because we controlled for the other three identity factors. In other words, regardless of one's level of acculturation and other aspects of ethnic identity, having a positive regard for one's ethnic group and group membership is associated with better well-being. Efforts to promote higher Ethnic Evaluation may not only facilitate higher levels of Canadian Identity and Chinese-Internal Identity, but may also promote positive psychological well-being. This focus may benefit individuals who are highly Chinese-identified, as well as individuals who are less Chinese-identified but have Chinese origins.

Ethnic Evaluation & Chinese-Internal Identity

Another significant finding about Ethnic Evaluation was its function as a suppressor variable for Chinese-Internal Identity in the relationship between Chinese-Internal Identity and psychological well-being. Although suppressor variables have been suggested to be sample-specific and rare, other studies have found the same suppressor effect across studies (Brush et al., 1992; Brush, Rivet, Heimberg, & Levin, 1997). The factor of Ethnic Evaluation does not fall under the traditional categories of a suppressor

variable due to its own significant relationship with psychological well-being. On the other hand, extended types or manifestations of suppressor variables have been recently proposed (Krus & Wilkinson, 1986). Most importantly, the Ethnic Evaluation factor is consistent with the revised definition of a suppressor variable proposed by Conger (1974):

> A suppressor variable is defined to be a variable which increases the predictive validity of another variable (or set of variables) by its inclusion in a regression equation. This variable is a suppressor only for those variables whose regression weights are increased (p. 36-37).

Thus, a suppressor is not defined by its own regression weight, but rather by its effects on other variables in a regression equation. As a result, Ethnic Evaluation indeed serves as a suppressor variable for Chinese-Internal Identity in the relationship between Chinese-Internal Identity and psychological well-being.

Ethnic Evaluation suppressed irrelevant variance in Chinese-Internal Identity, revealing a significant negative relationship between Chinese-Internal Identity and psychological well-being. Moreover, the suppressor effects were consistently found across all three indicators of psychological well-being. Because Chinese-Internal Identity and Ethnic Evaluation were positively correlated, the more participants identified with Chinese culture internally, the more positively they evaluated their ethnic group. Ethnic Evaluation was also positively related to psychological well-being. Therefore, one part of Chinese-Internal Identity is associated highly with Ethnic Evaluation, which strongly relates to better well-being. The remaining aspects of Chinese-Internal Identity (the part

not related to evaluative component of ethnic identity) are associated with poorer well-being. Therefore, the presence of high Ethnic Evaluation may "buffer" the negative effect of Chinese-Internal Identity to well-being. Without being buffered by high Ethnic Evaluation, participants with high Chinese-Internal Identity may experience poorer psychological adjustment. Overall, participants who evaluate their ethnic group negatively may suffer from poorer psychological well-being, regardless how they see themselves as Chinese. In addition, participants who identify themselves strongly as Chinese might be particularly vulnerable to poorer psychological well-being when they evaluate their ethnic group negatively.

Some previous research on the relationship between ethnic identity and psychological well-being could shed light upon this very interesting suppressor effect. Since the "value status" of most ethnic groups in a host country is largely externally imposed, some individuals may find themselves identifying with groups that are negatively valued relative to other groups by the society (Gonzales & Cauce, 1995). Therefore, individuals who identify strongly with their ethnic group may suffer poorer psychological well-being when their group is perceived to be evaluated negatively by others (Verkuyten, 1995). In this way, it is not the ethnic identity per se, but a combination of high ethnic identity and low ethnic evaluation, that is significantly related to poorer well-being. Therefore, to understand the psychological well-being of an ethnic individual, one cannot simply look at how strongly an individual identifies with his/her ethnic group intra-individually. Previously mixed findings about the relationship between ethnic identity and psychological well-being might be clarified by further exploring the

relationship between the external context and the general ethnic identity. In the current study, the external context was influential to an ethnic individual's psychological well-being, regardless how they identify themselves internally or externally.

Chinese-External Identity

Chinese-External Identity was negatively associated with depressive symptoms. In other words, the more individuals practice ethnic behaviours and customs, the fewer depressive symptoms they reported. This contradicts some earlier findings in which external ethnic identity and a traditional ethnic lifestyle were significantly associated with poorer mental health outcomes (Kwan & Sodowsky, 1997; Naidoo, 1985). These studies proposed that expressing one's ethnic identity externally makes one more salient ethnically within one's context, and making oneself salient is associated with a higher level of stress (Kwan & Sodowsky, 1997). However, our findings suggest that whether ethnic salience is positively or negatively related to well-being might depend on whether being ethnically salient in one's context is desirable or beneficial.

In the current study, making oneself ethnically-salient by practicing many Chinese ethnic behaviours is related to positive well-being, further supporting the impact of social context to one's ethnic identity. The relationships among social status, the salience of the categorization, and social behaviours have been researched extensively in social identity theory and self-categorization theory (Páez et al., 1998). Belonging to a disadvantaged minority group with a relatively low status constitutes a negative social identity that has been found to affect psychological well-being (see Vega & Rumbaut, 1991, for a review). If one's ethnic group is perceived negatively or an ethnic individual

experiences prejudice, making oneself ethnically salient in one's context might not be desirable. On the other hand, if one's ethnic group is perceived positively and is accepted by the host country, ethnic individuals would categorize or express themselves in a way that enhances their ethnic distinctiveness and salience. Therefore, people with a higher Chinese-External Identity may make themselves ethnically salient by practicing many Chinese behaviours, benefiting from being a member of a socially favoured group. This may explain a positive relationship between Chinese-External Identity and psychological well-being.

It is not clear why a significant relationship was only found between practicing ethnic behaviours and depressive symptoms, but not with self-esteem or acculturative stress. Depression may be a particularly relevant indicator of well-being in ethnic minority psychology. It has been argued that depression is a direct consequence of experiences of racism (Fernando, 1984). However, we were limited in providing other explanations for this unique relationship. Acculturative stress, self-esteem, and depressive symptoms may play unique roles in the adaptation process of immigrants. For example, a conceptual paradigm proposed by Pearlin and his associates (1981) has been applied to understand the relationship between mental health outcomes and acculturative stress among Korean immigrants in Canada (Noh & Avison, 1996). Within this paradigm, there is a differentiation between the source of stress and the manifestation of stress. The construct of acculturative stress in the current study would be better categorized as a "source" of stress, whereas "depressive symptoms" are often treated as a manifestation of stress. Apparently, we need a more comprehensive understanding of

mental health outcomes among Chinese Canadians.

Canadian Identity

Canadian Identity was significantly related to higher self-esteem, but was not related to the other two indicators of psychological well-being. This is consistent with Ryder et al. (2000) and with Oetting and Beauvais (1991) in which identification with the host culture was significantly related to better adjustment. This finding also echoes many previous studies about the positive effects of having a high level of acculturation for mental health. What is intriguing, however, is the lack of relationship between Canadian Identity and the other two indicators of psychological well-being. In other words, acculturation (measured as Canadian Identity) was not consistently related to well-being. This finding challenges a commonly held belief that more acculturated individuals are better-adjusted, and the implication that it is important for all immigrants to acculturate quickly into the host country.

It is possible that other factors, other than acculturating psychologically or behaviourally into the host country, relate to better adjustment. This does not mean that acculturation does not bring about positive effects in the lives of immigrants. However, our findings do not clearly reveal those positive effects. This finding may also be related to the fact that in the current study acculturation was conceptualized and measured as an individual's orientation toward the host culture, independent of one's orientation toward ethnic culture. This is also in contrast to many past studies, in which acculturation was assessed in terms of low ethnic identification in addition to high host cultural identification. This difference may explain why our findings did not show greater

acculturation to be uniformly associated with better adjustment. If future studies of acculturation adopt the orthogonal approach, we may gain a better understanding of the relationship between psychological well-being and acculturation.

Significance of Demographic Variables to Psychological Well-being

Demographic variables, such as age and nativity status, also played significant roles in the well-being of the Chinese Canadians in the current study. As discussed earlier, age is not always examined in studies of ethnic identity and acculturation. When age is examined in relation to well-being, the findings are sometimes mixed, especially when age is examined along with length of residence in a host country. One study about two ethnic immigrant communities in Australia (mean ages of 35 and 39) found that age was not a significant predictor of well-being when length of residence was introduced (Niles, 1999). Other studies find that both age and length of residence in the host country are not significantly related to psychological well-being among Chinese American university students (Ying et al., 2000). Still, other studies have found that older age is associated with better psychological well-being among ethnic minority late adolescents attending high school (Phinney, DuPont, Espinosa, Revill, & Sanders, 1994), among Asian university students and faculty members with the median age of 27 (Sodowsky & Lai, 1997), and among ethnic minority adults (age ranges from 24 to 66) in community samples (Mehta, 1998; Noh & Avison, 1996). The findings of these studies are consistent with the findings of the current study, in which older age was consistently associated with better psychological well-being. This finding is particularly meaningful since the relationship between age and well-being was not a product of a higher achieved

ego identity. In fact, ego identity status was not related to any of the three indicators of psychological well-being.

The relationship between older age and positive well-being may be due to the fact that younger participants in our sample may have multiple challenges to cope with, such as launching into an independent adult life, resolving the issues of multiple identities, and relating to peers or establishing intimate relationships with people from multi-ethnic groups. This echoes the "focal model" of adolescence, proposed by Coleman (1978). According to Coleman, those who have more than one issue to cope with at a time are more likely to have problems. Some of these challenges might be particularly salient at the current developmental stage of young adulthood in the current sample.

Another significant demographic predictor for psychological well-being was nativity status: being foreign-born was consistently related to poorer psychological well-being. Being foreign-born means experiencing the process of immigration and adaptation to the host country. Without a doubt, the process of immigration is not easy and has a huge impact on immigrants. Although there exists heterogeneity among foreign-born immigrants in the current sample (e.g., in their length of residence in Canada), being an immigrant is very different from being a Canadian-born Chinese individual. However, we do not know what exactly makes a foreign-born Chinese more susceptible to poorer psychological well-being. Perhaps a foreign-born Chinese possesses other features, like having particular pre-immigration experiences (e.g., due to war at home country), that leave them more vulnerable to poorer adjustment. It is imperative to have a thorough model to study the mental health of ethnic minority individuals. This model will need to

go beyond simple hypotheses about the impact of different levels of acculturation and ethnic identity on well-being.

Clusters and Psychological Well-being

In addition to the above variable-centred approach, another purpose of the current study was to examine how cluster membership relates to psychological well-being. In fact, due to the orthogonal and multidimensional perspective on the structures of ethnic identity and acculturation, hypotheses related to psychological well-being were only proposed for cluster membership. Specifically, it was hypothesized that participants with strong identifications with both Chinese and Canadian cultures (i.e., Cluster 1, Cluster 4) would report the highest psychological well-being. Participants with weak identifications with both cultures (i.e., Cluster 5) were expected to report the lowest level of psychological well-being. As expected, participants in Cluster 5 (Unidentified-High Chinese Behaviour Group) reported the lowest levels of psychological well-being. However, unexpectedly, only participants in Cluster 4 (Dual Cultural Identity-Low Chinese Behaviour Group), but not Cluster 1 (Dual Cultural Identity), reported relatively higher levels of psychological well-being. In fact, participants in Cluster 1, Cluster 2, Cluster 3, and Cluster 4 were quite similar in reporting better well-being, whereas participants in Cluster 5 consistently reported the lowest well-being.

The above findings partially support the stated hypotheses, but they were quite discrepant from the findings derived with a variable-centred approach. For example, in the variable-centred approach, Ethnic Evaluation emerged as a protective factor. From this standpoint, participants in Cluster 1, Cluster 2, and Cluster 4 should report better

well-being than those in Cluster 3 and Cluster 5. Instead, participants in Cluster 1, Cluster 2, and Cluster 4 reported similar levels of well-being as those in Cluster 3. In addition, nativity status was also significantly related to well-being and should produce a major contrast between Cluster 3 and Cluster 4 with Cluster 5, which indeed it did. Participants in Cluster 5 consistently reported lower level of well-being than those in Cluster 3 and Cluster 4. Furthermore, the protective role of Chinese-External Identity on depressive symptoms should promote the well-being of the participants in Cluster 1, Cluster 2, and Cluster 5, and the protective role of Canadian Identity on self-esteem should promote the well-being of the participants in Cluster 1, Cluster 3, and Cluster 4. The cluster analysis finding only partially supported these expectations since Cluster 1, Cluster 2, Cluster 3, and Cluster 4 showed similarly high level of psychological well-being, but participants in Cluster 5 consistently reported the lowest level of psychological well-being.

Based on the previous variable-centred results, the greatest combination of risk factors should be being foreign-born and younger, reporting high Chinese-Internal Identity in the context of low Ethnic Evaluation, low Chinese-External Identity and low Canadian Identity. However, in the pattern-centred analysis, we did not find such a subgroup. The greatest combination of protective factors would be being older and Canadian-born, reporting high Chinese-External Identity, high Canadian Identity, and high Ethnic Evaluation. Again, we did not find such a group in our sample. Similarly, we did not find any group defined by high Chinese-Internal Identity and low Ethnic Evaluation, a combination that should be associated with poorer well-being. Overall, we

did not find a cluster only characterized by the protective factors, or a cluster only characterized by the risk factors. It is apparent that findings from the variable-centred approach might be misleading, especially if these findings were to reflect the features of population under review, rather than the features of variables.

Some possible explanations can be proposed to explain the relatively lower level of functioning reported by participants in Cluster 5. First, this cluster is characterized by a combination of risk factors (e.g., low Canadian Identity, low Ethnic Evaluation, being foreign-born) and only one protective factor (e.g., high Chinese-External Identity). The fact that there were more risk than protective factors in this cluster may explain why participants in Cluster 5 reported poorest psychological well-being. Similarly, participants in Cluster 3 are characterized by both protective (e.g., high Canadian Identity, being Canadian-born) and risk factors (e.g., low Ethnic Evaluation, particularly low Chinese-External Identity). This combination may account for its better well-being in higher self-esteem and low depressive symptoms, but not in the level of acculturative stress, than those in Cluster 5.

Second, the fact that participants in Cluster 5 reported the lowest level of well-being is similar to findings in past research. In past research, using Berry's acculturation types, individuals who failed to identify with either the ethnic culture or the host culture are often referred to as "marginalized." The sense of not fitting in or not belonging to any culture has been reported by many ethnic individuals living in multiple cultural contexts. This sense of alienation or marginalization may directly relate to the poorer psychological well-being reported by participants in Cluster 5.

This finding is particularly striking since this cluster is the largest cluster found in the current sample. It is possible that this finding may be sample-specific. However, the identity factors and demographic variables that were the basis for these analyses showed a trend of continuity with findings from past research. Therefore, the resulting clusters and their relationship with other variables may be applicable to Chinese groups in other settings

On the other hand, participants in Cluster 5 did not report extremely low levels of psychological well-being compared with those in the other four clusters, when comparing the mean levels of their psychological well-being. We found that participants in Cluster 5 scored around the mid-point on each scale of psychological well-being, whereas participants in the other four cluster scored around the positive end of well-being measure. In other words, although across the five clusters, participants in Cluster 5 consistently reported lower levels of psychological well-being, their functioning was not toward the extreme negative end of well-being. In fact, the lack of difference in self-esteem between participants in Cluster 2 and Cluster 5, in depressive symptoms among participants in Cluster 1, Cluster 2, and Cluster 5, and in acculturative stress among participants in Cluster 1, Cluster 2, Cluster 3 and Cluster 5, all indicate the similarities in their levels of functioning. The absence of large differences in the psychological well-being of participants in different clusters contrasts with the significant relationships found in the variable-centred analyses.

Bourhis, Moïse, Perreault, and Senécal (1997) suggested that marginalized category should be further divided into anomie ("unidentified" in the current study) and

individualism. They argued that individuals who do not identify strongly with either ethnic culture or host culture may prefer to identify themselves as individuals, rather than as members of specific ethnic or cultural groups. Therefore, some individuals who do not identify strongly with either culture are not being rejected by both cultures, and they do not fail to fit into any culture. This might explain why participants in Cluster 5 did not suffer from low psychological well-being to the extent that we would expect to see for someone who identified with neither culture. The relationship between acculturation groups and well-being should therefore not simply examine the typologies, but should also consider the reasons why people fall into specific subgroups.

Variable-Centred vs. Pattern-Centred Approach

When variables are examined individually, we can focus on individual differences and we can make general statements about the associations between variables. However, this variable-centred approach is limited in many ways. First, individuals are best described by variables that are examined together, which typically rests on the detection of a statistically significant interaction effects in a variable-centred approach. However, the replication of interaction effects tends to be rare (Shiner, Tellegen, & Masten, 2001). Second, examining interaction effects conveys nothing about the number of individuals who actually face high levels of both risk and protective factors (Luthar & Cushing, 1999). Therefore, we never know how many participants an interaction effect applies to, or if the interaction effect is applicable to people in a natural setting when they are understood as a whole.

In general, the description of variables over individuals may be difficult to

translate into properties characterizing individuals within a group, especially when multiple variables are considered simultaneously. In fact, it is extremely difficult to do so when the information provided by the statistical method is variable oriented, rather than person oriented (Bergman & Magnusson, 1997). For example, in the current study, we have tried our best to name the five clusters based on the composition of the four identity factors derived from a factor analyses in a variable-centred approach. However, we might not fully capture the true nature of the participants in each cluster because other unexamined factors may be the driving force of why these people are grouped together.

Bergman and Magnusson (1997) articulated the relative merits of adopting a pattern-centred approach, and its underlying beliefs and principles. Individuals are best understood with processes that involve many factors. These factors relate to each other in a complicated but lawful way. Therefore, these processes not only are specific to the individuals under study, but also function as patterns consisting of multiple factors. Although theoretically an infinite variety of patterns can be found, some "common types" should be observed more often than others. In addition, by applying cluster analyses (rather than a cut-off method), typical patterns of natural clusters can be identified. These natural clusters are the groups "really out there" (Meehl, 1992).

From the results of the pattern-centred approach, five cluster groups were formed. However, groups characterized only by protective factors or only by risk factors were not found. In fact, what we learned from these five clusters is that some variables may not cluster together in a natural setting. For example, although high Chinese-Internal Identity and low Ethnic Evaluation may be related to poorer psychological well-being, and

although our interpretation of the suppressor effect is consistent with findings in previous research, a combination of high Chinese-Internal Identity and low Ethnic Evaluation did not co-exist in any cluster.

Overall, both variable-centred and pattern-centred approaches have relative advantages for advancing our understanding about the nature of ethnic identity and acculturation. By using the variable-centred approach, we can make general statements about the relationships among variables. Therefore, theories can be formulated in terms of variables. For instance, the multidimensional structure of ethnic identity was comprehensively assessed with variables as the main units of analysis in earlier analyses. By doing so, we provided a tentative solution to the problem in past research of inconsistently assessing selected dimensions of ethnic identity and acculturation. Similarly, based on the results of the relationship between identity factors and psychological well-being, we were able to pay specific attention to the evaluative component of ethnic identity, which helped us generate explanations about the relationship between ethnic identity and well-being. From an intervention perspective, focusing on promoting positive regard for ethnic groups, for example, may have the most positive impact on ethnic individuals, regardless of their levels of ethnic identity.

On the other hand, applying a pattern-centred approach led to successfully identifying sub-groups of individuals with similar patterns of identities in the current study. We tried to describe the complex and heterogeneous nature of the current sample. Exploring the configuration of the five cluster groups changed our focus to specific groups of individuals, rather than understanding individual variables. Examining the

relationship between ethnic identity and acculturation across the whole sample and within each cluster illustrated the uniqueness of each sub-group. We can use the results of variable-centred analyses to construct theories or hypotheses, but we are limited in applying these results to describe the experiences of actual individuals.

Although most variable-centred studies, including the current study, explored more than one dimension at a time in order to capture the rich interplay among multiple dimensions, the associations among dimensions are correlational from a statistical perspective. In contrast, the configurations of the five clusters not only consisted of multiple factors, but also formed in a natural way, which is beyond what the variable-centred approach can predict. In other words, although the results from the variable-centred and pattern-centred approach were both derived from the responses provided by participants, examining their responses in the pattern-centred approach reflected the actual experiences of the participants, which increases the ecological validity of the results.

Finally, due to the statistical nature of results derived from a variable-centred approach, and also due to the lawful nature of results derived from a pattern-centred approach, it has been suggested that the patterns or the typologies identified through a pattern-centred approach, at a global level, are more stable over time for the same person (Wångby, Bergman, & Magnusson, 1999). A pattern-centred approach may be a more applicable methodology for understanding the relationships between constructs longitudinally. We would like to see if cluster memberships can be replicated by other studies or can be followed longitudinally. This would be particularly meaningful in terms

of planning interventions and understanding the developmental pathways of individuals.

Study Limitations & Future Directions

The current study was limited in a number of ways, and several directions for future research stem from the findings. First, this study, like most studies about ethnic identity and acculturation, uses participants' self-reports of various constructs which were all collected at one time. How participants present themselves may be different from what they actually do or think, or may differ if they were in another context (e.g., at home or with friends). Future studies may consider using other methods to assess these constructs in different contexts (e.g., an observational measure of individuals' social interaction with other Chinese and non-Chinese) in combination of participants' self-reports in order to capture a more complete picture of their ethnic identity and acculturation.

Second, this study was correlational in design, and therefore no conclusions about causality can be drawn. It is possible, for instance, that participants with better psychological well-being are more likely to identify themselves strongly with both Chinese and Canadian cultures, which would place them in the Dual Cultural Identity-Low Chinese Behaviour Group. Studies that follow samples over time may be more likely to determine whether changes in cultural identities contribute to changes in psychological well-being or vice versa.

Third, the use of university students and the location of the current study (i.e., multicultural metropolitan cities) limits the generalizability of the findings. For example, according to the 1996 Census (Statistics Canada, 1998), the majority of Chinese

immigrants live in metropolitan cities, like Vancouver and Toronto. A huge settlement of Chinese immigrants would facilitate the visibility of Chinese culture (e.g., having Chinese temples or cultural centres), and the availability of specific services for Chinese immigrants (e.g., bi-lingual services in the public or the private sectors). A replication of the current study in community samples and in non-metropolitan areas will be important.

Fourth, we do not know whether participants' responses were affected by the fact that the instruments were administered in English, regardless of their English-language proficiency. Existing evidence suggests that language may actually affect how participants report their cultural identifications. For example, Bond and Yang (1982) found that when Chinese-English bilinguals in Hong Kong completed cultural identity measures in English, they reported identifying more with their Chinese heritage than when they completed the instruments in Chinese. Clearly, future studies should explore the impact of language on reporting cultural identity.

In addition to addressing the limitations of the current study, there are other directions for future research that will help us better understand the relationship between ethnic identity and acculturation, and the relationship between individuals' cultural identities and their psychological well-being. First, some constructs in the current study were assessed by the operational criteria generated from Western psychology, such as depressive symptoms. Although depressive symptoms were measured reliably, depression may not be expressed or understood the same way across cultures. Therefore, essential elements in describing individuals' well-being may not be fully captured by these constructs and measures. The notion of cultural influences on the expression of

depression among Chinese has undergone rigorous investigations (Kleinman & Good, 1985; Lin, 1989). These studies find that somatic symptoms are central components of Chinese people's experiences of depression. It has been recommended that a qualitative interview is important to capture the uniqueness of psychological experiences within a cultural context (Okazaki, 1998). Thus, future research should attempt to understand these processes at an individual's descriptive level among Chinese Canadians.

Second, ethnic identity and Canadian Identity were assessed as independent identification processes, and this orthogonal model should be quite comprehensive in capturing identification processes among the majority of Chinese people in Canada. However, whether this model can be applied to people who are biracial Chinese (i.e., only one parent is Chinese) should be further explored. In the current study, biracial Chinese were not excluded from participating, although the number was very small (N = 11). The literature has suggested that there are shortcomings when models of racial identity development are applied to biracial individuals, and that the unique aspects of the experience of biracial individuals should be addressed specifically (Poston, 1990). Furthermore, some recent studies have examined the issue of identity among Asian Americans within the framework of racial identity research, in addition to ethnic identity research (Alvarez & Helms, 2001). Important constructs, like racism and oppression, are not addressed in current models of ethnic identity for Asian Americans (e.g., Phinney, 1989). Although Asians (including Chinese) in North America have been labelled as a "model minority" by the media, experiences related to race and racism may be important for understanding the experiences of Asians or Chinese people in a Canadian context.

Third, existing models of psychological well-being focus predominantly on how people evaluate their own specific characteristics and conditions. However, the current study found that Ethnic Evaluation stood out as a unique and important construct in relation to other identity factors and to individuals' psychological well-being. It is apparent that both ethnic identity and well-being can be better understood when external factors are incorporated into our conceptualizations about the relationships between identity and well-being. In the future, other external factors should be included, such as perceptions of discrimination (Luhtanen & Crocker, 1992) or racial adjustment (Alvarez & Helms, 2001). The influence of external context may play a key role in understanding the relationship between identity and well-being, and may help in developing a comprehensive model of how identity and well-being are related.

CHAPTER 7: SUMMARY

This thesis first assessed a multidimensional conceptual model of ethnic identity and acculturation among Chinese Canadians. Ethnic identity was found to be multidimensional, including Chinese-Internal Identity and Chinese-External Identity, whereas acculturation was uni-dimensional. The evaluative nature of ethnic identity (Ethnic Evaluation) differed from the identification process itself. Some aspects of ethnic identity and acculturation were impacted by individuals' contact with Canadian and Chinese cultures, whereas other aspects related primarily with chronological age.

A pattern-centred methodology was used next to classify participants based on their reports of ethnic identity and acculturation. Five groups were identified. Although several of these five groups resembled Berry's four acculturation types, the final presentation of sub-groups was more complex, due in part to the multidimensional nature of both constructs. These five groups were best characterized by the pattern of their responses to ethnic identity and acculturation measures, rather than by features of their demographic backgrounds or psychological well-being.

This thesis also successfully identified several risk and protective factors for well-being (e.g., low Ethnic Evaluation). Since no group was characterized exclusively by risk or protective factors, only one between-group difference in the level of well-being was found. Lastly, the relationship between ethnic identity and acculturation differed depending on which dimension was examined and whether the focus was across whole sample or within each group. Overall, multiple ways of understanding their relationship was necessary, further highlighting the within-group diversity among Chinese Canadians.

CHAPTER 8: CONCLUSION

Increasing rate of immigration from Chinese-speaking countries is evident in Canada. The results of the current study shed light on the adaptation processes of immigrants with Chinese origins, and provides significant research and clinical implications for people working with this population. The experiences of foreign-born immigrants are qualitatively different from the experiences of Canadian-born Chinese. Such experiences may serve as a risk factor for poorer psychological well-being. Consistently, the largest sub-group found in the current study was the group reporting the relatively lower psychological well-being, and was comprised exclusively of immigrants. These results suggest that there may be a pressing need for effective clinical interventions for this specific population.

Although demographic background information, like being foreign-born, can tell a general story about Chinese Canadians, identity processes are actually more important for describing who they are and what they have experienced. A Chinese individual may practice many Chinese related customs and behaviours, without feeling strongly connected to the Chinese group or culture. Or, a Chinese person may see him/herself strongly as Chinese, and also live a western or Canadian life-style. From other people's perspective, practicing Chinese behaviours is the most obvious sign of being a Chinese, which may be an inaccurate assumption. In fact, there are many ways to be Chinese in Canada, and understanding ethnic identity and acculturation among Chinese Canadians as a multidimensional phenomenon is one of the most repeated themes in the current study.

On the other hand, although others' perspectives may not be always accurate,

their perceived evaluations of the Chinese as a group have a large impact on the well-being of Chinese Canadians. This impact can be powerful not only to people strongly identifying themselves as Chinese, but also to Chinese people who are less ethnically identified. Other aspects of identity, although important, less consistently influence well-being. In Canada, a multi-ethnic country, expressed values or statements about other ethnic groups play a major role in others' lives, especially in their well-being.

In this study, both a variable-centred and a pattern-centred approach were applied. Each method provided unique information about the constructs under review; at the same time, using two methods has made the presentation of the results somewhat complicated. It is difficult to link the findings derived from the variable-centred approach to the findings derived from the pattern-centred approach. This difficulty may not be easily resolved, especially when our knowledge is generally based on findings derived from the variable-centred approach. We strongly support more rigorous research using the pattern-centred approach in order to understand people as a whole.

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Footnotes

[1]The title of this questionnaire used "acculturation" instead of "ethnic identity." The first version of ARSMA (Cuéllar, Harris & Jasso, 1980) adopted a bipolar perspective by assessing the degree of losing the ethnic culture as an index for level of acculturation of ethnic minority individuals. A recent revision (ARSMA-II; Cuéllar et al., 1995) changed its bipolar approach to an orthogonal scaling approach. Therefore, an individual's orientation toward ethnic and host cultures can be assessed independently and separately, although the name of the questionnaire remains the same.

[2]When assessing the acculturation of Asian groups in the U. S., the most commonly used measure is the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn et al., 1987). The current study uses the Acculturation Rating Scale for Mexican-Americans-II (ARSMA-II; Cuéllar et al., 1995) instead of the SL-ASIA for the following two reasons. First, although the SL-ASIA is intended to be multidimensional and is reported to have three of the five factors matched with ARSMA factors (Ownbey & Horridge, 1998; Suinn, Ahuna, & Khoo, 1992), it is not clear whether it achieves these goals. Furthermore, the total score of the SL-ASIA is used to designate an individual's standing in high or low acculturated groups, which leads to interpreting acculturation as a bipolar construct.

Second, the recent revision of ARSMA (ARSMA-II; Cuéllar et al., 1995) adopts the orthogonal and multidimensional approach to assess acculturation. Other scholars have argued that SL-ASIA should adopt a similar strategy (Ponterroto, Baluch, & Carielli, 1998). The bipolar scaling approach in the original ARSMA, as well as the SL-

ASIA, may prompt participants to declare a middle-ground identification, and may prevent one from identifying orthogonal cultural identifications (Sanchez & Fernandez, 1993).

[3]The positive relationship between age and Chinese-Internal Identity was further explored by examining the relationship between age and ego identity. Past research on ego identity has found a positive relationship between older age and achieved ego identity status (Adams, Bennion, & Huh, 1989). Since ethnic identity is a part of an individual's overall identity, the positive relationship between age and Chinese-Internal Identity could be related to an individual's ego identity status. This hypothesis was tested by examining the relationship between ego identity status and the Chinese-Internal Identity, when controlling for other demographic variables.

A self-report Identity Status Inventory (Adams, Fitch, & Shay, 1979) was a part of the overall questionnaire package given to participants. This inventory assesses individuals' exploration of options and commitments in occupational, political, and religions beliefs, and has demonstrated good reliability and validity (Adams et al., 1989). Six statements were presented for each category of identity status (foreclosure, diffusion, moratorium, achieved). Scale scores were calculated for each identity status, and each participant was assigned one specific identity status accord to the guidelines provided by Adams and his colleagues. Ego identity status was entered into a regression along with age, nativity, length of residence, and age of arrival as predictors of Chinese-Internal Identity.

The results of this regression found that both age and ego identity status were

positively related to Chinese-Internal Identity when the other demographic variables were controlled for. A subsequent ANOVA and post hoc analysis revealed that identity achieved participants reported higher Chinese-Internal Identity than those in stages of diffusion, foreclosure, and moratorium, whereas these three groups did not differ in their Chinese-Internal Identity. On the other hand, ego identity status was not related to Chinese-External Identity, Canadian Identity, and Ethnic Evaluation.

[4]Meyer (2000) suggested that the use of factor analyses may disguise the existence of important variations in the relationships among individual variables. Cluster analysis may offer an appropriate additional analytic tool that allows this possibility to be explored. Therefore, another cluster analysis was performed to classify participants based on their scores on the original 13 variables (versus the four factor scores). By doing so, potential meaningful but neglected patterns of relationship among variables can be further explored. This analysis produced a 3-cluster. It was evident that these three clusters conformed to the four factors (Chinese-Internal Identity, Chinese-External Identity, Canadian Identity, and Ethnic Evaluations). No specific individual variable was found to have additional discriminating effects on how the clusters were formed. Thus, the use of factor analyses to combine variables into distinct factors did not disguise or ignore the existence of important variations in the relationships among variables. Therefore, the results of clustering (a 5-cluster solution) based on participants' scores on four factors were used in the current study.

[5]The Result section is generally reported with past tense. However, in order to portray these naturally formed clusters as a real reflection of people's experiences,

present tense is used when describing the profiles of each cluster.

[6]In order to investigate if the relationship between ethnic identity variables and psychological well-being was due to a shared association with ego identity status, the ego identity status was entered along with age as a control variable. The results showed that ego identity status was not related to any indicator of well-being. Therefore, it was not included in these analyses.

Appendix A-1

Informed Consent Agreement

Informed Consent Agreement "Ethnic Identity and Acculturation Study"

You are being invited to participate in a study entitled "Ethnic Identity and Acculturation Study", conducted by Ai-lan Chia. As a graduate student, this research is part of the requirement for a master's degree in Clinical Life-Span Psychology, and it is conducted under the supervision of Dr. Catherine Costigan, of the Department of Psychology.

The purpose of this study is to examine the relationship between ethnic identity and acculturation in young adults with Chinese origin in Western Canada. Although these two concepts have been studied before, less is known about what they mean for people with Chinese origin and how they differ from one another. You are being asked to participate because you may have Chinese origins, regardless of whether you consider this connection important. If you agree to participate in this study, your participation will include filling out questionnaires which constitute informed consent. This process may take about 30 to 50 minutes.

It is not anticipated that you will experience discomfort, or feel any inconvenience, other than spending a period of time in completing the questionnaires. The potential benefit of your participation is to have this opportunity to reflect on your acculturation and ethnic identity as an individual. In addition, your input will benefit future research aims at helping the overseas Chinese population.

Your participation in this study is completely voluntary. If you decide to participate, you may omit any question that you feel uncomfortable with, and you may withdraw at any time without any consequences or any explanation. If you do withdraw, your data will be used in the analyses only if you agree. When data are reported, it will be done in terms of group results and no data will be reported for any individual. In addition, data will not contain any identifying information, only a research number. Data will be stored in a locked lab room assigned to the co-investigator. Only the principal investigator, co-investigator, and the supervisor of the co-investigator will have access to them. Although the questionnaire is anonymous, the detailed information requested in the Background Questionnaire may identify you. However, the researcher will in all cases where this should occur guarantee complete confidentiality. The results of this study will be shared with you if you would like, and may be presented at a professional conference or published in an academic journal.

You may contact me at 250-472-4695 or my supervisor, Dr. Catherine Costigan, at 250-721-7529. In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Associate Vice President Research at the University of Victoria (250-721-7968).

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

_____ _____ _____

Your Name (Print) Signature (Sign) Date

A COPY OF THIS CONSENT WILL BE LEFT WITH YOU, AND A COPY WILL BE TAKEN BY THE RESEARCHER.

Appendix A-2

Debriefing Sheet

Debriefing Sheet

The purpose of this study is to examine the relationship between **ethnic identity** and **acculturation** in people with Chinese origins in Western Canada. Although these two concepts have been studied before, little is known about what they mean for people with Chinese origins. In addition, little is known about how they differ from one another: people tend to use these terms interchangeably.

In this study, ethnic identity refers to an individual's identification with their ethnic culture. Some people may have stronger ethnic identification than others, although they may come from the same ethnic group. In addition, ethnic identity can be expressed in multiple ways. For example, a Chinese person may feel strongly attached to his/her ethnic group, but exhibit very few Chinese behaviors or hold few traditional Chinese values.

Acculturation, on the other hand, refers to an individual's identification with the host culture, which is the Canadian culture in this study. Although people reside in a Canadian context, they may identify with this culture to a varying degree. Acculturation also includes multiple dimensions. For example, an individual may celebrate or practice Canadian traditions, but not see him/herself strongly as Canadian.

The responses you gave on the questionnaires will help us evaluate these conceptualizations of ethnic identity and acculturation. In addition, we will assess whether there are differences in ethnic identity and acculturation based on factors, such as generational status, ethnic and English use, age of immigration at Canada, etc. This study is expected to be completed by the end of August of 2001. If you would like to find out what the findings are, please feel free to contact me at 472-4695 or achia@uvic.ca.

Appendix B-1

Background Questionnaire

Background Questionnaire Today's Date:_____

1. Age: _____ Date of Birth: _____/_____/_____
2. Gender: Male _____ Female _____

3. Your Major: _____

4. Degree/Program: _____ a) Bachelors: BA_____ , BSc _____, BEd_____
_____ b) Diploma (in _____)
_____ c) Masters: MA_____ , MSc _____ , MEd _____
_____ d) Doctorate: PhD_____ , EdD_____
_____ e) Unclassified or others (please specify: _____)

5. What is your ethnic background? _____
(e.g. Chinese, Taiwanese, Chinese from Hong Kong, Chinese Canadian, etc)

6. What is your father's ethnic background? _____

7. What is your mother's ethnic background? _____

8. What is your status in Canada (Check one):
Citizen _____ Permanent Resident_____ Refugee _____ Student _____
Working_____ Others (please specify: _____)

9. What is your father's status in Canada? _____

10. What is your mother's status in Canada? _____

11. What is your country of origin?_____
(e.g. China, Taiwan, Hong Kong, Singapore, etc.)

12. In your family, which generation was the first to be born in Canada? (Check one)
_____ a) No one was born in Canada. I am an immigrant.
_____ b) I was the first generation born in Canada.
_____ c) My parent(s) was/were the first generation born in Canada.
_____ d) My grandparent(s) was/were the first generation born in Canada.
_____ e) My great-grandparent(s) was/were the first generation born in Canada.
_____ f) Other (please specify: _____)

If your answer is "a", please continue answering following questions; otherwise, skip to Question 19.

13.When did you/your family immigrate to Canada? Year _____ Month _____

14. How old were you when you/your family immigrated to Canada?
Year ____ Month____

15. Why did you/your family immigrant to Canada?
_____
_____

16. My parents (check one)…
____ both live here most of the time.
____ do not live here most of the time.
____ one of them flies back and forth (Please check: it is my mom___, it is my dad ___)

17. In the future, do you think *you* will ….
___ stay in Canada ___ go back to my country of origin ___ live somewhere else

Why?_____

18. In the future, do you think *your family* will ….
___ stay in Canada ___ go back to our country of origin ___ live somewhere else

Why?_____

19. What language do you speak most of the time *at home*? (Check one)
English _____ French _____ Cantonese _____ Mandarin _____ Min Nan _____
Hakka _____ Others (please specify: _____)

20. What language do you speak most of the time *outside the home*?_____

21. How would you rate your *English proficiency* in the following areas?

Writing:	Poor _____	Fair _____	Good _____	Excellent _____
Reading:	Poor _____	Fair _____	Good _____	Excellent _____
Listening:	Poor _____	Fair _____	Good _____	Excellent _____
Speaking:	Poor _____	Fair _____	Good _____	Excellent _____

22. How would you rate your *ethnic language proficiency* in the following areas?

Writing:	Poor _____	Fair _____	Good _____	Excellent _____
Reading:	Poor _____	Fair _____	Good _____	Excellent _____
Listening:	Poor _____	Fair _____	Good _____	Excellent _____
Speaking:	Poor _____	Fair _____	Good _____	Excellent _____

23. What was your total score on the TOEFL test (Test of English as a Foreign Language)? Score (Computerized Version): _____. Score (Paper-Pencil Version): ____

(If you did not take this test, please check here: _____)

24. What was your total score on the English Provincial Exam at the time you applied to study at UVic? Score: _____. (If you did not take this test, please check here: _____)

25. How many years of formal schooling have you received in Canada?_____

26. What was your GPA last year? _____

27. What is your religious background? (Check all that apply)
Christian _____ Catholic _____ Buddhism _____ Taoism _____
Folk Religion Others (please specify: _____)
_____

28. How involved are you in your religion?
Very little _____ Some _____ Moderate _____ Very much _____

29. What is you father's occupation?
_____ Service (please specify: _____)
_____ Professional (please specify: _____)
_____ Clerical (please specify:_____)
_____ Self-Employed (please specify: _____)
_____ Homemaker
_____ Not working/ Retired
_____ Others (please specify: _____)

30. What is your mother's occupation?
_____ Service (please specify: _____)
_____ Professional (please specify: _____)
_____ Clerical (please specify:_____)
_____ Self-Employed (please specify: _____)
_____ Homemaker
_____ Not working/ Retired
_____ Others (please specify: _____)

31. What is the highest level of education completed by your father?
_____ Elementary (Grade 1 to Grade 6)
_____ Junior High School/ Middle School (Grade 7 to Grade 9)
_____ Senior High School/High School (Grade 10 to Grade 12)
_____ College/Vocational School
_____ University
_____ Graduate School/Professional Degree

32. What is the highest level of education completed by your mother?
_____ Elementary (Grade 1 to Grade 6)

_____ Junior High School/ Middle School (Grade 7 to Grade 9)
_____ Senior High School/High School (Grade 10 to Grade 12)
_____ College/Vocational School
_____ University
_____ Graduate School/Professional Degree

33. Estimated family income (Check one):

____ a) below $ 10,000	____ b) $10,000-$ 25,000	____ c) $ 25,000 - $ 40,000
____ d) $40,000-$ 50,000	____ e) $ 50,000-$ 75,000	____ f) $ 75,000- $ 100,000
____ g) above $ 100,000	____ h) not sure	

34. Where do you live? (Check one)
____ Campus ____ Off Campus/Not with family _____ Off Campus/Live with family

35. What is the ethnic mix in the neighbourhood *you live in now*? Please estimate how many people in your neighbourhood who are Chinese, White and other ethnicities.

	None	Few	About 1/3	About Half	About 2/3	Mostly	All or Almost All
Chinese	1	2	3	4	5	6	7
White	1	2	3	4	5	6	7
Other Ethnic Groups	1	2	3	4	5	6	7

36. What was the ethnic mix in the neighbourhood where *you grew up*? Please estimate how many people in your neighbourhood who are Chinese, White and other ethnicities.

	None	Few	About 1/3	About Half	About 2/3	Mostly	All or Almost All
Chinese	1	2	3	4	5	6	7
White	1	2	3	4	5	6	7
Other Ethnic Groups	1	2	3	4	5	6	7

37. What was the ethnic mix in the high school *you attended*? Please estimate how many people in your school who are Chinese, White and other ethnicities.

	None	Few	About 1/3	About Half	About 2/3	Mostly	All or Almost All
Chinese	1	2	3	4	5	6	7
White	1	2	3	4	5	6	7
Other Ethnic Groups	1	2	3	4	5	6	7

38. What do you find stressful about living in Canada?

39. Do you find anything particularly stressful as a consequence of being a Chinese in Canada?

40. Do you think you feel more stressed than other people? Please elaborate on your answer.

Appendix B-2

Chinese Identity & Canadian Identity Scale

(adapted from Jewish-American Identity Scales; Zak, 1973)

Chinese-Canadian Identity Scale

Please circle the answer that best matches your response to each statement.	Strongly Disagree	Disagree	Mildly Disagree	Neither Disagree nor Agree	Mildly Agree	Agree	Strongly Agree
1. When an important newspaper insults Chinese people, I feel that it is insulting me.	1	2	3	4	5	6	7
2. My fate and future are bound up with that of the Chinese everywhere.	1	2	3	4	5	6	7
3. If a stranger were to meet me and mistake me for a non-Canadian, I would correct his/her mistake, and tell him/her that I am a Canadian.	1	2	3	4	5	6	7
4. My fate and future are bound up with that of the Canadian people.	1	2	3	4	5	6	7
5. Anti-Chinese is likely to become a serious threat to Chinese in Canada.	1	2	3	4	5	6	7
6. Chinese the world over are my kin (as "one family").	1	2	3	4	5	6	7
7. My destiny is bound up with the destiny of the Chinese in Canada.	1	2	3	4	5	6	7
8. The mixture of many races and cultures in Canada contributes to its greatness.	1	2	3	4	5	6	7
9. It is necessary to take an active interest in the fate of Chinese everywhere in order to be a good Chinese in Canada.	1	2	3	4	5	6	7
10. I regard Canadians everywhere as my kin (as "one family").	1	2	3	4	5	6	7
11. Being a Canadian plays an important part in my life.	1	2	3	4	5	6	7

	Strongly Disagree	Disagree	Mildly Disagree	Neither Disagree nor Agree	Mildly Agree	Agree	Strongly Agree
12. When an important newspaper insults the Canadian people, I feel that it is insulting me.	1	2	3	4	5	6	7
13. Being Chinese plays an important part in my life.	1	2	3	4	5	6	7
14. When an important newspaper praises the Chinese, I feel that it is praising me.	1	2	3	4	5	6	7
15. One of my most important duties as a Chinese-Canadian is loyalty to Canada.	1	2	3	4	5	6	7
16. My destiny is closely connected to the destiny of Canada.	1	2	3	4	5	6	7
17. If I were to be born all over again, I would wish to be born a Chinese.	1	2	3	4	5	6	7
18. When an important newspaper praises the Canadian people, I feel that it is praising me.	1	2	3	4	5	6	7
19. If a non-Chinese were to meet me and mistake me as being non-Chinese, I would correct his/her misperception and tell him/her that I am a Chinese.	1	2	3	4	5	6	7
20. If I were to be born all over again, I would wish to be born a Canadian.	1	2	3	4	5	6	7

Appendix B-3

Ethnic Affirmation & Belongingness & Ethnic Identity Achievement

Please see the reference below for the questionnaire:

Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with diverse groups. Journal of Adolescent Research, 7 (2), 156-176.

Appendix B-4

Canadian Affirmation & Belongingness, Canadian Identity Achievement (adapted from Ethnic Affirmation & Belongingness, and Ethnic Identity Achievement subscales of Multigroup Ethnic Identity Measure, MEIM; Phinney, 1992)

Canadian Identity

These questions are about your Canadian identity or your Canadian background. Please indicate how you feel about it or react to it by circling one best answer.	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I have spent time trying to find out more about my Canadian background, such as its history, traditions, and customs.	1	2	3	4
2. I have a clear sense of being a Canadian and what it means for me.	1	2	3	4
3. I think a lot about how my life will be affected by my Canadian group membership.	1	2	3	4
4. I am happy that I am Canadian.	1	2	3	4
5. I am not very clear about the role of my Canadian background in my life.	1	2	3	4
6. I really have not spent much time trying to learn more about the culture and history of Canada.	1	2	3	4
7. I have a strong sense of belonging to Canada.	1	2	3	4
8. I understand pretty well what being a Canadian means to me, in terms of how to relate to other Canadians and other groups.	1	2	3	4
9. In order to learn more about my Canadian background, I have often talked to other people about being a Canadian.	1	2	3	4
10. I have a lot of pride in my Canadian background and Canada's accomplishments.	1	2	3	4
11. I feel a strong attachment towards Canada.	1	2	3	4
12. I feel good about my Canadian background.	1	2	3	4

Appendix B-5

Collective Self-Esteem Scale

(adapted from Collective Self-Esteem, CSE; Luhtanen & Crocker, 1992)

Feelings About Your Ethnic Group

These following statements are about how you might feel about your ethnic group and your membership in your group. Please read each statement carefully, and circle the number that best matches your response to each statement.	Strongly Disagree	Disagree	Mildly Disagree	Neither agree Nor Disagree	Mildly Agree	Agree	Strongly Agree
1. I am a worthy member of my ethnic group.	1	2	3	4	5	6	7
2. I often regret that I belong to the ethnic group I do.	1	2	3	4	5	6	7
3. Overall, my ethnic group is considered good by others.	1	2	3	4	5	6	7
4. Overall, my ethnic group membership has very little to do with how I feel about myself.	1	2	3	4	5	6	7
5. I feel I don't have much to offer to my ethnic group.	1	2	3	4	5	6	7
6. In general, I'm glad to be a member of my ethnic group.	1	2	3	4	5	6	7
7. Most people consider my ethnic group, on the average, to be more ineffective than other ethnic groups.	1	2	3	4	5	6	7
8. The ethnic group I belong to is an important reflection of who I am.	1	2	3	4	5	6	7
9. I am a cooperative participant in my ethnic group.	1	2	3	4	5	6	7
10. Overall, I often feel that the ethnic group of which I am a member is not worthwhile.	1	2	3	4	5	6	7
11. In general, others respect my ethnic group.	1	2	3	4	5	6	7
12. My ethnic group is unimportant to my sense of what kind of person I am.	1	2	3	4	5	6	7
13. I often feel I'm a useless member of my ethnic group.	1	2	3	4	5	6	7
14. I feel good about the ethnic group I belong to.	1	2	3	4	5	6	7
15. In general, others think that my ethnic group is unworthy.	1	2	3	4	5	6	7
16. In general, belonging to my ethnic group is an important part of my self-image.	1	2	3	4	5	6	7

Appendix B-6

Chinese Cultural Values

Please see the reference below for the questionnaire:

The Chinese Culture Connection (1987). Chinese values and the search for culture-free dimensions of culture. Journal of Cross-Cultural Psychology, 18 (2), 143-164.

Appendix B-7

Canadian Cultural Value-Individualism Scale

(Self-Reliance & Competition, and Emotional Distance from In-group subscales)

Please see the reference below for the questionnaire:

Triandis, H. C., Bontempo, R., Betancourt, H., Bond, M., Leung, K., Brenes, A., Georgas, J., Hui, C. H., Marin, G., Setiadi, B., Sinha, J. B. P., Verma, J., Spangenberg, J., Touzard, H., & de Montmollin, G. (1986). The measurement of the etic aspects of individualism and collectivism across cultures. Australian Journal of Psychology, 38 (3), 257-267.

Triandis, H. C., Bontempo, R., Vallareal, M. J., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. Journal of Personality and Social Psychology, 54 (2), 323-338.

Appendix B-8

Chinese & Canadian Behavioural Practices & Customs

(adapted from Acculturation Rating Scale for Mexican Americans-II,

ARSMA-II; Cuéllar et al., 1995)

Your Life Style

Please circle the number for each statement that best applies to you.	Not At all	Not very Often	Moderat	Very Often	Almost Always
1. I speak Chinese.	1	2	3	4	5
2. I speak English.	1	2	3	4	5
3. I enjoy speaking Chinese.	1	2	3	4	5
4. I enjoy speaking English.	1	2	3	4	5
5. I associate with Caucasians.	1	2	3	4	5
6. I associate with Chinese and/or Chinese Canadians.	1	2	3	4	5
7. I enjoy listening to Chinese language music.	1	2	3	4	5
8. I enjoy listening to English language music.	1	2	3	4	5
9. I enjoy Chinese language TV.	1	2	3	4	5
10. I enjoy English language TV.	1	2	3	4	5
11. I enjoy English language movies.	1	2	3	4	5
12. I enjoy Chinese language movies.	1	2	3	4	5
13. I enjoy reading in Chinese.	1	2	3	4	5
14. I enjoy reading in English.	1	2	3	4	5
15. I write in Chinese.	1	2	3	4	5
16. I write in English.	1	2	3	4	5
17. My thinking is done in English.	1	2	3	4	5
18. My thinking is done in Chinese.	1	2	3	4	5

	Not At all	Not very Often	Moderately	Very Often	Almost Always
19. My contact with a Chinese country has been…	1	2	3	4	5
20. My contact with Canada has been…	1	2	3	4	5
21. My father identifies himself as a "Chinese"	1	2	3	4	5
22. My father identifies himself as a "Canadian."	1	2	3	4	5
23. My mother identifies herself as a "Chinese"	1	2	3	4	5
24. My mother identifies herself as a "Canadian."	1	2	3	4	5
25. My friends, while I was growing up, were of Chinese origin.	1	2	3	4	5
26. While I was growing up, my friends were of Caucasian origin.	1	2	3	4	5
27. My family cooks Chinese foods.	1	2	3	4	5
28. My family cooks Canadian foods.	1	2	3	4	5
29. My friends now are of Caucasian origin.	1	2	3	4	5
30. My friends now are of Chinese origin.	1	2	3	4	5
31. I like to identify myself as a Caucasian.	1	2	3	4	5
32. I like to identify myself as a Chinese Canadian.	1	2	3	4	5
33. I like to identify myself as a Chinese.	1	2	3	4	5
34. I like to identify myself as a Canadian.	1	2	3	4	5

Appendix B-9

Self-Esteem

Please see the reference below for the questionnaire:

Rosenberg, M. (1986). Appendix A-1 New York State Self-Esteem Scale (Rosenberg Self Esteem; pp. 201). Conceiving the Self. Kreiger, Melbourne.

Appendix B-10.

Depressive Symptoms

Please see the reference below for the questionnaire:

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Appendix B-11

Acculturative Stress

Please see the reference below for the questionnaire:

Mena, F. J., Padilla, A. M., & Maldonado, J. (1987). Acculturative stress and specific coping strategies among immigrants and later generation college students. Hispanic Journal of Behavioural Sciences, 9, 207-225.

Appendix B-12

Ego Identity Status

Please see the reference below for the questionnaire:

Adam, G. R., Bennion, L., & Huh, K. (1989). Objective Measure of Ego Identity Status: A Reference Manual. Unpublished manuscript. Department of Family Studies, University of Guelph, Guelph, Ontario, Canada.

CURRICULUM VITAE

Surname: Chia Given Names: Ai-Lan

Place of Birth: Taipei, Taiwan, Republic of China.

Educational Institutions Attended and Degrees Awarded:

University of Victoria 1999 to 2002
Master of Science (Counselling and Counsellor Education), Indiana University
Indiana, United States 1992 to 1994
Bachelor of Arts, (English), National Central University, Taiwan 1988 to 1992

Honours and Awards:

Best Student Poster/Paper Presentation Award, Section on International and
Cross- Cultural Psychology, Canadian Psychological Association 2002
Outstanding Scholar Fellowships, Ministry of Education, Taiwan 1999
Excellent Lecturer, Dahan Institute of Technology, Taiwan 1996

Publications & Presentations:

Chia, A. L., & Costigan, C. L. (2002, May). Multidimensional and orthogonal approaches to ethnic identity and acculturation. Poster presented at the Canadian Psychological Association Annual Convention, Vancouver, British Columbia, Canada

Chia, A.-L., & Costigan, C. L. (2002, July). Cultural identity and well-being of Chinese immigrants in Canada. Paper presented at the XIV International Association of Cross-Cultural Psychology 2002 Congress, Yogyakarta, Indonesia.

Chia, A.-L., & Costigan, C. L. (2002, August). Person-centred approach: Understanding ethnic identity and acculturation among Chinese Canadians. Poster presented at the 17th Biennial Meeting of the International Society for the Study of Behavioural Development, Ottawa, Ontario, Canada.

Chia, A.-L. (2000, March). Ethnic identity and acculturation. Paper presented at the Graduate Student Symposium on Asia-Pacific, University of Victoria, Canada

Costigan, C. L., Chia, A., & Dokis, D. (2002, August). Acculturation, parenting, and adjustment in immigrant Chinese families. Poster presented at the 17th Biennial Meeting of the International Society for the Study of Behavioural Development, Ottawa, Ontario, Canada.

Costigan, C. L., Chia, A. Dokis, D., & Tan, J. (2002, August). Cultural values, parenting,and adolescent adjustment in immigrant Chinese families. Poster presented at the 2002 meeting of the American Psychological Association, Chicago, Illinois, USA.

Dokis, D., Costigan, C. L., & Chia, A.-L. (2002, June). Parent-Adolescent Conflict in Immigrant Chinese Families. Poster presented at the Canadian Psychological Association Annual Convention, Vancouver, British Columbia, Canada.

Ishiyama, I., Chia, A.-L., & Wong, Y.-S. (1999, March). Counselling Chinese clients in Canada. Paper presented at the annual National Conference of the Canadian Guidance and Counselling Association, Calgary, Alberta, Canada.

Chia, A.-L.(1996). Domestic violence and its interaction with the context of divorce process, Journal of Dahan Institute of Technology, 10, 327-362.

Byham, W. C., & Cox, J. (1996). HeroZ: Empower yourself, your co-worker, your company. (A.-L. Chia, Chinese Trans.). Taiwan, R. O. C.: Zhi-Ku Publishing Company (Original work published 1994).

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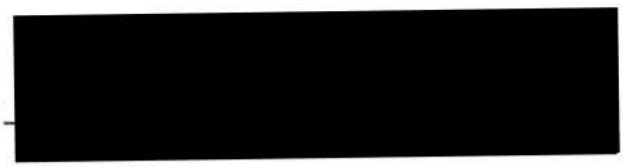
Ethnic Identity and Acculturation among Chinese Canadians

Author 

Ai-Lan Chia

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