

ACCULTURATION AND ACHIEVEMENT IN ENGLISH AMONG CHINESE  
IMMIGRANT ADOLESCENTS: A COMPARISON OF TWO  
POPULATIONS WHICH VARY IN THE DENSITY  
OF SPEAKERS OF CHINESE

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May 11, 2006  
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DISSERTATION ABSTRACT

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The present study was conducted for the purposes of addressing how differential L1-speaking population density affects the acculturation status of two cohorts of ethnic Chinese adolescent respondents with ages at testing ranging from 12 to 22 in two metropolitan cities of North America: Vancouver, Canada, and Atlanta, Georgia; and how differential acculturation status among ethnic Chinese adolescents predicts differential development of English proficiency of these ethnic Chinese adolescent respondents when demographic factors such as age of arrival and length of stay are taken into consideration.

Based on empirical data collected from 133 ethnic Chinese adolescent respondents in the two cities, several conclusions are reached: (1) ethnic Chinese population density affects the acculturation levels of ethnic Chinese adolescent respondents in terms of psychological and sociolinguistic orientations towards the L2 community; (2) ethnic Chinese population density may not directly affect the L2 proficiency of ethnic Chinese adolescent respondents while differential levels of psychological and sociolinguistic orientations may; (3) ethnic Chinese population density may play an indirect role in affecting the organizational structure of L2 mental lexicon of ethnic Chinese adolescent respondents because it can affect the degree to which L1 is used among ethnic Chinese adolescent respondents; (4) in terms of the two dimensions of acculturation, sociolinguistic orientation is more powerful in predicting the development of L2 proficiency than psychological orientation; and (5) when acculturation is involved in the development of L2 proficiency, the combined effect of age of arrival and length of stay may not significantly affect L2 proficiency either for all the respondents of the present study or for respondents in the low-density group; that is, both the combined effect of age of arrival and length of stay and acculturation will affect L2 proficiency in ethnic Chinese adolescent respondents of the high population density, while in terms of ethnic Chinese adolescent respondents of the low population density, the combined effect of age of arrival and length of stay may not affect L2 proficiency though the acculturation factor may.

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## CHAPTER ONE: INTRODUCTION

### Research Background

The field of Second Language Acquisition (SLA) has included studies of acculturation, the social and psychological integration of second language (L2) speakers into the target language community, and their relationship to the development of L2 proficiency from immigrant populations (Schumann, 1986). These studies were first conducted by SLA researchers in the 1970s and 1980s (Schumann, 1975, 1976, 1978a, 1978b, 1978c, 1986; Stauble, 1978, 1980). In recent years, interest in the effect of acculturation on the L2 proficiency of immigrants is on the rise due to concerns pertaining to the variables that contribute to successful language learning among individual learners within the population of immigrant bilinguals, especially in societies that advocate multiculturalism (Norton, 1998, 2000; Norton & Toohey, 2002; Olsen, 1998). Nevertheless, in the field of SLA, researchers employ qualitative research methods such as case studies and ethnographic studies to investigate how acculturation relates to the development of L2, and almost all the subjects in these studies have been adult L2 learners who are acquiring L2 in naturalistic environments.

Acculturation as a concept and as a phenomenon became an important construct for studies in cross-cultural psychology early in the 20<sup>th</sup> century when anthropologists and sociologists began to recognize the significance and the importance of cultural contact between different ethnic groups (Trimble, 2003). From the perspective of cross-

cultural psychology, acculturation is a term that has been defined as culture change resulting from continuous, first-hand contact between two distinct cultural groups (Redfield, Linton, & Herskovits, 1936). In the field of cross-cultural psychology, the rapid growth of immigrant populations in both United States and Canada in the past 30 years has been accompanied by systematic research interests in issues of how acculturation functions in relation to immigrants' psychological well-being and adjustment (Florsheim, 1996; Shen & Takeuchi, 2001; Ying, 1995), social adjustment (Huang, Leong, & Wagner, 1994; Knight, Bernal, Garza, Cota, & Ocampo, 1993; Wang, 1999), cultural adjustment (Nguyen & Stollak, 1999), and ethnic identity (Knight, Bernal, Garza, Cota, & Ocampo, 1993; Phinney, 1990).

One of the major goals of acculturation studies in cross-cultural psychology is to seek explanations for the direct or indirect impact of acculturation on the social, cultural, and psychological behaviors of an immigrant population in a new culture. However, researchers in this field have paid little attention to the relationship between the acculturation and the language proficiency of L2 speakers since seeking to clarify this type of relationship is not their major concern.

As more and more immigrants arrived in the United States and Canada each year, changes in ethnic population composition in some metropolitan cities in North America became significant and have been documented officially (Statistics Canada, 2002; US Census Bureau, 2003). On the other hand, relatively little research has been conducted to reveal how ethnic population density affects acculturation levels of immigrants, and no documented empirical research has ever touched upon the topic of whether differential

ethnic population density would result in differential levels of acculturation status and /or differential language proficiency.

Although first language (L1)-speaking population density has never been a formal topic in the literatures of either cross-cultural psychology or SLA, studies involving neighborhood ethnic composition (Kaplan & Marks, 1990; Ying, 1995) and the L1-speaking student population in the schools (Olsen, 1997) indicate that large L1-speaking populations in the academic and social environments of L2 speakers seem to exert adverse effects on the use of the second language (Olsen, 1997; Valdés, 1998).

#### Statement of the Problem

The past 30 years have witnessed tremendous increases in the Chinese population of both the United States and Canada (Yu & Berryman, 1996). At present, around 2.8 million Chinese Americans live in the United States (Wenhui, 2005), representing 22.6% of the Asian American population of 12.5 million (US Census Bureau, 2003) as well as almost 1% of the total US population of 296 million (US Census Bureau, 2005), and 63% of those ethnic Chinese Americans were foreign-born (Yu & Berryman, 1996). Among this foreign-born Chinese population, it has been estimated that about 15% are teenagers or young adults whose ages ranged from 12 to 19 years of age (U.S. Census Bureau, 2003) as of three years ago.

At present, out of the total Canadian population of 29,558,250, there are 1,029,400 Chinese (Statistics Canada, 2002). It is the third largest ethnic population besides Anglophones and Francophones, accounting for 3.5% of the whole Canadian population and representing 26% of the visible minority population (Statistics Canada, 2002). The Chinese immigrant population in Canada is also characterized by a large



number of young people, with more than 34% of this population being under the age of 24 in the year 2000 (Kuo & Roysircar, 2004). From these statistics, it appears that the density of ethnic Chinese adolescents in Canada will prove to be considerably larger than the density of this same population in the United States.

According to Statistics Canada (2005), the Census for Metropolitan Vancouver indicated a total population for the city in 2001 to be 1,967,480. Of these there were 347,985 self-described ethnic Chinese. That is, 33.8% of ethnic Chinese-Canadians live in Vancouver, representing 17.7% of the total population of Vancouver, among which, 83.6% of them speak Chinese at home. This dense population of ethnic Chinese people, the large majority of whom are speakers of Mandarin Chinese, creates a demand for both written and oral information in their native language. For example, in the city of Vancouver, there are six Chinese bookstores and around 15 video rental stores, where Chinese residents can purchase and rent Chinese books, magazines, videotapes, audio and video CDs, and DVDs. In addition, one can purchase three Chinese daily newspapers, *World Journal*, *Ming Pao Daily*, and *Tsingtao Daily*; all of these are available to Chinese residents in the aforementioned bookstores and video stores as well as in approximately 20 grocery stores and supermarkets run by ethnic Chinese-Canadians (World Journal, 2003). There is one Chinese radio station, *Chinese 763*, which broadcasts Chinese programs 10 hours per day, and there are two Chinese TV Channels, which broadcast Chinese TV programs 18 hours per day (World Journal, 2003). In addition, Chinese residents in Vancouver have the opportunity to purchase satellite TV equipment that allows them to watch around 30 Chinese TV channels provided by TV stations in mainland China, Taiwan, and Hong Kong through satellites.

Based on data from British Columbia Ministry of Education of (2005), 671,234 students were enrolled in BC public and independent schools during the school year of 2004-2005. Among these students, 6.8% have Chinese as the primary language spoken at home. In the public schools of the city of Vancouver where the author recruited participants for the current study, out of a total enrollment of 61,424 for the school year of 2004-2005, about 30.3% of the PK-12 student population had Mandarin Chinese as the primary language of the home (British Columbia Ministry of Education, 2005), even though some of them may speak some English with members of their families. In one public school in Vancouver, more than 50% of the students in some classes are of ethnic Chinese background, and some Chinese students even interact in Chinese with other Chinese students both inside and outside the classroom (primary source: a participant recruited in Vancouver).

On the other hand, out of the 4.1 million people in the Metro Atlanta area (Wikipedia, 2005), there are only approximately 25,000 Chinese-Americans (Lee, 2005; Atlanta Regional Commission, 2004), and most of them live in the northern Metro Atlanta areas, primarily in Chamblee and Doraville (Atlanta Regional Commission, 2004). In these areas, there is only one Chinese bookstore, and there are very few video rental stores where ethnic Chinese residents can buy and rent Chinese books, magazines, video tapes, audio/video CDs, and DVDs (Lee, 2005). There is one Chinese daily newspaper, *World Journal*, which Chinese residents are able to purchase at the bookstore, at a few video rental stores, and at some supermarkets run by Chinese Americans (Lee, 2005). However, Chinese residents in Atlanta, as anywhere in North America, can

purchase satellite TV equipment and watch the same Chinese TV channels as Chinese residents in Vancouver watch.

During the school year of 2004-2005, the public schools of Georgia enrolled 40,923 Asian American students, totaling about 3% of the whole student population of 1,544,044 in Georgia (Georgia Department of Education, 2005). In 1990 according to the US Census, about 22.6% of Asian Americans were of Chinese origin. Based on these statistics we can estimate that around 20% of Asian American students in Georgia public schools are ethnic Chinese. According to the Georgia Department of Education (2005), in the counties of Fulton and Gwinnett in Metro Atlanta where the ethnic Chinese adolescents were recruited for the current research, there are 5,412 and 13,472 Asian American PK-12 students out of a total enrolment of 76,111 and 135,822 respectively; so approximately 1,223 and 3,045 students respectively were of ethnic Chinese background during the school year of 2004-2005 in Fulton County and Gwinnett County Public schools.

Results of acculturation studies both in SLA and in cross-cultural psychology have indicated that the physical and social environments that surround an immigrant population, such as the ethnic composition of friends with whom the L2 speakers interact and the ethnic composition of neighborhoods in which the family of L2 speakers are located, constitute important factors that affect how the immigrant population identifies themselves in relation to the members of the new culture and the members of the original culture (Zhou, Peeverly, Xin, Huang, & Wang, 2003; Tsai, Ying, & Lee, 2000) and determines to what degree they adapt themselves to the values, norms, and customs of the new culture (Rosenthal & Feldman, 1992; Schnittker, 2002).

In addition, studies involving the L1-speaking student population in the schools indicate that large L1-speaking populations in the academic and social environments of L2 speakers seem to exert adverse effects on the use of the second language (Olsen, 1997; Valdés, 1998).

#### Statement of Purpose

As studies in the field of SLA become more interdisciplinary in nature (Gass & Selinker, 2001), incorporating variables in acculturation studies from both the field of SLA and the field of cross-cultural psychology into one scholarly research topic will definitely enrich the content knowledge of acculturation studies. For this purpose, the present research intends to focus its research attention on whether differential population density of ethnic Chinese is associated with different levels of acculturation of ethnic Chinese immigrant adolescents, whether differential ethnic Chinese population density predicts differential levels of L2 proficiency in ethnic Chinese immigrant adolescents, and how acculturation affects L2 proficiency when the variables of age of arrival and length of stay of those ethnic Chinese adolescents are taken into consideration.

#### Significance of the Study

Despite the size and significance of the ethnic Chinese community in North America, few qualitative studies on acculturation in the SLA field have devoted their attention to ethnic Chinese populations. Most of the research in SLA that does involve ethnic Chinese populations is limited to adult Chinese immigrant populations (e.g. Norton, 2000).

This proposed research would contribute to the fields of SLA and cross-cultural psychology by incorporating the important variable of L1-speaking population density

into acculturation studies on how this variable would affect the acculturation status of immigrants in relation to the development of English language proficiency using quantitative research methods with regard to ethnic Chinese adolescents living in two cities with distinct densities of ethnic Chinese population in the United States and Canada.

On the other hand, studies on language proficiency and acculturation involving foreign-born and native-born Chinese adolescents in SLA are almost non-existent. By including both foreign-born and native-born ethnic Chinese adolescents in one study, this research helps illuminate key issues in terms of how acculturation can function in the development of language proficiency in ethnic Chinese adolescents, especially in those immigrant adolescents who are confronted with stressful and painful experiences not only in adapting to the new culture but also in their academic pursuits in school settings (Lay & Verkuyten, 1999; Zhou, Peeverly, Xin, Huang, & Wang, 2003).

In addition, this proposed study would shed light on a new direction in acculturation studies by dividing the factor of acculturation into two distinct dimensions: the dimension of identifying oneself with the norms, values, beliefs, customs, and so on of the dominant culture and the dimension of using L2 for socio-linguistic purposes.

Finally, in acculturation studies both in the field of SLA and in the field of cross-cultural psychology, demographic variables such as age of arrival and length of stay are usually dealt with separately or paid little attention to. This proposed study would provide important results on how the demographic variables of age of arrival and length of stay would influence the development of L2 proficiency when the factor of acculturation is involved.

## CHAPTER TWO: LITERATURE REVIEW

### Introduction

According to Berry's (2003) General Acculturation Framework, the acculturation process consists of two levels: the group/cultural level and the individual/psychological level, with a linkage being established between the two levels. This linkage implies a dynamic acculturation process in which cultural adaptation of the two groups requires that individual members of each group interact with each other through specific social and cultural behaviors, which in turn results in the cultural interaction at the group level (Szapocznik, Kurtines, & Fernandez, 1980; Cuéllar, Harris, & Jasso, 1980). Consequently, acculturation at the group or cultural level cannot be accomplished until members of the two groups are acculturated at the individual level (Berry, 2003).

On the other hand, acculturation at the individual/psychological level in Berry's (2003) General Acculturation Framework suggests that acculturation at the individual level involves psychological changes in the participants within a culture-contact situation. Therefore, while the general change may be profound at the group level, not all individuals participate to the same extent in the acculturation process due to different psychological factors experienced by each individual in the new culture (Berry, 1970, 2003; Furnham & Bochner, 1986). This type of acculturation is also referred to as psychological acculturation (Graves, 1967), and involves "changes in psychological orientations that develop through involvement and interaction within new cultural

systems” (Tropp, Erkut, Coll, Alarcón, & García, 1999. p. 351-352). This definition of psychological acculturation implies that not every individual of the non-dominant group enters into, participates in, or changes in the same way in the acculturation process; thus causing drastic individual differences at the individual/ psychological level, although the acculturative environment may be exactly the same at the social/group level (Berry, 2003). It must be pointed out that although changes to both cultural groups resulting from acculturation are implied in Berry’s (2003) framework, in fact the greatest amount of change occurs in the non-dominant group as a result of the influence from the dominant or the mainstream group (Berry, 1997; Schumann, 1978a, 1986).

The role of the individual in the acculturation process has become important in the study and understanding of acculturative change as a whole since contacts between the two cultures can only be completed through individual experiences (Padilla, 1980). At the individual/psychological level, Berry (2003) argues that psychological acculturation of the individual or how individuals see themselves as “being” in the new culture (Ryder, Alden, & Pauhus, 2000, p. 49) is the most important factor no matter whether acculturation at the individual level is defined as unidimensional or bidimensional.

Unidimensional models of acculturation posited that an individual’s assimilation into the new culture is necessarily accompanied by the relinquishment of one’s self-identity with the original culture (Gordon, 1964). In contrast, more recent research lends more support to acculturation models with a bidimensional perspective which suggests that individuals may differ in the extent to which they identify themselves with either the new culture or the original one. In a bidimensional model, acculturation is regarded as a process in which an individual’s self-identity with the new culture and the old one may

vary independently (Berry, 1980; Laroche, Kim, Hui, & Joy, 1996). In other words, ethnic groups or individuals are capable of preserving certain degrees of their heritage culture while adapting to the mainstream culture (Laroche, Kim, Hui, & Tomiuk, 1998).

In recent years, the bidimensional concept of acculturation that envisions the process of acculturation in the host culture as encompassing both acquisition of new cultural traits and maintenance of original culture traits has been widely accepted (Abe-Kim, Okazaki, & Goto, 2001; Laroche, Kim, & Hui, 1997; Laroche, Kim, Hui, & Tomiuk, 1998; Ryder, Alden, & Paulhus, 2000; Tsai, Ying, & Lee, 2000). Such a view of acculturation is compatible with the basic tenet underlying multiculturalism (Laroche, Kim, Hui, & Tomiuk, 1998), which holds that a variety of cultures can coexist in the same geographical region and maintain their unique ethnic trends while functioning harmoniously with other cultures within the mainstream society (Hraba, 1979). This multicultural view of acculturation is also evident in the theoretical and empirical formulations of the acculturation model proposed by Mendoza (1989), who argues that the dynamic process of acculturation involves interaction of at least two cultures and that individuals within the new culture may end up with similar degrees of acculturation while still preserving dissimilar traces of native cultural traits. For these acculturation researchers, acculturation not only refers to the degree of identification with the cultural values of the mainstream society, it also refers to the degree of retention of native cultural norms; that is, acculturation into the new culture does not necessarily mean the abandonment of one's ethnic identity (Phinney, 1990).



## Acculturation Studies in Second Language Acquisition

Larsen & Smalley (1972) believe that in order to become proficient in a second language, L2 speakers or learners must become integral members of the L2 community by overcoming cultural barriers and by acculturating to the new culture. This is because a high degree of L2 proficiency will not occur until constant contact with the L2 community members and familiarity with beliefs, morals, and other behavioral patterns of the L2 community are achieved (Stauble, 1980).

In the framework of SLA, Schumann (1978a) defines acculturation as the social and psychological integration of L2 speakers with the target language community. Based on this definition, Schumann (1978a, 1986) proposed an acculturation model, which states that the degree of acculturation, which consists of social and psychological dimensions, determines the degree of L2 proficiency.

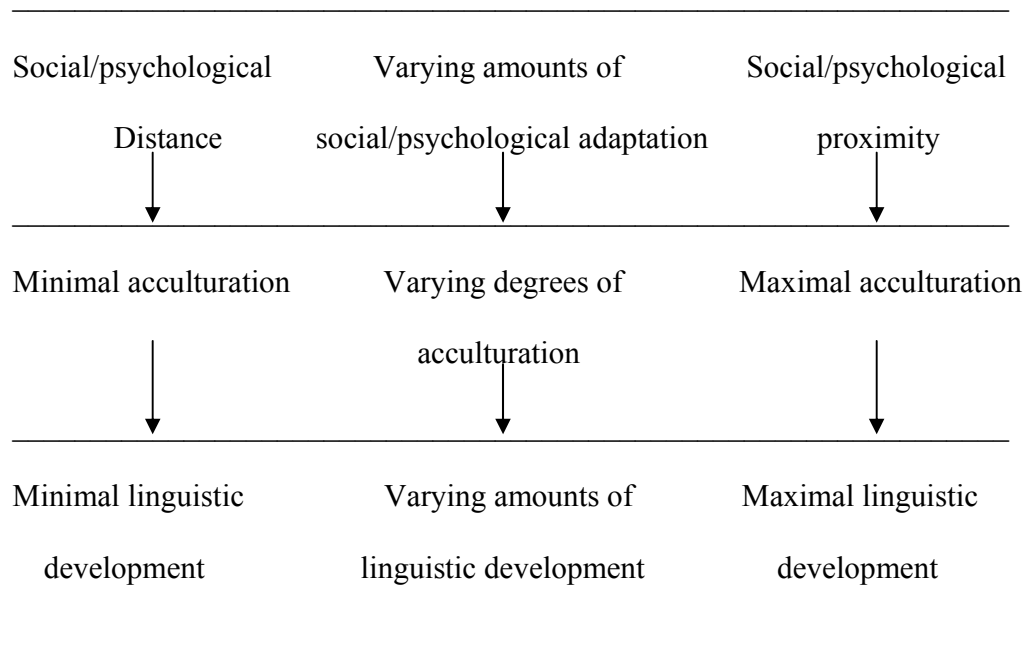
According to Schumann's (1978a, 1986) acculturation model, the social dimension of acculturation consists of various subcomponents related to different aspects of the immigrant environment: (1) the hierarchies into which L2 speakers are placed within the dominant L2 community in terms of their political, cultural, technical, or economic positions, (2) the closeness of the contact between L2 speakers and members of the L2 community, (3) the size of the population of their own ethnic community, and (4) their length of stay in the L2 community.

The psychological dimension in Schumann's (1978a, 1986) acculturation model includes how L2 speakers overcome cultural barriers in adapting to the new culture, how they overcome language learning difficulties during their L2 learning process, and what elements motivate them to learn the target language under adverse conditions.

Schumann (1986) assumes that although acculturation correlates directly with L2 proficiency, in actual practice, acculturation may play a more complex and indirect role in bringing about L2 acquisition. This is because perhaps acculturation promotes favorable attitudes toward the L2 and the L2 community, which in turn promotes more direct contacts between L2 speakers and the L2 community. This increased contact may then operate as a variable that increases the likelihood that L2 proficiency will be attained.

In the field of SLA, Stauble (1980) proposed a similar but more complex acculturation model. The rationale for this model is that the amount of social and psychological experience that L2 speakers have with the host culture determines the degree of acculturation identified by the L2 speakers, which ultimately determines the degree of language proficiency of these L2 speakers. In other words, if the L2 speakers keep themselves distant from the L2 community both socially and psychologically, they will obtain the minimal degree of acculturation; and this minimal degree of acculturation will result in a minimal degree of L2 proficiency on the part of L2 speakers. On the other hand, if L2 speakers engage in a maximal amount of social contact with the L2 community and if they regard themselves as an integral part of the L2 community, they will obtain a maximal degree of acculturation into the L2 community. When this happens, L2 speakers will not only achieve a complete mastery of the target language, they will also adopt the beliefs, attitudes, values, and other behavioral patterns of the target language community (Stauble, 1980). Stauble's Acculturation Continuum Model is shown in Figure 1.

Figure 1. Stauble’s (1980) Acculturation Continuum Model



Before Stauble (1980) introduced the model above, Schumann (1978c) provided evidence to support a direct relationship between social/psychological factors and language proficiency in his acculturation model by conducting a qualitative study of the linguistic development of six L2 learners living in the United States—two children, two adolescents, and two adults. During his observation, Schumann (1978c) found that one of the two adult subjects, a 33-year-old Costa Rican named Alberto, showed very little linguistic development during the course of the nine-month longitudinal observation. Schumann compared Alberto’s social interactions with and affective affiliations to the English-speaking community with that of the other four subjects in the study, and discovered that Alberto made little effort to get to know English-speaking people but expended a great deal of time with small groups of Spanish-speaking friends. In addition, he refused to watch English TV programs but instead purchased an expensive stereo set

and played mostly Spanish music. Furthermore, he chose to work both in the daytime and at night, rather than to go to free English classes available to immigrants such as himself. Based on his observations, Schumann concluded that social and psychological distance between Alberto and the English-speaking community kept him from acquiring the level of English necessary for him to succeed in the United States. In other words, Alberto's minimal degree of English proficiency was the direct result of his minimal degree of acculturation to the English-speaking community.

At about the same time, Stauble (1978) also conducted a qualitative study on how social and psychological factors affected final acculturation status and how acculturation affected the learning of negation in English syntactic structures. In this study, three adult Spanish-speaking L2 learners who worked in the United States and learned English in natural circumstances were recruited. Stauble interviewed and administered a twelve-item questionnaire to the three L2 learners which required them to indicate whether they felt comfortable within American society, how motivated they felt to acculturate into the host culture, how motivated they were to learn English, what was the dominant ethnic group of the neighborhood where they lived, and whether they spoke English at home or in the workplace, etc. The results of this study indicated that psychological factors such as motivational orientation played a decisive role in determining how acculturated these L2 learners felt within American society as well as the degree to which these L2 learners mastered the use of negation in English.

Based on these results, Stauble (1978) concluded that social contact with the target language community is an important component of the acculturation process which promotes the learning of the target language, and that mastery of the target language

cannot take place without the adoption of the beliefs, morals, and other behavioral patterns of the L2 community.

#### Dimensions of Acculturation in Acculturation Studies

The construct of acculturation certainly includes more than one component and may be multi-dimensional in nature (Cuéllar, Harris, & Jasso, 1980), involving aspects from cultural preferences to ethnic identity (Suinn, Rikard-Figueroa, Lew, & Vigil, 1987) or even to food preference (Anderson, Moeschberger, Chen Jr., Kun, Wewers, M, & Guthrie, 1993). Many cross-cultural studies in acculturation have explored the various and different dimensions of acculturation as their major goal (Burnam, Telles, Karno, Hough, & Escobar, 1987; Cuéllar, Harris, & Jasso, 1980; Cuéllar, Arnold, & Maldonado, 1995; Laroche, Kim, Hui, & Tomiuk, 1998; Marín & Gamba, 1996; Mendoza, 1989; Szapocznik, Scopetta, Kurtines, & Aranalde, 1978). For example, in their study of normal and clinical Mexican populations in the United States, Cuéllar, Harris, and Jasso (1980) found that the construct of acculturation is composed of four factors: (1) language familiarity, usage, and preference; (2) ethnic identity and generation; (3) general cultural heritage and exposure; and (4) ethnic interaction. In another study of acculturation on a sizable sample of Asian-American participants, Suinn, Khoo, and Ahuna (1995) concluded that acculturation consists of five dimensions: (1) reading/writing /cultural preference; (2) ethnic interaction; (3) generational identity; (4) affinity for ethnic identity and pride; and (5) food preference.

For the present study, acculturation is regarded as one factor that consists of two dimensions: (1) sociolinguistic orientation, which, according to Szapocznik, Kurtines, and Fernandez (1980), refers to social behaviors related to the use of L2 for

informational, recreational, and communication purposes; and (2) psychological orientation, which is defined as psychological changes that result in strong identification with the prevailing norms, values, standards, and behaviors of the new cultural systems (Tropp, Erkut, Coll, Alarcón, & García, 1999). These two orientations were included as the two dimensions of acculturation for the present study because most research on acculturation studies both in the field of cross-cultural psychology and in the field of SLA treated these two orientations as important dimensions of acculturation (Chung, Kim, & Abreu, 2004; Cuéllar, Harris, & Jasso, 1980; Cuéllar, Arnold, & Maldonado, 1995; Schumann, 1978a, 1978b, 1978c, 1986; Tsai, Ying, & Lee, 2000; Yeh, 2003).

#### Measurement of Sociolinguistic and Psychological Orientations

Although some acculturation researchers in cross-cultural psychology have included items that examine both psychological orientation and sociolinguistic orientation in their studies (Chung, Kim, & Abreu, 2004; Cuéllar, Harris, & Jasso, 1980; Cuéllar, Arnold, & Maldonado, 1995; Marín & Gamba, 1996; Stephenson, 2000), these items are usually mixed together with additional constructs that are used to tap other dimensions of acculturation that are only relevant to cross-cultural studies. For example, the most commonly used acculturation scale for Asian Americans in cross-cultural studies, the *Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA)* (Suinn, Ahuna, & Khoo, 1992; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987), not only covers dimensions such as language use and ethnic identity, it also includes areas such as generation/demographic history, which is not regarded as a component of acculturation from the perspective of SLA. In addition, some published acculturation scales (Cuéllar,

Harris, & Jasso, 1980; Tsai, Ying, & Lee, 2000) include items that focus on constructs which have no direct relationship with the SLA research focus in this study. For example, *The Asian American Multidimensional Acculturation Scale* (Chung, Kim, & Abreu, 2004), taps into several acculturation domains such as cultural identity and language use, both of which are pertinent to this study, but it also includes items concerning food preferences. No single published acculturation scale addresses the specific research questions investigated in this study which treats acculturation as one construct that includes items tapping only psychological and sociolinguistic orientations. Therefore, the author of the present study decided to find an acculturation scale that taps only the psychological orientations of respondents, while self-designing a separate scale that only taps the sociolinguistic orientation of the respondents.

#### *Psychological Orientation Scale*

After searching relevant literature in cross-cultural psychology, the author decided to adapt the *Psychological Acculturation Scale* (PAS) (Tropp, Erkut, Coll, Alarcón & García, 1999) as the measure of psychological orientations. The PAS was originally a nine-point, likert-type, bidimensional acculturation scale developed by Tropp, Erkut, Coll, Alarcón, and García (1999) for the purpose of testing the acculturation status of Spanish-speaking Puerto Ricans who lived in the U.S. mainland. It consists of 10 question items tapping individuals' psychological responses to differing social cultural contexts and values.

For example, for the purpose of tapping participants' responses to the differing degrees to which they identify themselves with the two cultures and values (host and home), this researcher quoted questions such as "With which group(s) of people do you

feel you share most of your beliefs and values?” and “Which culture(s) do you know the most about the history, traditions, and customs, and so forth?” (p. 355). For the purpose of examining how differently the participants feel and react in the two social and cultural contexts, participants responded to questions such as “With which groups of people do you feel the most comfortable?” and “In which cultures (s) do you know how things are done and feel that you can do them easily?” (p. 355). Responses to these questions required participants to provide an answer by choosing a number ranging from 1 “only Hispanic/Latino” to 9 “only Anglo/American” (p. 355-356). For example, those participants who were more identified with the American culture and regarded themselves as more of a member of the American society might choose 8 or 9 for the above four questions, while those participants who regarded themselves as more a member of their own ethnic culture and society might select 1 or 2 as their response to the above four questions. As a result, low scores reflect high Puerto Rican ethnic identification and low acculturation to American culture or society, and high scores indicate low Puerto Rican ethnic identification and high acculturation to American culture or society; scores in the middle (e.g. 4) could be regarded as reflecting biculturalism (Tropp, et al., 1999).

A principal components analysis conducted by Tropp, et al. (1999) in their study yielded a single primary factor, psychological acculturation, which accounted for 51% of the variance with no extra significant factors extracted. In addition, the PAS boasts satisfactory reliability and validity. The internal reliability coefficient for the PAS was .85, representing an acceptable level of stability for this instrument. The convergent and discriminant validity for two studies conducted by Tropp, et al. (1999) ranged from .61 to



.84. This is quite acceptable in terms of acculturation studies compared to the validity coefficients of other acculturation scales (Chung, Kim & Abreu, 2004; Liu, Pope-Davis, Nevitt, & Toporek, 1999; Park & Harrison, 1995; Suinn, Rikard-Figueroa, Lew, & Virgil, 1987; Tsai, Ying, & Lee, 2000).

#### *Sociolinguistic Orientation Scale*

Since how frequently L2 is used and preferred for informational, recreational, and communicational purposes (i.e., talking with one's friends, watching TV programs, listening to radio programs, reading newspapers, and enjoying music) is an important indicator of the extent to which an L2 speaker is acculturated to the host culture (Cuéllar, Harris, & Jasso, 1980; Schumann, 1978c), most acculturation scales include items on both media and language use (Cuéllar, Arnold, & Maldonado, 1995; Félix-Ortiz, Newcomb, & Myers, 1994; Marín & Gamba, 1996; Stephenson, 2000). For example, in the *Bidimensional Acculturation Scale for Hispanics* (BAS) (Marín & Gamba, 1996), there are three items for language use and three items for electronic media use that tap the frequency and purpose of English usage for communication. To address the construct of L2 language use only, the present study utilized a 10-item scale called *Sociolinguistic Scale on L2 Use* created specifically for this study. Some of the items in this scale were based on and adapted from the BAS (Marín & Gamba, 1996) and the *General Ethnicity Questionnaire-American Version* (GEQAV) (Abridged) (Tsai, Ying, & Lee, 2000), while other items in the scale were designed by this researcher due to the latest developments in information technology, such as the item on frequency of L2 or L1 use of the Internet by participants.

## Measurement of Language Proficiency

How to define language proficiency has long been debated in the field of SLA (Ellis, 1994). SLA researchers working from different perspectives provide different definitions for the construct of language proficiency. Generally, language proficiency is defined as the relative ability to listen, to speak, to read, and to write based on one's knowledge of language components: vocabulary, phonology, and grammar rules (Larsen-Freeman & Long, 1992).

Instruments to measure language proficiency often include items for assessing performance in the four language skills: speaking, listening, reading, and writing. Since no consensus has ever been reached as to what language proficiency instruments are the best for empirical studies (Larsen-Freeman & Long, 1992) and due to financial limitations imposed on the present study, three types of language proficiency instruments were used: (1) Self-Rated L2 Proficiency Scale, (2) Grammaticality Judgment Test, and (3) Semantic-Relatedness Judgment Test.

### *Self-Rated Language Proficiency Scale*

Self-rated or self-reported language proficiency has been used frequently in acculturation studies and has been established as a valid tool for assessing language proficiency (Anderson, Moeschberger, Chen Jr., Kunn, Wewers, & Guthrie, 1993; Chung, Kim, & Abreu, 2004; Marín & Gamba, 1996; Stephenson, 2000; Tsai, Ying, & Lee, 2000). For example, with the use of a self-rated English/Chinese language proficiency scale (e.g., “How fluently do you speak English?” and “How fluently do you write Chinese?” etc.), Tsai, Ying, & Lee (2000) succeeded in significantly distinguishing three groups of Chinese Americans: American-born Chinese, foreign-born Chinese who

arrived in the U.S. at or before 12 years of age, and foreign-born Chinese who arrived in the U.S. after 12 years of age. American-born Chinese in this study reported higher proficiency in English but lower proficiency in Chinese than foreign-born Chinese who arrived in the U.S. by 12 years of age or younger; in turn, these Chinese Americans reported higher English proficiency but lower Chinese proficiency than foreign-born Chinese who arrived in the U.S. at age of 12 years or older.

In another study Kuo and Roysircar (2004) required participants to self-report how well they understood the English questionnaire administered to them by choosing among six incremental options ranging from “I understand 50% or less” (score 1) to “I understand completely” (score 6) as an assessment of the participants’ English reading ability. The results indicated that for the whole sample, the correlation coefficients are  $r = -.42$ ,  $p < .01$  for age and self-reported English reading ability, and  $r = .42$ ,  $p < .01$  for length of stay and self-reported English reading ability.

In SLA studies that involve the relationships between language proficiency and social and psychological factors, this type of self-rated/reported language proficiency instrument is also common. For example, in their studies of the relationships between language proficiency and aptitude, attitudes, motivation, self-confidence, language-learning strategies etc., Gardner, Tremblay, and Masgoret (1997) used self-reported language proficiency as a subset of these language proficiency instruments. Their findings indicated that the internal reliabilities for their subjects’ self-rated proficiency scores in the domains of reading ( $\alpha = .89$ , 7 items), writing ( $\alpha = .77$ , 6 items), speaking ( $\alpha = .93$ , 15 items), and understanding ( $\alpha = .93$ , 8 items) were high and significantly

correlated with their standardized language achievement scores ( $r = .64, p < .001$ ) and their final grades for language courses ( $r = .33, p < .001$ ).

These findings and additional results from research conducted by Bahrlick, Hall, Goggin, Bahrlick, and Berger (1994) suggest that self-rated language proficiency as an index of actual L2 proficiency was deemed valid and reliable regardless of whether the self-rated proficiency was based on reading, writing, speaking, or understanding as long as the self-rated language proficiency results were significantly correlated with other scales in the same study that tap constructs theoretically posited to be and empirically proven to be correlated with the construct of language proficiency..

#### *Grammaticality Judgment Test*

Many research papers dealing with language proficiency in SLA use the grammaticality judgment test as a means to measure the proficiency levels of L2 speakers. For example, the grammaticality judgment test first developed by Linebarger, Schwartz, and Saffran (1983) for aphasics was used as a model by Johnson and Newport (1989). The two researchers constructed a grammaticality judgment test which consisted of both grammatical and ungrammatical sentences to test 12 types of grammatical rules in English such as past tense, word order, and third person singular for a group of Chinese and Korean L2 speakers whose age of arrival in the United States ranged from 3 to 39 years. Johnson and Newport (1989) used this grammaticality judgment test to explore whether there was the putative Critical Period (Lenneberg, 1967) for the ultimate attainment of grammar in L2 learners who began to learn L2 at different ages. The results of their study revealed that the grammaticality judgment test was an effective language

proficiency test in differentiating the grammatical proficiency of L2 speakers who arrived in the United States before the age of 17.

Many other studies concerning the relationship between age and L2 proficiency have also utilized grammaticality judgment tests to measure L2 proficiency of adolescent and/or adult L2 subjects (Birdsong, 1992; Birdsong & Mollis, 2001; DeKeyser, 2000; Flege, Yini-Komshian, & Liu, 1999; Garcia Mayo, 2003; Jia, Aaronson, & Wu, 2002; Johnson & Newport, 1991; Johnson, Shenkman, Newport, & Medin, 1996; McDonald, 2000; White & Genesee, 1996). The results of all these studies indicate that grammaticality judgment measures effectively assess L2 speakers' language proficiency (Flege, Yini-Komshian, & Liu, 1999).

#### *Semantic-Relatedness Judgment Test*

For the present study, Jiang's (2002) *Semantic-Relatedness Judgment Test* was adapted as a third measure of L2 proficiency. Jiang used this instrument to test the organizational structure of the L2 mental lexicon of a group of adult Chinese L2 speakers who initially learned English as a foreign language in China around the age of 12 through bilingual translation methods.

For his study, Jiang (2002) initially constructed 120 high-frequency English word pairs; then, in order to determine whether an English word pair shares the same Chinese translations, the 240 words were randomized and given to three Chinese-English bilingual speakers who were asked to provide the first Chinese translation that came to mind for each English word. When all three informants translated the two members of a pair into the same Chinese equivalent, this pair was labeled as the "same translation" pair. If two or more different translations were given to the two members in the pair, this pair

was labeled as “different translation” (p. 621). These two sets of word pairs were then given to five native-English speakers, who were then asked to rate the semantic relatedness for the two sets of word pairs. Jiang (2002) then selected 80 word pairs, comprising 40 from each set, and administered them to 25 adult Chinese-English bilinguals and 27 native-English speakers.

The results of Jiang’s (2002) study showed that although Chinese L2 participants rated the two sets of word pairs (same translation set and different translation set) significantly different from each other in terms of semantic relatedness, the native-English speakers all regarded the two sets of word pairs as semantically similar.

According to Jiang (2002), differences between the word pair with the same Chinese translation and the word pair with different Chinese translations preserved by foreign-born Chinese L2 speakers may be due to the differential influence of the Chinese conceptual/semantic system in the L2 mental lexicon of these adolescents as a function of their age of arrival and their length of stay in an English-speaking country. That is, lexical semantic transfer between L1 and L2 to conceptual mediation in the L2 mental lexicon of the interlanguage system of these Chinese L2 speakers takes place as their language proficiency increases (Jiang, 2000; Kroll & Stewart, 1994). To put it in simple words, beginning L2 speakers usually use L1-L2 translation to learn L2, causing the conceptual part of their L2 mental lexicon to be more L1-orientated. As their L2 proficiency improves, L2 speakers tend to rely on L2 instead of L1-L2 translation to learn L2, resulting in less L1 interference in the conceptual part of their L2 mental lexicon.

The rationale for using an adapted Semantic-Relatedness Judgment Test in this study was based on the following assumptions: (1) Chinese speakers who come to the

United States and Canada at a later age and have stayed in the United States and Canada for a shorter period of time tend to give higher scores to word pairs having the same Chinese translations but lower scores to word pairs having different Chinese translations; (2) native-born Chinese tend to give high scores to both sets of word pairs; and (3) Conversely, those who arrived in the United States and Canada at an earlier age and stayed in the United States and Canada for a longer period of time tend to give higher scores to both sets of word pairs since these participants learned English in an environment similar to native-English speakers. As a result, the more proficient the participants are in English, the more likely they would give higher scores to word pairs with different Chinese translations. Since it is assumed that higher scores would be given to word pairs with the same Chinese translations by all participants regardless of the proficiency levels of these participants, the results for the word pairs with the same Chinese translations as a proficiency test should be treated with caution.

A study by Duan (2004) indicated that age of arrival in the United States was negatively correlated with the scores of the semantic judgment test of word pairs with different Chinese translations adapted from Jiang (2002) for a group of Chinese immigrants whose age of arrival in the United States varied from 3 to 12 years,  $r = -.393$ ,  $p < .01$ . Duan's (2004) results indicated that the younger the participants were when they arrived in the United States, the more likely these respondents were to regard word pairs with different translations as synonyms, which is how a control group consisting of native-born English speakers responded to the same items. This finding suggests that in addition to tapping the influence of Chinese on the organizational structure of the L2 mental lexicon of Chinese L2 speakers, the semantic judgment test of word pairs with

different Chinese translations could also be seen as an indirect indicator of language proficiency.

On the other hand, Jiang's (2002) Semantic-Relatedness Judgment Test as a language proficiency test is a new attempt, which has never been reported in any published studies either in cross-cultural psychology or in SLA. Since no theoretical foundations have been established in published studies on how L2 proficiency could be assessed by using the Semantic-Relatedness Judgment Test created by Jiang (2002), the author cautions that Jiang's semantic judgment test of word pairs with different Chinese translations is at best an indirect measure of the language proficiency of Chinese immigrant participants.

#### Relationships Among Language Proficiency, Sociolinguistic, and Psychological Orientations

Qualitative studies in SLA also shed light on the importance of sociolinguistic orientation in the promotion of L2 development. For example, in her two-year longitudinal studies of two young girls, Lilian and Elisa, who came to the United States at about 12 years of age, Valdés (1998) observed that the English as a Second Language (ESL) classroom environment where these two girls were learning English provided them with little opportunity to interact with native-English speakers. In spite of similar classroom experiences, Valdés found different levels of English proficiency for the two girls, which she attributed to different levels of sociolinguistic orientation in terms of L2 use. In one case, Elisa took every opportunity to use and practice English, not only in ESL classrooms, but also in sheltered classes within school environments. While at home, Elisa's mother encouraged her to use and practice English whenever there was a chance;



she not only insisted that Elisa watch English-only TV programs, she also spoke English to Elisa on all occasions, although her own English proficiency was far from perfect.

In contrast, Lilian paid little attention to using and practicing English either in the classroom or outside school. For example, she talked to other students in her native language in the classrooms and seldom worked on her English assignments. When outside the classroom, she enjoyed hanging out with other girls and boys of her own language and national origin. As a result, two years later, Elisa' efforts to seek every opportunity to use and practice English were rewarded. Her English proficiency not only improved greatly, but also she was placed in the regular math class instead of "sheltered" math class. Lilian, on the other hand, understood little English and was once again placed in the beginning ESL program when she transferred to another school (Valdés, 1998).

In terms of the reciprocal relationship between language proficiency and psychological orientation, qualitative studies based on adult L2 learning in naturalistic surroundings conducted by Schumann (1978b) and Stauble (1978) both indicated that favorable psychological orientation toward the L2 community enhanced the development of L2 proficiency, which in turn facilitated the process of immigrants identifying with the L2 community both psychologically and sociolinguistically.

In the descriptions of the daily activities of both Elisa and Lilian, Valdés (1998) identified sociolinguistic orientation as the most immediate factor affecting the differential language proficiency between Elisa and Lilian, but psychological orientation also played an indirect role in affecting the two girls' English proficiency. Elisa's mother did not allow her daughter to play with other Latino boys or girls mainly because she was afraid that Elisa would not be psychologically oriented towards the English-speaking

society in the future. By forcing her daughter to interact in English even at home, she indicated to her daughter the importance of becoming a member of the mainstream English-speaking society. In this way, she hoped that in the future Elisa would not be relegated to doing unskilled jobs as she had been doing. In the case of Lilian, it is even more obvious that psychological orientation had an indirect impact on her ultimate English proficiency. After she began to engage in more social gatherings with Latino adolescents, Lilian felt more comfortable staying with this group of adolescents, who were known as *sureños* (newly arrived Latinos), and finally became a gang member, often fighting and bullying other girls at school. Her strong but unhealthy sense of ethnic identity and engagement in activities with other immigrant Latino adolescents prevented her from psychologically identifying with the L2 community and from sociolinguistically using and practicing English.

Age of Arrival, Length of Stay,

L2 proficiency, and Acculturation

Addressing the relationship between age of arrival and L2 proficiency in acculturation studies, Schumann (1975) argued that L2 learners who arrive at a later age are more likely to face psychological and social problems related to L2 learning than L2 learners who arrive in a new culture at an earlier age. First, the younger the L2 learners begin to learn the L2, the less language shock they will experience (Stengal, 1939). Second, child learners are more strongly motivated than adults to integrate with the L2 community culturally, socially, and psychologically. This is probably the result of the pleasure they derive from playing with children their own age (Schumann, 1975). Third, child L2 learners are less emotionally and cognitively mature and therefore may suffer

less from anxiety in learning and using L2 (Ellis, 1994). Fourth, young children seem to be less threatened by the sounds of a new language and are more willing to depend on others for support in learning a new language as they often do in learning other tasks, while older L2 learners who have already acquired a basic security in their own language may refuse to learn a new language if they find that learning the new language plunges them into a dependent or insecure state (Curran, 1961).

In cross-cultural studies involving the variables of age of arrival, length of stay, language proficiency, and acculturation either separately or concurrently, researchers have also found that age of arrival and/or length of stay not only significantly predicted L2 proficiency, they also significantly correlated with acculturation with regard to sociolinguistic and psychological orientations (Kuo & Roysircar, 2004; Huang, 1997; Anderson, Moeschberger, Chen Jr., Kunn, Wewers, & Guthrie, 1993; Tsai, Ying, & Lee, 2000; Yeh, 2003). For example, in their efforts to describe the development and validation of an acculturation scale for Southeast Asian adult immigrants, Anderson, Moeschberger, Chen Jr., Kunn, Wewers, and Guthrie (1993) found that age of arrival and length of stay in the United States significantly correlated with language proficiency and acculturation as measured by some items concerning sociolinguistic orientations. Specifically, those who arrived earlier and stayed longer in the United States self-reported themselves as being more proficient in speaking, reading, and writing in English and as more likely to use English with their spouses, children, friends, neighbors, at work and at family gatherings.

As part of their acculturation studies involving sociolinguistic and psychological orientations for American Chinese college students, Tsai, Ying, and Lee (2000) reported

that the age factor constituted a significant variable in predicting not only second language use and proficiency, but also acculturation status and ethnic identification. The Chinese immigrant college students who arrived at or before the age of 12 not only demonstrated greater use of and proficiency in the English language but also showed greater affiliation with American people, greater participation in American activities, and greater preference for media in English than did their counterparts who arrived in the United States after the age of 12.

Some acculturation studies yield results that add to and extend the results found in most other acculturation studies. For example, part of the findings in a study conducted by Yeh (2003) with Asian (Chinese, Korean, and Japanese) immigrant youths indicated that age at testing was positively related to general acculturation well-being. That is, the older the immigrant youths were at the time of testing, the more identified they felt with the American culture. This finding seemed to suggest that length of stay actually was the key factor establishing the positive correlation between age and psychological orientation. Since these Asian immigrant participants had an average stay of 4.73 years in the United States at the time of testing, it is quite possible that the older the participants were, the longer they had stayed in the United States.

#### Acculturation and Immigrant Adolescents

Adolescence, regardless of racial origin, has been conceptualized as a period of socio-psychological introversion during which individuals engage in more self-exploration and examination of their roles in the surrounding environments (Erikson, 1968; Huang, 1997; Yeh, 2003). In a new culture, which is different from, even in sharp contrast to, one's home culture, the developmental tasks of seeking self-identity and

social belonging will pose not only demanding challenges but also frustrating barriers for adolescent immigrants who are straddling two distinct cultures (Sandhu, 1997; Yeh, 2003). These adolescents confront the normal developmental tasks within each culture, with the added burden of integrating the sometimes conflicting values of these coexisting and sometimes competing cultures (Huang, 1997). Thus, these immigrant adolescents may face additional anxiety and confusion regarding their identity and tend to isolate themselves from the new culture by shutting off interactions with the people of the new culture. Moreover, as adolescents grow older, they are more sensitive to, and more aware of, racist pressures or insinuations, which may contribute to increased psychological concerns or distress (Yeh, 2003). Those who are not well prepared for the new challenges may find themselves in a difficult situation struggling to adjust to the new culture and learning to cope with unpleasant encounters. In some cases, they may fail to achieve an optimal status of self-identity, psychological well-being, and social behavior expectations for themselves, which may include the mastering of the target language of the host culture (Schumann, 1986).

#### Chinese Adolescents in Acculturation Studies

In recent years, research on acculturation of Chinese immigrant adolescents has become a pervasive topic within the literature of cross-cultural psychology in North America (Atkinson, Lowe, & Matthews, 1995; Huang, Leong, & Wagner, 1994; Kim, Yang, Atkinson, Wolfe, & Hong, 2001; Lie, Lim, & Liem, 2000; Liu, Pope-Davis, Nevitt, & Toporek, 1999; McKay & Wong, 1996; Tsai, Ying, & Lee, 2000; Ying, 1995; Ying, Coombs, & Lee, 1999; Yeh, 2003; Yu & Berryman, 1996). Three of these studies are outlined below because they are representative of this body of research and its results.

In order to investigate relationships among self-esteem, acculturation, and recreational participation for Chinese immigrant adolescents, Yu and Berryman (1996) recruited a group of Chinese adolescents (grades 9-12) attending a high school in New York City. Most of their participants came to the United States from Mainland China and had resided in the U.S. for less than five years. These researchers found that there was a low but significant correlation between levels of acculturation and recreational participation among these recently arrived Chinese adolescents ( $r = .20$ ;  $p \leq .05$ ) and that there was a low tendency for these young people to acculturate into the local L2 community. Instead, they preferred to maintain their original life-style, and they were more likely to engage in recreational activities within the Chinese community. The results also indicated that despite the cultural barriers encountered by these Chinese adolescents during the dynamic process of acculturation, they still maintained a moderately high sense of self-esteem.

Florsheim (1996) also studied a group of Chinese immigrant adolescents from Mainland China. In this study, Florsheim looked at demographic variables such as gender, place of origin (whether born and bred in rural or urban areas in China), length of stay and parental employment status as well as language proficiency. This researcher's analyses were conducted to determine whether these variables were related to the participants' social and psychological adjustments to the new culture. His findings revealed that when these demographic variables were held constant, higher language proficiency led to more psychological and social adjustment problems. Florsheim's interpretation of this unexpected finding is that for some immigrant adolescents, the process of learning and becoming proficient in the new language and of adapting to

values of the new culture is accompanied by significant psychological pressures from peers and family.

In a more recent study Kuo and Roysircar (2004) collected data from a sample of 506 Chinese adolescents living in Canada. The sample was divided into three cohort groups: (1) *early immigrants*, which included Canadian-born adolescents and foreign-born adolescents who arrived in Canada before completing elementary school, (2) *late immigrants*, which consisted of foreign-born adolescents who came to Canada after finishing their elementary preparation, and (3) *internationals*, who were mostly non-immigrant visa-holding students who had lived in Canada for short periods of time. Researchers of this study were interested in how acculturation and acculturative stress (interpersonal conflicts with people from the dominant culture and a feeling of alienation from both cultures) might be associated with sociocultural and psycholinguistic variables such as age of arrival, length of stay, social class, and self-reported English reading proficiency. The authors put forward two hypotheses for the study. The first was that an earlier arrival and a longer stay in Canada as well as a greater English reading ability would predict higher levels of acculturation and lower levels of acculturative stress. The second hypothesis assumed that in terms of the three cohort groups, the early immigrant group would demonstrate the highest levels of acculturation and the lowest levels of acculturative stress while the international group would show the lowest levels of acculturation and highest levels of acculturative stress, with the late immigrant group remaining in the middle. The results of this study indicated that the first hypothesis was supported; that is, age of arrival, length of stay, and English reading ability were significant predictors of acculturation and acculturation stress. On the other hand, the

results of this study were more complicated in terms of support for the second hypothesis. The early immigrant group was indeed the most acculturated and experienced the least amount of acculturative stress. However, the late immigrant group and the international group did not differ significantly in their acculturation levels, nor in their acculturative stress levels. The authors of the study attributed the similarity in terms of acculturation and acculturative stress between the two groups to two reasons: (1) the two groups of adolescents, who differed in status of immigration, had much in common in their cognitive developmental status; that is, they both moved to Canada after their formal operational stage began to develop, with the mean age of arrival in Canada for the late immigrant group being 13.62 and the mean age of arrival for the international group being 16.84. (2) The two groups of respondents were similar in proficiency in their native language, Chinese. The second finding is also in line with findings by Bahrlick, Hall, Goggin, Bahrlick, and Berger (1994) and Jia and Aaronson (2003) which showed that postpubescent L2 learners maintain their L1 as their dominant language even though they have had more L2 exposure than L1 exposure in their new environment.

#### Acculturation and L1-Speaking Population

Few scholars in cross-cultural psychology have addressed how social contexts such as L1-speaking population density might play a role in affecting the acculturation orientations of L2 speakers, especially adolescent L2 speakers. In one of these studies, Zhou and Bankston (1998) suggested that successful integration with the host culture largely depends on how immigrants' characteristics interact with the circumstances they find in the host country. They explained that environmental factors such as the degree to which immigrants are involved in activities with their L1-speaking or L2-speaking



neighbors might indirectly affect the degree to which these immigrants identify themselves with the L1-speaking community or the L2-speaking community.

Though neighborhood ethnic composition is not a formal dimension of acculturation per se (Schnittker, 2002), scholars in acculturation studies have found that neighborhood composition may act as a moderator variable predicting the overall psychological well-being (Noh & Avison, 1996; Tran, 1987) and cultural orientations of immigrants (Ying, 1995). For example, research conducted by Kaplan and Marks (1990) indicated that large L1-speaking populations in a particular neighborhood may adversely affect the use of the second language, resulting in stronger ethnic identity but weaker identification with the dominant culture. Ying (1995) also found that co-ethnicity in neighborhoods was associated with self-esteem of immigrants but decreased tendencies to acculturate perhaps because social comparison in this case was less threatening to immigrants due to similarity between these immigrants and others in the neighborhood. Ying (1995) concluded that population density might exert differential effects on the relationship between cultural orientation and psychological well-being of Chinese Americans, both foreign-born and native-born. On the other hand, Schnittker (2002) investigated a group of Chinese adults living in Los Angeles County and looked at the relationship between acculturation and self-esteem when taking into consideration the effects of neighborhood ethnic density. Schnittker's (2002) results seemed to indicate that subjects' acculturation levels were not determined by neighborhood ethnic composition but by the L2 proficiency levels of the participants.

One feature of concern in acculturation research involving immigrant adolescents is the extent to which the ethnic identity of adolescent immigrants is the function of the

social and cultural milieu surrounding adolescents and their families. In their studies of the relationship between cultural and social milieu and ethnic identity, Rosenthal and Feldman (1992) compared two cohorts of Chinese adolescents. One cohort consisted of Chinese-Australian adolescents living in the Melbourne area who were a small minority in their schools and accounted for less than 5% of the student body. The other cohort was composed of Chinese-American adolescents living in the San Francisco Bay area and attending schools in which they accounted for 35% of the student body. Since the participants in these two environments lived in two different cultural milieus and had different access to social networks, the authors predicted that their Chinese-American participants would show higher levels of ethnic identity and likely less acculturation to the dominant culture, while the Chinese-Australian subjects would demonstrate less ethnic identity with the Chinese culture but more acculturation to the dominant culture. However, to their surprise, the results of their studies indicated that for these immigrant adolescents, social networks and cultural milieu played no key role in determining how the adolescents identified themselves with the dominant society. Both Chinese-American immigrant adolescents and Chinese-Australian adolescents showed similar degrees of ethnic identity. Three possible reasons were suggested by the authors as explanations for the results. First, their adolescent subjects in both cohorts came from middle- to upper-middle-class families, and the relative affluence of their families may have cushioned them from the detrimental effects of their small and isolated ethnic group membership. Second, the Australian Chinese community had a long tradition of maintaining a higher degree of cohesion, social structure, and organization, making them proud of their ethnic identity (Lee, 1997a, 1997b; Uba, 1994). Finally, the distinguishing physical

characteristics of the Chinese made them a visible minority, whether in Melbourne, Australia or in San Francisco, USA. This unique physical labeling by themselves as well as by people of other ethnic backgrounds may inadvertently contribute to the maintenance and salience of the ethnic identity of these adolescents.

### Summary

The ethnic Chinese population constitutes the largest Asian population both in the United States and in Canada. Despite its large size, most of the ethnic Chinese population is mainly concentrated in a few metropolitan cities (Wenhui, 2005). Nevertheless, the ethnic Chinese population density varies from city to city both in Canada and in the United States. Studies by Noh and Avison (1996), Tran (1987), and Ying (1995) have indicated that differential density of the L1-speaking population in neighborhoods might exert differential influences on the psychological factors experienced by immigrants living in and around these neighborhoods and the choice of language used for communication purposes between residents in these neighborhoods (Kaplan & Marks, 1990).

Acculturation, although multidimensional in nature (Cuéllar, Harris, & Jasso, 1980; Suinn, Ahuna, & Khoo, 1992), consistently has been found to consist largely of two important dimensions, sociolinguistic orientation and psychological orientation, in most acculturation studies (Chung, Kim, & Abreu, 2004; Cuéllar, Harris, & Jasso, 1980; Cuéllar, Arnold, & Maldonado, 1995; Marín & Gamba, 1996; Stephenson, 2000). These qualitative studies using case studies and longitudinal ethnographic studies have consistently indicated that sociolinguistic and psychological orientations towards the L2

community promote the development of L2 proficiency for adolescent and adult immigrants.

Acculturation is a dynamic process involving social and psychological integration with the new norms, values, beliefs, and cultural systems of the new dominant society (Schumann, 1978b, 1978c, 1986; Tropp, Erkut, Coll, Alarcón, & García, 1999).

Therefore, differential sociolinguistic and psychological orientations may be associated with changes from a dependence on the original culture to an interdependence with the new culture. Demographic factors such as age of arrival and length of stay may be involved since acculturating with the new culture sociolinguistically and psychologically requires time and effort and the differential age of arrival and length of stay in the new culture could result in differential acculturation outcomes both sociolinguistically and psychologically (Anderson, Moeschberger, Chen Jr., Kun, Wewers, M, & Guthrie, 1993; Kuo & Roysircar, 2004; Tsai, Ying, & Lee, 2000).

#### Statement of Research Objectives

Prior to the study depicted here, no studies in acculturation had attempted to explain the relationship between acculturation and L2 proficiency of ethnic Chinese adolescents residing in environments with different degrees of Chinese population density.

Therefore, this researcher chose to recruit participants from Vancouver, Canada and Atlanta, USA because of the high density of the Chinese-speaking population in the former and the low density of Chinese-speaking residents in the latter for the purpose of employing quantitative research methods to explore the relationship between the density of the ethnic Chinese population and the acculturation of ethnic Chinese adolescents.

Specifically, this study investigated whether differential levels of ethnic Chinese population density in these two metropolitan cities were significantly associated with different acculturation levels of Chinese adolescents. Besides, this study sought to explore whether differential levels of ethnic Chinese population density in the two cities led to differential levels of L2 proficiency in Chinese adolescents. Finally, this study addressed the relationships between L2 proficiency and the factors of age of arrival and length of stay for these ethnic Chinese adolescent participants when the factor of acculturation was the focal variable.

### Research Questions

The research questions raised in this study derived from hypotheses advanced by the author during his reading of relevant literature on the studies of acculturation and language proficiency in the fields of both SLA and cross-cultural psychology. These hypotheses were: (1) different ethnic population densities might differentially predict acculturation orientations in adolescents living in distinctive environments; (2) differential acculturation might be associated with differential performance in L2 proficiency; and (3) age of arrival and length of stay of ethnic Chinese adolescents may not only complicate the relationship with acculturation and L2 proficiency but also differentially predict the relationship between acculturation and L2 proficiency. The specific research questions guiding the design and analyses in this study are listed as follows:

1. Are there any differences in the perception of their ethnic environment between ethnic Chinese adolescents living in environments with different concentrations of ethnic Chinese populations?

2. Are there any differences in terms of acculturation between ethnic Chinese adolescents living in environments with different levels of Chinese ethnic densities?
3. Do different Chinese ethnic densities and/or different acculturation levels predict differential English language proficiency among ethnic Chinese adolescents?
4. What are the relationships among age of arrival, length of stay, acculturation, and L2 language proficiency with regard to ethnic Chinese adolescent participants in these two cities?

## CHAPTER THREE: METHODOLOGY

### Design of the Study

The overall sample in this study represents a combination of two independently-collected data sets from surveys completed by adolescent participants of Chinese ethnic background. The survey that was used to collect data from participants and the consent letter forms that were required to be signed by participants and/or their parents before they could participate in this research were first designed by the author and then submitted to his Doctoral Committee for reviews. Two of the committee members reviewed and revised the items in the survey and the wordings in the consent letter forms and suggested that some changes be made to the survey and to the consent letter forms. After the final versions of the survey and the consent letter forms were completed, the author applied to the Human Subjects Institutional Review Board (IRB) of Auburn University for final approval of the research.

Upon receiving the written approval letter from the IRB of Auburn University, the author proceeded to contact pastors of churches both in Vancouver, Canada and in Atlanta, Georgia for recruiting appropriate ethnic Chinese adolescent respondents. After permissions to conduct the present research were granted by the churches' pastors, the author proceeded to go to the two cities in person to collect data.

After data was collected from the desired participants with the help of church representatives assigned by the church's pastors, statistical procedures were conducted

for the analysis of these data. For answering the first research question, cross-tab procedures were used. For answering the second research question, ANOVA procedures were employed. For answering the third research question, regression analysis and Structural Equation Modeling were applied. For answering the fourth research question, Structural Equation Modeling was conducted.

Discussion of the data analysis was based on the results of statistical procedures as well as on published research.

### Churches and Participants

Participants in this research were recruited from three churches in Atlanta and three churches in Vancouver. All six churches are Christian churches and run by Chinese pastors except for one in Vancouver which was run by English-speaking Canadian pastors. Most of the adult churchgoers in the six churches were from Mandarin-speaking Mainland China and Taiwan.

Two of the three churches in Atlanta were located in neighborhoods where most of the residents are non-Chinese Americans, such as European Americans, African Americans, and Mexican Americans. The third one was in a business building located in a commercial area. The pastors in these three churches conducted church services, including lectures, Bible Studies, and prayers, in Chinese. All the publications and written notices posted on the churches' bulletin boards that were addressed to adult churchgoers were written in Chinese.

Chinese adolescents in these churches in Atlanta were provided with church services in English, and most of these adolescents were observed by the author communicating with each other and with adults in English. All the publications and



written notices addressed to Chinese adolescents in these three churches were written in English.

The membership of two churches in Vancouver was quite similar to that in the three churches in Atlanta, where church services were provided to adult churchgoers in Chinese by Mandarin-speaking pastors. And all the written notices addressed to adult church members in the two churches were written in Chinese.

Both of the two churches provided church services, such as Bible Studies in English to Chinese adolescents, with one church providing church services in Chinese to some of the Chinese adolescents, who were usually recently arrived immigrants. On the other hand, all the written notices addressed to Chinese adolescents in the two churches were written in English.

The third church in Vancouver was a very large one where most of the churchgoers were Caucasian Canadians, and Chinese churchgoers either attended church services provided by English-speaking Canadian pastors via bilingual translation services or services provided by a Chinese-speaking pastor in a church room. Written notices addressed to adult Chinese churchgoers were written in Chinese in this church. The church services provided to Chinese adolescents in this church were in English though some of the Chinese adolescents were observed speaking Chinese to each other. All the written notices addressed to Chinese adolescents in this church were written in English.

All three churches in Vancouver were located in neighborhoods where many or even most of the residents were either Mandarin-speaking or Cantonese-speaking Chinese. For example, the author spent two hours observing the physical environment surrounding the third church in which most of the members were Caucasian Canadians,

and found that at least 55% of the residents of the houses in the vicinity of the church were either Chinese-speaking or looked Chinese in their appearance and clothing. The author observed Chinese adolescents in the three churches in Vancouver communicating with each other or with adults both in English and in Chinese.

### The Survey

The survey for the present research consists of a questionnaire and two language proficiency tests, which are attached as Appendices A, B, and C respectively at the end of the dissertation. The questionnaire is divided into five parts, and each part of the questionnaire and the two language proficiency tests are described in the sections that follow.

### *Demographics*

Part One of the questionnaire includes nine items that solicited demographic information. These items requested information about the participants' gender, age at testing, present grade level, whether the subjects were native-born or foreign-born, the year when their parents arrived in the US/Canada, the occupation and educational levels of their parents, and so on. Foreign-born participants were also requested to provide information on their age of arrival in the United States/Canada, whether they had attended school before they arrived in the US/Canada. The author assumed that these demographic factors might play a role in affecting the acculturation status of the participants since some of these demographic factors have been shown to play a role in how quickly immigrant children acculturate to the target language community. For example, Chang, Morrissey, and Koplewicz (1995) found that Chinese American girls became more acculturated the longer they stayed in the United States, whereas for

Chinese American boys the length of stay in the United States was not associated with acculturation status. Age at the time of immigration was also found to affect the process of acculturation. For example, children who immigrate in their adolescence have greater difficulty adjusting to life in the United States (Chun, 1998). In other words, the younger a child is at the time of immigration, the quicker and better he or she acculturates into the mainstream community.

### *Environments*

Part Two of the questionnaire is composed of 23 items tapping such information as participants' school location, number of Chinese students in classes or schools, whether participants and their parents have access to Chinese media, and so on. The author wanted to see if these demographic factors might be related to participants' acculturation and language proficiency. The author also wanted to find out whether there were differences in terms of environmental factors surrounding the Chinese adolescents in the two cities.

### *Acculturation*

Items on acculturation for this research project were divided into two parts: psychological orientation and sociolinguistic orientation, and two different subscales were designed to tap the two orientations.

#### *Psychological Orientation Scale*

For the current study, the nine-point PAS (Tropp, Erkut, Coll, Alarcón & García, 1999) was reduced to a 5-point Likert scale, which follows the model from Study 3 of Tropp et al.'s research. These researchers changed to a 5-point Likert scale for the PAS because they found that most respondents from Study 2 in their studies used only a

portion of the response options from the original 9-point scale. The author of the study anticipated that participants in this study might do the same, so the abbreviated PAS was used.

#### *Sociolinguistic Orientation Scale*

The sociolinguistic orientation for this study was tapped by 10 items on the *Sociolinguistic Scale on L2 Use*. These items on L2 use were based on and adapted from BAS used by Marín and Gamba (1996) and GEQAV (Abridged) employed by Tsai, Ying, and Lee (2000). The internal reliability coefficient for the BAS was reported as .97 and the internal reliability coefficient for the GEQA as .92. Some of the items in this scale were designed by the author due to recent developments in Internet technologies and industry. For example, the item on the frequency of use of Internet by participants was added to solicit information that might provide insight into participants' access and use of web-based technology.

#### *Language Proficiency*

To assess language proficiency in the present study, the author decided to employ an L2 proficiency questionnaire that asked participants to self rate their acquisition of the four language skills. The author also administered a grammaticality judgment test and a semantic-relatedness judgment test to further assess the L2 proficiency of the ethnic Chinese adolescent subjects.

#### *Self-rated L2 proficiency Scale*

The self-rated English proficiency index consists of 4 items. These items require participants to choose a number from 1 (not well at all) to 5 (like a native English speaker)

to rate their English proficiency level in the four language skills of speaking, reading, listening, and writing.

### *Grammaticality Judgment Test*

The grammaticality judgment test was constructed by the author with the help of his Doctoral Committee members based on relevant information from several sources (Braid, 1999; Johnson & Newport, 1989; McDonald, 2000; Thomas, 1991; White, 1989; White & Genesee, 1996; Zhang, 1986). Previously-used grammaticality judgment tests were adapted for the purpose of measuring the language proficiency of Chinese adolescent participants in the areas of adjacency (item 12), cross-linguistic parameter resetting (items 2, 15, and 21), subjacency (items 7, 8, and 9), word order of determiners (items 3, 11, 22, and 26), phrasal verb order (items 5 and 28), lexical semantics (items 17 and 29), and infinitive mastery (items 14, 19, and 27). The rest of the items are all grammatically correct sentences used as fillers.

In taking this test, participants were first required to mark if one sentence was correct or incorrect; if incorrect, they were then required to rewrite a sentence to correct the incorrect one. This last part of procedure differed from those in the grammaticality judgment tests used by most L2 researchers which were administered either through audiotapes to L2 speakers (Birdsong & Mollis, 2001; Johnson & Newport, 1989; McDonald, 2000) or through on-line computer screens (White & Genesee, 1996). Participants in these earlier studies were then required to check if the aurally or visually presented sentences were correct or incorrect either by marking an answer sheet (DeKeyser, 2000) or by pressing a yes/no button in front of them (McDonald, 2000). Although there was no time limit for taking these tests (Flege, Yeni-Komshian, & Liu,

1999), McDonald (2000) pointed out that taking grammaticality judgment tests in the written form might be much easier than in the phonological form because the printed version imposed less of a processing load on working memory. As a result, participants who took the written form of the grammaticality judgment tests might have exhibited higher L2 proficiency than those who took the aural form even though the proficiency levels of the subjects in the two conditions might have been the same (McDonald, 2000).

By requiring participants to work with the written form and to rewrite sentences in the study reported here, the author hoped that differences in L2 proficiency among participants due to different age groups and different environmental conditions might be made more apparent than would have been the case if they only judged the grammatical correctness of sentences in either aural or visual forms.

#### *Semantic-Relatedness Judgment Test*

In the current study, 14 word pairs with the same Chinese translations and 15 word pairs with different Chinese translations were included to tap the ability of participants to make the semantic judgment. Participants are required to fill in a number from zero to five. That is, if they thought that the meanings of two words in the word pair were exactly the same, they would write the numeral 5, and if they think that the meanings of the two words in the word pair are totally different, they would write with the numeral 0.

#### Procedures

After getting written permission from church pastors, the author discussed details with church representatives assigned by pastors to determine how, when, and where to conduct this research. The author then provided enough copies of consent letter forms to

the church representatives, who then distributed the forms to adolescents after they finished church service. The consent letter forms, which are attached as Appendix D, consisted of three letters. One letter was addressed to adolescents between 12 and 18 years old. Adolescents of this age group had to get their parents' permission before they could participate in this research. The second letter with Chinese translations was addressed to parents of those adolescents who were between 12 and 18 years old. The third letter applied to adolescents who were 19 years and older and did not require their parents' permission to participate in this research.

The time and place for conducting this research were handwritten in the consent letter forms, and sometimes orally announced to the adolescents by the church representatives. In most cases, the time for conducting the research was one week after the adolescents finished the church services in which consent letter forms were distributed. Those who turned in all the required consent forms were invited to a quiet church room after they finished the church services, usually Bible Studies, for the day. When all the participants were seated in the church room, the researcher gave the following instructions:

“Hi boys and girls, my name is Guiyong Duan. I am a Ph.D. candidate in the Department of Curriculum and Teaching, Auburn University, Alabama. I am now conducting a research project for my dissertation. The purpose of the project is to investigate how acculturation of Chinese adolescents in the United States and Canada affects their language proficiency. Acculturation means how closely or how distantly you regard yourself as a member of the English-speaking community. Language proficiency means how well you can speak, listen, read, and write in English.”

“I am now asking for your favor to help me with my project. All you will have to do is to truthfully complete the survey distributed to you. Of course, completing this survey is totally voluntary. That is to say, it is up to you to decide whether you want to complete the survey or not. Those who want to help me with the survey can just complete the survey in the room. Completing the survey is also anonymous. That is to say, you do not need to write your names on the survey.”

“The survey is enclosed in an envelope. After you complete the survey, please put it back in the envelope and leave it on your table or return it to me. You have one hour to complete the survey. When one hour is over, you can just leave the room whether you have completed the survey or not. You are welcome to ask any questions concerning any items in the survey when you are not sure of them, and I will be happy to answer them.”

The researcher and the church representatives were present in the church room when participants were completing the survey. Most participants completed the survey in the church room after their Bible Studies. But a few Chinese adolescents in one church in Atlanta participated in the research in a church room at the author’s individual invitation after being given permission from both the pastor and from their parents. Those adolescents were approached by the author within the church premises because they were observed speaking Chinese with their parents and attending church services together with their parents. These adolescents were not observed participating in church services with other ethnic Chinese adolescents who were usually observed speaking English.



## CHAPTER IV: DATA ANALYSES AND RESULTS

### Sample Description

The sample population for this study consisted of a convenience sample of 133 ethnic Chinese adolescents that resided in two cities, each with a different density of ethnic Chinese residents. Sixty three of the participants (47.4%) resided in a city with high Chinese ethnic density (Vancouver, Canada), among which 28 were boys and 35 were girls, while 70 participants (52.6%) resided in a city with low Chinese ethnic density (Atlanta, USA), among which 34 were boys and 36 were girls. Among the participants in the low-ethnic-density environment 29 (41.4%) were born in the United States and 41 (58.6%) were foreign-born. In the high-ethnic-density group there were 24 (38.1%) born in Canada and 39 (61.9%) born outside Canada. Age at testing for participants in the high-ethnic-density group and low-ethnic-density group varied from 12 to 22 ( $M = 15.27$ ,  $SD = 2.54$ ) and from 12 to 19 ( $M = 15.03$ ,  $SD = 1.97$ ) respectively. Table 1 shows demographic variables that describe both groups.

Table 1

Demographic Information of Ethnic Chinese Adolescents by Ethnic Density of their Environments

Density	High		Low		Total	
	N	%	N	%	N	%
Participants	63	47.4%	70	52.6%	133	100%
Gender of Participants						
Male	28	44.4%	34	48.6%	62	46.6%
Female	35	55.6%	36	51.4%	71	53.4%
Age at Testing of Participants						
Mean	15.27		15.03		15.14	
SD	2.54		1.97		2.26	
Range	12-22		12-19		12-22	

To assess the socioeconomic status (SES) of the sample, a four-level SES variable was developed on criteria provided by Ng (2005). Only two factors in Ng were taken into consideration for the present study: participants' parental occupation and participants' parental educational level. Parental income was excluded because many of

the participants might have been too young to be aware of their parents' income and/or might not have had access to accurate information about income levels.

Those participants with at least one parent holding a master's degree or higher and with at least one parent employed as a professional were assigned the highest SES value of 4 (Highest-SES). Participants with at least one parent holding a bachelor's degree and with at least one parent employed as a professional were assigned an SES value of 3 (Higher-SES). Participants with neither parent holding a college degree but with both parents having 12-14 years of education and with at least one parent employed as a semi-professional were assigned an SES value of 2 (Medium-SES). Participants with both parents having less than 12 years of education and with neither parent employed as a professional or a semi-professional were assigned an SES of 1 (Low-SES).

In order to check for differences between the SES of the participants in the two ethnic-ethnic-density environments, a chi-square test for independence was performed. The results are given in Table 2.

Table 2

Ethnic-Density-Environments by Participants' SES

Chinese Ethnic Densities	Parental Socioeconomic Status			
	Low SES	Medium SES	Higher SES	Highest SES
High	4 6.6%	15 24.6%	28 45.9%	14 22.9%
Low	3 4.3%	13 18.6%	34 48.5%	20 28.6%
X <sup>2</sup> = 1.31		p = 0.73		N = 131

The result of the chi-square test indicates that there are no significant differences between the samples from the two environments in terms of their parental socioeconomic status.

Scales and Tests Reliability

The Cronbach's alpha index of internal reliability was obtained for the scales and tests used to measure the constructs important to the current study. These constructs were: 1) acculturation with two dimensional scales: a psychological orientation scale and a sociolinguistic orientation scale; and 2) L2 proficiency made up of three components: a self-rated L2 proficiency scale, a grammaticality judgment test, and a semantic judgment test. In turn, the semantic judgment test contained two subtests, which are the semantic-same translations subtest and the semantic-different translations subtest. Table 3 shows the internal reliabilities for the scales and tests used in the current study.

Table 3

Cronbach's Alpha Reliabilities for the Scales and Tests

		All respondents	High-ethnic-density group	Low-ethnic-density group
Scales	Sociolinguistic orientation	$\alpha = .875$	$\alpha = .845$	$\alpha = .900$
	Psychological orientation	$\alpha = .926$	$\alpha = .922$	$\alpha = .926$
	Self-rated L2 proficiency	$\alpha = .954$	$\alpha = .943$	$\alpha = .963$
Tests	Grammaticality judgment	$\alpha = .065$	$\alpha = .755$	$\alpha = .024$
	Semantic-same translations	$\alpha = .650$	$\alpha = .635$	$\alpha = .661$
	Semantic-different translations	$\alpha = .614$	$\alpha = .625$	$\alpha = .609$

The extremely low reliability of the grammaticality judgment test in the whole sample is due to the low reliability of the test in the low-ethnic-density group.

Meticulous examination of the completed surveys by the researcher revealed that many of the participants who were native-born in the low-ethnic-density environment did not follow the instructions concerning the grammaticality judgment test. Therefore, the

researcher decided to exclude results of the grammaticality judgment test from data analyses involving English proficiency.

### Answering Research Questions

#### *Answering the First Research Question*

The first research question was: “Are there any differences in the perception of their ethnic environment between ethnic Chinese adolescents living in environments with different concentrations of ethnic Chinese populations?” In order to answer this question a series of contingency tables were obtained comparing the responses of the high-ethnic-density and low-ethnic-density groups on 13 items related to their assessment of the ethnic Chinese resources available in their immediate environments. Table 4 presents the results of these analyses.



	School location			Chinese students at schools			Chinese students in English classes			Chinese density in neighborhoods		
	Mostly Chinese	Equal in Chinese	Mostly US/Canadian	Mostly Chinese	Equal in Chinese	Mostly US/Canadian	0-5	6-11	11 or more	Mostly Chinese	Equal in Chinese	Mostly US/Canadian
High Density	22 39.3%	1 1.8%	33 58.9%	21 33.3%	29 46%	13 20.7%	2 3.2%	24 38.1%	37 58.7%	29 49.2%	21 35.5%	9 15.3%
Low Density	0 0%	19 29.2%	46 70.8%	0 0%	0 0%	70 100%	59 84.3%	11 15.7%	0 0%	0 0%	0 0%	63 100%
X <sup>2</sup>	39.891			89.023			94.986			90.466		
p	<.001			<.001			<.001			<.001		
N	121			133			133			122		



Results from Table 4 clearly indicate that the two groups differ in their perception of Chinese resources in their immediate environments. With the exception of the availability of Chinese TV programs, the two groups of participants showed a statistically significant difference in their reporting of Chinese resources. In general, the high-ethnic-density group reported significantly more Chinese classes at school, more Chinese teachers, more available Chinese radio programs, movies, books, music CDs, and more surfing of Chinese Internet sites than the low-ethnic-density group. On the other hand, the high-ethnic-density group also reported a larger concentration of ethnic Chinese population in their neighborhood, in their school's neighborhood, and in their classrooms than the low-ethnic-density group.

Based on these results, the researcher concluded that the first research question concerning any differences in the perception of the ethnic environment between ethnic Chinese adolescents living in environments with different concentrations of ethnic Chinese populations was answered affirmatively.

#### *Answering the Second Research Question*

The second research question was "Are there any differences in terms of acculturation between ethnic Chinese adolescents living in environments with different levels of Chinese ethnic densities?" Before answering this question, the influences of age of arrival and/or length of stay of immigrant adolescent participants had to be factored out of the analyses because results from previous acculturation studies indicated that age of arrival and length of stay were correlated to the level of acculturation (Kuo & Roysircar, 2004; Rosenthal & Feldman, 1992). Since age of arrival and length of stay are usually highly correlated (in our sample the correlation was  $r(132) = -.917, p < .001$ ),

both were combined into a single index. A plot of the age of arrival and length of stay for the foreign-born participants indicated that they were clustered in three categories: those whose length of stay was longer and who arrived in Canada or USA at a very young age; those whose length of stay was very short and who had arrived at an older age; and, those whose length of stay and age of arrival fell in between the previous two groups. Thus, we defined an Age-Arrival-Length-Stay (AALS) variable with the following values:

- 1 for the older/short-stay group of participants with an older age of arrival and a short length of stay (age of arrival between 8 and 20 years, and length of stay between 1 to 5 years)
- 2 for the group with age of arrival and length of stay in the middle (age of arrival between 4 and 16 years and length of stay between 6 to 10 years)
- 3 for the young/long-stay group with a young age of arrival and a long length of stay (age of arrival between 1 to 9 years and length of stay between 11 and 16 years)
- 4 for the native born group of participants.

A factorial ANOVA using the ethnic density of the environment and AALS as factors was conducted separately for the two indicators of acculturation: psychological orientation and sociolinguistic orientation as response variables. For psychological orientation, there was no significant interaction,  $F(3, 125) = .95, p = .419$ . Thus, the interaction term was dropped from the Anova model and the data were re-analyzed using an additive Anova model. This new model produced statistically significant main effects for ethnic-density environment,  $F(1, 128) = 4.77, p = .031$ , and for AALS,  $F(3, 128) = 14.83, p < .001$ . The high-ethnic-density environment group showed a lower average

psychological acculturation than the low-ethnic-density-environment group. A Tukey post-hoc test for the four levels of AALS indicates that the older/short-stay immigrant group differed significantly from all the other three groups in their average psychological orientation, while no significant differences were found among those other three groups.

For sociolinguistic orientation, there was again no significant interaction,  $F(3, 125) = 2.16, p = .096$ . However, there were statistically significant main effects for ethnic-density environment,  $F(1, 128) = 5.24, p = .020$ , and for AALS,  $F(3, 128) = 52.12, p < .001$ . In the low-ethnic-density environment sociolinguistic orientation was higher than in the high-ethnic-density environment. Post-hoc tests for AALS produced similar results as for psychological orientation; that is, the older/short-stay immigrant group differed significantly from all the other three groups in average sociolinguistic orientation, while no significant differences were found among those other three groups.

Table 5 shows the estimated marginal means for psychological and sociolinguistic orientations by ethnic-density environments and AALS.

Table 5

Estimated Marginal Means for Psychological and Sociolinguistic Orientations by Ethnic-Density-Environments and AALS

	Psychological Orientation		Sociolinguistic Orientation	
	M	SD	M	SD
Environmental Ethnic Density				
High Density	24.91	.936	33.27	.417
Low Density	27.63	.883	34.57	.393
AALS				
Older/Short-Stay Group	19.87	1.21	28.30	.536
Middle Group	26.41	1.40	34.44	.622
Young/Long-Stay Group	28.85	1.64	36.46	.731
Native-Born	29.93	.980	36.47	.436

In summary, participants living in environments with a high density of ethnic Chinese population consistently showed lower levels of sociolinguistic and psychological orientations than participants living in a low Chinese-ethnic-density environment. These differences were statistically significant only for the Older/Short-Stay group as compared

to the other three groups with participants who had longer stays and who had arrived at earlier ages or who were native-born.

#### *Answering the Third Research Question*

The third research question was “Do different Chinese ethnic densities and/or different acculturation levels predict differential English language proficiency among ethnic Chinese adolescents?” First, a two-way ANOVA with Chinese ethnic density and AALS as factors was applied separately to the three English proficiency variables: self-rated proficiency and the scores for semantic-same and semantic-different items.

For self-rated proficiency the interaction between the two factors was not significant,  $F(3, 125) = 2.33, p = .077$ , and neither was the main effect of Chinese ethnic density,  $F(1, 125) = .29, p = .592$ . The only significant main effect was due to AALS,  $F(1, 125) = 61.68, p < .001$ . Among the levels of AALS, the native-born and young/long-stay groups did not differ, but both of them differed significantly from the other two groups.

For semantic-same items the same pattern was repeated. There was no significant interaction,  $F(1, 116) = 1.70, p = .171$ , and no significant main effect for Chinese ethnic density,  $F(1, 116) = .30, p = .584$ . The only significant main effect was for AALS,  $F(3, 116) = 3.42, p = .020$ . In this case the post-hoc tests showed that the only two groups that had significantly different averages were the older/short-stay group and the young/long-stay group.

The two-way ANOVA for semantic-different items also produced a significant main effect for AALS,  $F(1, 116) = 10.47, p < .001$ , but no significant main effect for Chinese ethnic density,  $F(1, 116) = .43, p = .516$ , and no significant interaction,  $F(1,$

116) = 1.45,  $p = .231$ . Follow-up tests of semantic/different for AALS using Tukey's test indicated that the only significant difference was between the older/short-stay immigrant group on one side, and the native-born and the younger/long-stay immigrant groups on the other side.

Table 6

Estimated Marginal Means for Proficiency Indices by Chinese Ethnic Density and AALS

	Self-Rated		Semantic/ Same		Semantic/ Different	
	M	SD	M	SD	M	SD
	<hr/>					
Environment Ethnic Density						
High	16.49	.392	3.32	.095	3.07	.085
Low	16.78	.358	3.25	.088	3.14	.079
AALS						
Older/Short-stay	11.28	.475	2.94	.122	2.62	.110
Middle group	16.88	.553	3.37	.132	3.04	.118
Younger/Long-stay	19.20	.668	3.50	.159	3.43	.143
Native-born	19.17	.388	3.34	.096	3.32	.086

Summary of recent results of this study indicated that the ethnic density of the environment did not directly influence the proficiency in English of the ethnic Chinese

participants in the study. As expected, the age of arrival and the length of stay were better predictors of the participants' proficiency in English. In general, the older/short-stay group obtained lower proficiency scores than the other three groups. However, these results also showed that age of arrival and the length of stay in an English-majority linguistic environment influenced the psychological and sociolinguistic acculturation of an individual. In addition, results indicated that the ethnic density of the participants' environment influenced their level of acculturation. Thus, it is plausible that acculturation mediates between the actual environment of the participants and their English proficiency.

To check this idea, separate multiple regression analyses were conducted using psychological and sociolinguistic orientations, AALS, and the Chinese ethnic density as predictor variables for the three proficiency test scores. Multiple regression analysis was used to introduce the four predictor variables one by one. In the first model, only the psychological orientation was examined as a predictor of L2 proficiency. In the second model, the sociolinguistic orientation index was added. Both indices have been found in the literature to predict language proficiency (Cuéllar, Arnold, & Maldonado, 1995; Kuo & Roysircar, 2004; Schumann, 1986; Marín & Gamba, 1996; Tsai, & Ying, 2000). In the third model, in addition to the acculturation variables, AALS was added. If acculturation contributes to the prediction of proficiency beyond what AALS can predict, the indices of acculturation would remain statistically significant in this model. In the fourth model, Chinese ethnic density was added to the previous variables to see its contribution when acculturation and AALS are in the model. The results for these four models when using self-rated proficiency are presented in Table 7.

Table 7

Summary of Coefficients for Models for Self-Rated L2 Proficiency Index

	<i>b</i>	<i>Std-b</i>	<i>t</i>	<i>p</i>	<i>R<sup>2</sup> for Models</i>
Model 1					.251**
Psychological Orientation	.263	.501	6.62	< .001	
Model 2					.480**
Psychological Orientation	.094	.179	2.36	.020	
Sociolinguistic Orientation	.532	.577	7.57	< .001	
Model 3					.575**
Psychological Orientation	.059	.112	1.59	.113	
Sociolinguistic Orientation	.305	.331	4.00	< .001	
AALS	1.48	.422	5.38	<.001	
Model 4					.582**
Psychological Orientation	.066	.125	1.77	.080	
Sociolinguistic Orientation	.319	.346	4.16	< .001	
AALS	1.44	.412	5.23	<.001	
Chinese Ethnic Density	-.709	-.081	-1.38	.169	

Note: \*\* = Significance level at .001



Models 1 and 2 indicated that the two indices of acculturation predicted self-rated proficiency. Psychological orientation by itself accounted for 25.1% of the variance in self-rated proficiency. Meanwhile, the two indices of acculturation were significant predictors of self-rated proficiency and both together account for 48% of its variance. However, when the AALS variable was introduced in the third model, the contribution of the psychological orientation became statistically non-significant. Although the third model accounted for 57.5% of variance in self-rated proficiency, most of this was due to the contribution of the sociolinguistic orientation and the AALS variables. The same pattern was shown in the fourth model; sociolinguistic orientation and AALS were the only significant predictors of self-rated proficiency. The contribution of the ethnic density environment was not statistically significant. A similar analysis for the Semantic/Same test scores is presented below in Table 8.

Table 8

Summary of Coefficients for Models for Semantic/Same Test Scores

	<i>b</i>	<i>Std-b</i>	<i>t</i>	<i>p</i>	<i>R<sup>2</sup> for Models</i>
Model 1					.031
Psychological Orientation	.015	.175	1.97	.051	
Model 2					.066*
Psychological Orientation	.004	.048	.455	.650	
Sociolinguistic Orientation	.033	.227	2.13	.035	
Model 3					.067*

Psychological Orientation	.004	.042	.391	.696	
Sociolinguistic Orientation	.030	.203	1.62	.109	
AALS	.024	.042	.354	.724	
Model 4					.071
Psychological Orientation	.004	.051	.471	.639	
Sociolinguistic Orientation	.032	.216	1.70	.092	
AALS	.019	.033	.282	.779	
Chinese Ethnic Density	-.089	-.064	-.708	.480	

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Note: \* = Significance level at .05

The first model indicated that by itself the psychological orientation did not significantly predict the semantic/same test scores. However, the sociolinguistic orientation index in model 2 did significantly predict the response variable. The second model only accounted for 6.6% of variance in semantic/same test scores. Model 3 did not improve substantially the percentage of variance accounted for by the predictor variables. Furthermore, the introduction of AALS in the model changed the contribution of sociolinguistic orientation into one that was not significant. Finally, the introduction of Chinese ethnic density in Model 4 did not help in the prediction. In summary, the results above suggested that sociolinguistic orientation was the only significant predictor in semantic/same test scores. The analysis for the semantic/different scores is presented in the Table 9 below.

Table 9

Summary of Coefficients for Models for Semantic/Different Test Scores

	<i>b</i>	<i>Std-b</i>	<i>t</i>	<i>p</i>	<i>R<sup>2</sup> for Models</i>
Model 1					
Psychological Orientation	.034	.404	4.88	< .001	.163**
Model 2					.228**
Psychological Orientation	.020	.232	2.40	.018	
Sociolinguistic Orientation	.043	.307	3.18	.002	
Model 3					.248**
Psychological Orientation	.017	.204	2.11	.037	
Sociolinguistic Orientation	.028	.199	1.77	.080	
AALS	.104	.190	1.80	.074	
Model 4					.248**
Psychological Orientation	.017	.203	2.08	.040	
Sociolinguistic Orientation	.028	.198	1.73	.086	
AALS	.104	.191	1.79	.075	
Chinese Ethnic Density	.007	.005	.061	.952	

Note: \*\* = Significance level at .001

The above regression results indicated that psychological orientation was the best predictor of the semantic/different scores. Psychological orientation by itself predicted 16.3% of the variance in semantic/different test scores. When sociolinguistic acculturation was added, the second model accounted for 22.8% of variance in semantic/different test scores, and both predictors were significant. The introduction of AALS in the third model, and of ethnic density in the fourth model, only diluted the importance of the sociolinguistic orientation but retained the importance of the psychological orientation. Thus, the results of these models indicated that regardless of the model, psychological orientation significantly predicted semantic/different test scores.

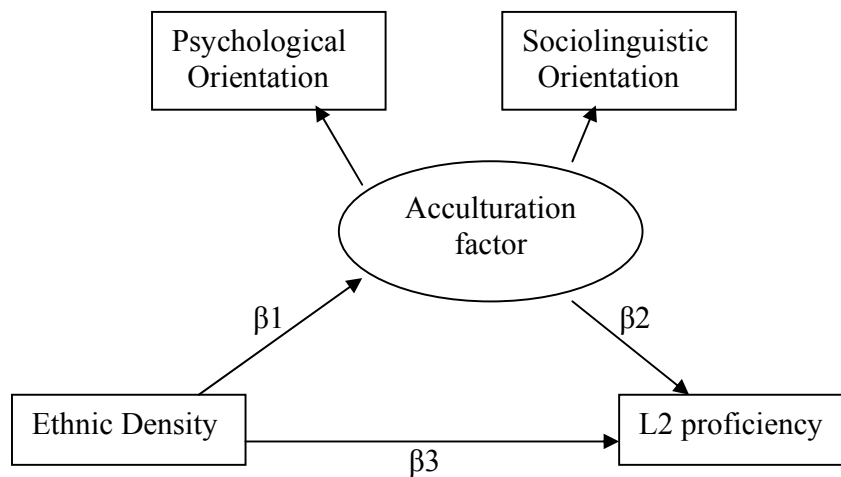
Based on the results of the above three sets of multiple regression analyses, the researcher concluded that different variables help to predict the three English proficiency indices. Age-arrival/length-stay (AALS) and sociolinguistic orientation predict well self-rated proficiency. Sociolinguistic orientation weakly predicts the Semantic/same scores, and psychological orientation predicts moderately the Semantic/different scores. Finally, the level of ethnic density is not a significant direct predictor of any of the L2 proficiency indices.

#### *Using Path Models to Answer the Third Research Question*

In this sample, the level of Chinese ethnic density of an environment accounted for differences in the level of psychological and sociolinguistic orientation of the participants. However, ethnic density did not help to predict directly L2 proficiency, but both indices of acculturation did. These results suggest that acculturation may play the role of a mediator between the ethnic density of the environment and the proficiency in L2. In order to test the mediation role of acculturation, a path analytical model was

postulated. This analysis was based on the assumption that the level of ethnic density influences the acculturation of the participants, which in turn predicts L2 proficiency of the participants. The path diagram is depicted in Figure 2. This path analytical model also allowed the possibility that the level of ethnic density might influence directly L2 proficiency. For this path-analysis, acculturation was considered as a latent variable having two observed variables: the psychological orientation score and the sociolinguistic orientation score.

Figure 2. Path Model for the relationships Among Chinese Ethnic Density, Acculturation, and L2 Language Proficiency



The same path model was run separately for each one of the three measures of L2 proficiency. First, the model was fitted to all the participants in the sample, regardless of place of birth. Amos 5.0 (Arbuckle, 2003) was used to fit the path model. The model fit for each one the three measures of proficiency are given in the table below.

Table 10

Summary of the Path Model for the Three L2 Proficiency Tests

	Self-Rated	Semantic/ Same	Semantic/ Different
$X^2$	.607	.498	.075
df	1	1	1
p	.436	.480	.784
$\beta_1$	-.24	-.25	-.26
p	.019	.026	.014
$\beta_2$	.82	.32	.58
p	<.001	.005	<.001
$\beta_3$	.16	.09	.05
p	.022	.327	.529

All three models were appropriately fit for the data. As observed before, the paths connecting the ethnic density of the environment to acculturation ( $\beta_1$ ), and acculturation to L2 proficiency ( $\beta_2$ ) were significantly different than zero. Thus, acculturation can be considered as mediating the influence of the ethnic environment on the three measures of

L2 proficiency. In addition, ethnic density showed a significant contribution in predicting self-rated L2 proficiency.

The path coefficients showed that the higher the Chinese density is, the lower the level of acculturation is. On the other hand, the higher the level of acculturation is, the higher the L2 proficiency is. The significant coefficient for the path between ethnic density and self-rated language proficiency indicated that the high-ethnic-density group rated themselves higher in self-rated English proficiency than the low-ethnic-density group. This may have been due to participants in the high-ethnic-density group rating their English proficiency in comparison to other ethnic Chinese who lived in their high-ethnic-density environment. Meanwhile, participants in the low-ethnic-density group might have compared their own English proficiency against that of native-English speakers who lived in their environment.

The path model in Figure 2 was originally fitted using data from all the participants, regardless of place of birth. However, for each of those groups the connections among the three variables in the path model might vary due to their peculiar circumstances. For example, native-born participants might develop a perfect native pronunciation in English, regardless of the degree of ethnic density of their environments. Therefore, their English proficiency will be independent of the ethnic density and of the psychological and sociolinguistic orientations that their environment might produce. However, acculturation would still depend on the ethnic density of the environment. On the other hand, foreign-born participants, including recent as well as old arrivals, might be more influenced by the ethnic density of their environment and by their adoption of the mores of their new homeland. Thus, the path model was used separately for native-

born and foreign-born participants. The results for the native-born group in the three measures of proficiency are given in Table 11 below.

Table 11

Summary of the Path Model for the Three L2 Proficiency Tests (Native-born)

	Self-Rated	Semantic/ Same	Semantic/ Different
$X^2$	.771	.044	.109
df	1	1	1
p	.379	.834	.741
$\beta_1$	-.59	-.20	-.59
p	.007	.179	.005
$\beta_2$	.26	.28	.79
p	.448	.30	.182
$\beta_3$	.41	.18	.35
p	.089	.129	.347

For the native-born group, the level of ethnic density significantly predicted acculturation when the measure of L2 proficiency is self-rated proficiency or the semantic/different test, suggesting that Chinese native-born adolescents in the low-ethnic-density group are more acculturated than their counterparts in the high-ethnic-density



group. However, neither acculturation nor ethnic density predicted any of the L2 proficiency indices. This finding makes sense because it is natural that native-born individuals, whether they are from ethnic Chinese, or Italian, or Mexican backgrounds, are usually proficient in L2 almost to the same degree. The results for the foreign-born participants are given in table 12 below.

Table 12

Summary of the Path Model for the Three L2 Proficiency Tests (Foreign-born)

	Self-Rated	Semantic Same	Semantic Different
$X^2$	.282	.044	.399
df	1	1	1
p	.596	.834	.527
$\beta_1$	-.21	-.20	-.20
p	.115	.179	.129
$\beta_2$	.83	.28	.51
p	< .001	.030	< .001
$\beta_3$	.05	.18	.03
p	.564	.127	.802

For the foreign-born participants, the level of ethnic density in their environment did not predict acculturation or L2 proficiency. However, acculturation significantly predicted L2 proficiency. These findings suggested that Chinese foreign-born respondents both in high- and in low-ethnic-density environments were similarly acculturated psychologically and engaged in similar amounts of L2 use, and they were similarly proficient in English. But the more acculturated they were, the more proficient they were in English no matter what environment they lived in.

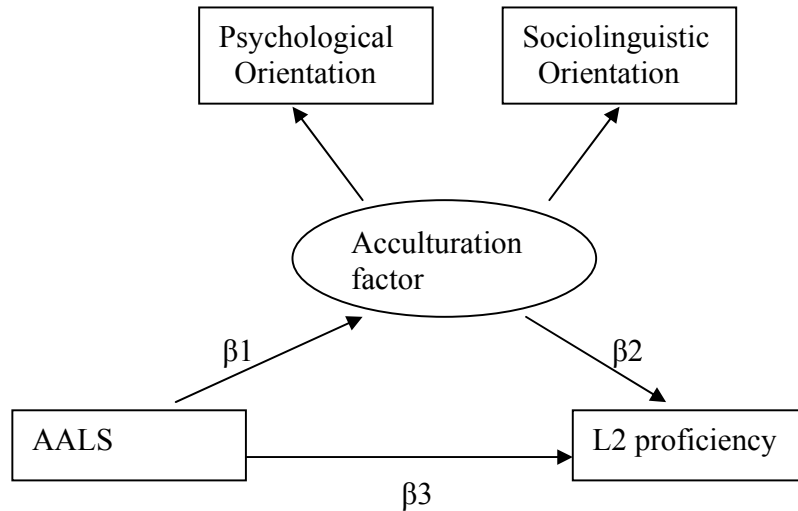
In short, the above results indicated that for all participants the level of Chinese ethnic density within a location could predict acculturation, which in turn could predict L2 proficiency; but ethnic density could not directly predict L2 proficiency. For native-born participants acculturation could not predict language proficiency. But for foreign-borns the more acculturated the participants are, the more proficient they are in English. In other words, differential acculturation status might have caused differential L2 proficiency for foreign-born participants. Therefore, the answers to the third research question could be: Different Chinese ethnic densities could not directly predict differential English language proficiency while different acculturation levels could directly predict English language proficiency among ethnic Chinese adolescents.

#### *Answering the Fourth Research Question*

The fourth research question was “What are the relationships among age of arrival, length of stay, acculturation, and L2 proficiency with regard to ethnic Chinese adolescent participants in these two cities?” It is well known that the earlier the age of arrival and/or the longer the stay in an English speaking environment, the greater the level of acculturation will be and the better the proficiency in English will be (Kuo and Roysircar,

2004). Thus, a sensible path model will look like the one in Figure 3. In this proposed model, the Age of Arrival-Length of Stay variable (AALS) predicts the acculturation factor, which in turn predicts L2 proficiency.

Figure 3. Hypothesized Path Model for AALS, Acculturation, and L2 Proficiency



The fit of this model for each one of the three L2 proficiency variables is presented in Table 13 below:

Table 13

Summary of the Model Testing for AALS, Acculturation, and L2 Proficiency

	Self-Rated	Semantic/ Same	Semantic/ Different
X <sup>2</sup>	.05	.01	1.63
df	1	1	1
p	.828	.930	.201

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$\beta_1$	.77	.76	.77
p	< .001	< .001	< .001
$\beta_2$	.58	.33	.53
p	< .001	.069	.005
$\beta_3$	.25	-.05	.02
p	.060	.763	.917

---

These results indicated that AALS, or the combined effect of age of arrival and length of stay, predicts acculturation, which in turn predicted L2 proficiency when L2 proficiency is measured as self-rated proficiency or Semantic/different scores. Although AALS did not predict the Semantic/same scores, its p-value was close to the .05 cutting point. In similar fashion, the path connecting directly AALS to self-rated proficiency had a p-value of .06 that suggested a possible direct effect of AALS.

In the path diagram in Figure 2 we found that the impact of the ethnic density of the environment on the L2 proficiency may be mediated by acculturation. We can assess the impact of the ethnic density in the path diagram in Figure 3 by fitting this model separately to the two ethnic-density groups. The results of fitting the model to the high-ethnic-density group and the low-ethnic-density group are given in Tables 14 and 15 below.

Table 14

Summary of the Model Testing for High-Ethnic-Density Group

	Self-Rated	Semantic/ Same	Semantic/ Different
$X^2$	1.86	.259	1.06
df	1	1	1
p	.172	.611	.304
$\beta_1$	.73	.70	.72
p	< .001	< .001	< .001
$\beta_2$	.34	.17	.33
p	< .001	.069	.136
$\beta_3$	.53	-.11	.09
p	< .001	.559	.666

Table 15

Summary of the Model Testing for Low-Ethnic-Density Group

	Self-Rated	Semantic/ Same	Semantic/ Different
X <sup>2</sup>	.419	.016	.230
df	1	1	1
p	.517	.899	.631
$\beta_1$	.81	.82	.83
p	< .001	< .001	< .001
$\beta_2$	.98	.61	.79
p	.005	.082	.038
$\beta_3$	-.16	-.11	-.13
p	.57	.716	.686

In both groups AALS predicted the acculturation factor for all three L2 proficiency measures. Also, in both groups acculturation predicted self-rated proficiency. However, the two groups differed in the way that acculturation predicted the semantic/different scores. Acculturation did not predict the semantic/different scores in the high-ethnic-density group, but it did in the low-ethnic-density group. This means that

the more acculturated into the L2 community the Chinese adolescent participants in the low-ethnic-density group were, the more similar their mental lexicon was to the one of the native-English speakers. This phenomenon might have been due to the Chinese adolescent respondents in the low-ethnic-density group interacting with each other more frequently in English, or interacting more frequently with native-English speakers. Nevertheless, a larger sample needs to be employed in future research involving the use of the same instruments since the two different ethnic-density groups in the current study did not differ in the way that acculturation predicted the semantic/same scores.

On the other hand, AALS did predict the self-rated proficiency score in the high-ethnic-density group, but it did not in the low-ethnic-density group. A tentative explanation for this discrepancy in the self-rated proficiency scores between the two different ethnic-density groups is proposed: Since Chinese adolescent participants in the high-ethnic-density group had more opportunities to interact with other ethnic Chinese in their environment than their counterparts in the low-ethnic-density group, the effect of the acculturation factor in terms of psychological and sociolinguistic orientations on these Chinese adolescent participants was not strong enough to cancel out the effect of AALS as was the case for the acculturation factor in Chinese adolescent participants in the low-ethnic-density group.

## CHAPTER FIVE: DISCUSSION

### Introduction

The present study examined the relationship between Chinese adolescents' acculturation and L2 proficiency when taking ethnic Chinese density in the population, age of arrival, and length of stay into account. The study was conducted in two cities in North America with different levels of ethnic Chinese density. Four research questions were addressed: (1) Are there any differences in the perception of their environments between ethnic Chinese adolescents living in cities with different concentrations of ethnic Chinese populations? (2) Are there any differences in terms of acculturation between ethnic Chinese adolescents living in environments with different levels of Chinese ethnic densities? (3) Do different Chinese ethnic densities and/or different acculturation levels predict differential English language proficiency among ethnic Chinese adolescents? (4) What are the relationships among age of arrival, length of stay, acculturation, and L2 language proficiency with regard to ethnic Chinese adolescent participants in these two cities?

### Answers to the First Research Question

In terms of the first research question, significant differences were found in the respondents' perceptions of the ethnic environment where they resided. The ethnic Chinese adolescents in Vancouver believed that they had more exposure and more access to resources that reflect the Chinese culture. For example, they reported having more



peers in school and more neighbors in their community whose first language was Chinese; therefore the potential for interaction in Chinese is greater. Furthermore, they attended schools where more teachers are from ethnic Chinese backgrounds and where they had greater access to Chinese media. These factors may have created an environment that adversely affected the acculturation process especially for the older foreign-born immigrants by providing them with conditions conducive to maintaining their native language and ethnic identity.

On the other hand, the ethnic Chinese adolescents in Atlanta reported fewer Chinese peers and teachers in their schools and less access to Chinese media. With fewer opportunities to maintain their ethnic identity and native language, they might have been more likely to integrate into the mainstream culture, which in turn might have accelerated the acculturation process.

#### Answers to the Second Research Question

Speaking to the second research question, the findings suggest that as far as ethnic Chinese adolescents are concerned, differential levels of ethnic population density can result in differential levels of acculturation in terms of psychological and sociolinguistic orientations. That is, ethnic Chinese adolescent respondents in the low ethnic-density environment are more likely to identify themselves with the mainstream culture. For example, they reported themselves as sharing values and beliefs that were more compatible with the mainstream culture, knowing more about the history, traditions, and customs of the host country, feeling more confident as to how to act in the mainstream culture, and being more inclined to think that people in the L2 community best understand their ideas and ways of thinking. In addition, ethnic Chinese adolescent

respondents in the low ethnic-density environment tended to use English more frequently both inside and outside school. For example, they rated themselves as being more likely to listen to English radio programs, watch English TV programs, read English newspapers, books, and magazines; and were more inclined to visit English websites.

Meanwhile, the findings also revealed that the combined effect of age of arrival and length of stay could significantly differentiate ethnic Chinese adolescent respondents in reference to the two dimensions of acculturation. Specifically, among the four groups of ethnic Chinese adolescent respondents classified on the criteria made in the data analysis, the ethnic Chinese respondents in the older recent arrival group had significantly lower ratings in terms of their psychological and sociolinguistic orientations indices toward the L2 community than the other three groups of ethnic Chinese adolescent respondents, while no significant differences were found among respondents in the other three groups.

These findings are easy to interpret since ethnic Chinese adolescents who mainly interact with L2-speaking peers either inside or outside school and who live in an environment with dominating L2 media or mainstream social activities will definitely feel less willing to identify themselves with the Chinese culture and will certainly feel it more necessary to use and practice L2. On the other hand, it is quite understandable that for those Chinese adolescent immigrants who arrived in North America at a later age and who have stayed here for a very short period of time, unfavorable social and school environments might have prevented them from identifying with the mainstream culture and from trying to learn and use L2.

### Answers to the Third Research Question

In reference to the third research question, this study with results based on both the multiple regression analysis and the path model reveals interesting findings. First, though results from path model suggested that when acculturation was involved, Chinese adolescent respondents living in high-ethnic density environment tended to self-rate their English proficiency higher than that of Chinese adolescent respondents living in the low-ethnic density environment, results from ANOVA and multiple regression indicated that ethnic density could not be regarded as a significantly direct predictor of English proficiency as far as the ethnic Chinese adolescent respondents in the present study is concerned. This finding is not surprising since it may be bizarre to say that Chinese adolescents living in some areas of New York or in Los Angeles where there is an almost similar density of the Chinese population as that of Vancouver are less proficient in English than their counterparts living in Atlanta.

Second, acculturation did predict language proficiency. In addition, in terms of the predictive strength of the two dimensions of the acculturation factor, sociolinguistic orientation was the better predictor of L2 proficiency in comparison to psychological orientation. That is to say, using English frequently in daily activities was more important than identifying oneself as a member of the L2 community in predicting L2 proficiency.

These two findings suggested that the environmental factor is not the decisive factor in determining L2 proficiency of immigrant students; instead, encouraging and providing opportunities for L2 speakers to acculturate both psychologically and sociolinguistically into the L2 community is the most important factor in helping L2 speakers to improve and attain a high level of L2 proficiency. That is, the better the L2

speakers identify themselves with the L2 community, and the more frequently L2 speakers use English in any circumstances, the better their L2 proficiency will finally become.

Third, for native-born ethnic Chinese respondents, population density significantly predicts the acculturation factor while neither the acculturation factor nor population density predicted L2 proficiency. These findings suggested that even for native-borns, the number of Chinese peers inside and outside the school, the density of Chinese neighbors in their community, and whether or not they have access to Chinese or English media determine their acculturation status.

With regard to the results that neither acculturation nor ethnic population density predicted language proficiency for these native-borns, it is quite probable that native-borns, whether they were born in a low ethnic population density or in a high ethnic population density, have to learn and use English whenever they are at school as long as the schools they are attending are required to conduct instruction in English. In this case, it is natural that these native-borns are similar in English proficiency wherever they live.

Fourth, although foreign-born ethnic Chinese adolescent respondents in the present study showed lower levels of acculturation compared to their native-born counterparts, population density still could not predict acculturation for foreign-born adolescent respondents. That is, regardless of the ethnic population density of their environment, these foreign-borns were similarly acculturated with regard to psychological and sociolinguistic orientations.

The reason why no significant differences in acculturation between the two environments with different ethnic population densities were found for foreign-borns in

the present study might well be that even though these ethnic Chinese immigrant respondents live in environments with two differential levels of ethnic population density, they possess similar psychosocial adjustment problems when plunged suddenly into a totally alien environment (Florsheim, 1997). In addition, unfavorable social experiences with the L2 community may inadvertently force these Chinese immigrant adolescents to seek friendship from other Chinese immigrant peers either inside school (Zhou, Peverly, Xin, Huang, & Wang, 2003) or from neighbors of the same ethnicity (Schnittker, 2002).

#### Answers to the Fourth Research Question

With regard to results obtained for answering the fourth question, the present study's results suggested that when the acculturation factor was involved, the combined effect of age of arrival and length of stay could not predict L2 proficiency. That is, even though L2 speakers arrived in North America very early and stayed here very long, if they did not acculturate themselves psychologically or sociolinguistically, their English proficiency could not be improved significantly. In other words, they could only improve their English proficiency by becoming identified with the L2 community psychologically and by engaging in frequent L2 use both inside and outside school settings.

This finding provided converging evidence to the study by Valdés (1998), in which the two contrasting cases of Lilian and Elisa suggested that age of arrival and length of stay could not predict L2 proficiency while acculturation in terms of psychological orientation and sociolinguistic orientation towards the L2 community could. According to her study, both Lilian and Elisa arrived in the United States approximately around the same age and have stayed in the United States for almost the same amount of time, but the two girls differed significantly in the extent of English

proficiency two years later when Valdés finished her case study of the two girls. As a result, Elisa, due to her eagerness to identify with the L2 community and her frequent use and practice of L2, was quite proficient in English while, Lilian, who not only refused to adopt the values and beliefs of the mainstream culture, but also avoided learning and using L2 whenever possible, still remained at a low proficiency level in English.

Part of the results for answering the fourth research question suggested that ethnic population density might play an indirect role in predicting L2 proficiency. In this study, the combined effect of age of arrival and length of stay significantly predicted L2 proficiency only for high-density ethnic Chinese adolescent respondents. This new finding, if generalizable to other Chinese adolescent populations, might be interpreted as an indicator that the acculturation factor both in terms of psychological and sociolinguistic orientations towards the L2 community, and demographic factors such as age of arrival and length of stay are equally important in improving L2 proficiency of ethnic Chinese adolescents in areas with high ethnic density population. On the other hand, in areas with a low ethnic population, high levels of psychological and sociolinguistic orientations towards the L2 community are critical factors in improving the English proficiency of Chinese adolescents. Of course, further empirical studies involving similar variables are needed for the validation of the assumption originating from this finding in the present study.

#### Implications

The results of this research provide empirically justifiable implications for acculturation studies both in cross-cultural psychology and in SLA, and for ESL teaching and program designing. It is especially important that ESL researchers, educators,

counselors, program developers, and administrators understand the relationships among L1-speaking population density, the two dimensions of the acculturation factor: psychological and sociolinguistic orientations, age of arrival, length of stay, and the development of L2 proficiency. They may also need to make sure that a favorable psychological and sociolinguistic environment is provided to L2 learners which will encourage as much contact as possible with the target language, the L2 culture, and the L2 community, so that these L2 students will have a desire to acculturate themselves into the L2 culture and community both psychologically and sociolinguistically.

With this awareness, these professionals can provide more appropriate psychological, sociological, and educational services for the promotion of the psychological acculturation and language proficiency of immigrant L2 adolescents. Gradually, L2 students may be motivated to learn and use the L2 at social occasions, thereby developing their L2 proficiency to a higher level, until they reach the optimal level where they can not only communicate freely with members of the L2 community but also regard themselves as an integral member of the mainstream culture.

Other specific implications of the present study for cross-cultural and SLA researchers and particularly for ESL researchers, educators, counselors, program developers, and administrators are discussed as follows:

First, L1 population density may indeed affect the degree to which Chinese adolescent L2 speakers acculturate themselves psychologically and sociolinguistically. That is, in an environment with a dense L1-speaking population, Chinese adolescents may have a preference to interact with peers who are of Chinese ethnicity. When it comes to Chinese immigrant adolescents who have arrived in the target language country at a

later age and who have stayed there for a shorter period of time, their identification with the values, beliefs, habits, behaviors and cultural systems of the target language community may remain low (Tsai, Ying, & Lee, 2000), and Chinese may still be the dominant language for interaction and communication even though they are living in the target language community (Jia & Aaronson, 2003).

Second, no matter what geographical locations foreign-born immigrant adolescents are living in, the best way for the parents and ESL educators to improve the English proficiency of immigrant adolescents is to encourage and provide them with opportunities to interact socially and psychologically with the L2 community so that these immigrant adolescents have both integrative motivations (Gardner, 1985) and social opportunities to use and practice their English, whether they live in Vancouver, Los Angeles, Santa Fe, or Raleigh.

Third, some L2 immigrant adolescents, although they have stayed in an English-speaking environment for quite some time, still have no signs of improvement in their L2 proficiency development. This was the case for Lilian in the study by Valdés (1998). Therefore, ESL researchers, educators, counselors, and administrators should try to help and provide opportunities to involve those reluctant L2 students in more L2 community-related activities, so that these reluctant L2 students will have more experience with the cultural activities, beliefs, values, and history of the L2 community. In this way, these L2 students will feel comfortable and confident interacting with people of the L2 community, will get to know what is expected of a person in various situations in the L2 community, and will finally become acculturated into the L2 community by regarding themselves as an integral part of the L2 community.



Fourth, older immigrant adolescents might have very strong ethnic identity (Tsai, Ying, & Lee, 2000) and L1 dominance (Jia & Aaronson, 2003), which might prevent them from becoming totally acculturated into the dominant society psychologically (Phinney, 1990) and/or sociolinguistically (Laroche, Kim, Hui, & Tomiuk, 1998), even if they are living in an environment with a low L1-speaking population. In this case, ESL school teachers, counselors, program developers, and administrators should not discourage these older adolescents from maintaining their ethnic identity and from using their L1 (Díaz-Rico, 2004). Instead, they should try to help older immigrant adolescents get through cultural and psychological shocks while helping them improve their English proficiency so that a favorable social and psychological environment is created where these older immigrant adolescents can study, live, and work comfortably.

Fifth, the finding in the present study that sociolinguistic orientation is more powerful and more instrumental in predicting the development of L2 proficiency is also of practical significance to ESL researchers, educators, counselors, program developers, and administrators. That is, in order to help those L2 speakers who are reluctant to acculturate themselves into the L2 community psychologically improve their English proficiency, parents and ESL teachers should encourage these L2 speakers to use and practice L2 both inside and outside classrooms and provide opportunities such as sheltered courses in classrooms for those L2 speakers to use and practice L2. And these reluctant immigrant adolescents, as long as they have reached a certain level of English proficiency good enough to communicate with native-English speakers, should be provided with more opportunities to interact with the L2 community. In this way, these

reluctant L2 immigrant adolescents can at least acculturate themselves sociolinguistically and may have no great difficulty surviving in the L2-speaking country.

Finally, the results of the present study indicate that when taking the factor of acculturation into consideration, the combined effect of age of arrival and length of stay becomes a non-significant factor in predicting the development of L2 proficiency regardless of L1 population density or of an environment with a low L1-speaking population density. These results also provide ESL researchers, educators, counselors, program developers, and administrators an important implication; that is, even for postpubescent L2 immigrant adolescents who arrive in the target language country after the offset of the putative Critical Period (Lenneberg, 1967), they may still achieve a high level of L2 that is comparable to the proficiency achieved by prepubescent L2 speakers (Ioup, Boustagui, Tigi, & Moselle, 1994) as long as those postpubescent L2 speakers actively engage in acculturating themselves into the L2 community, especially sociolinguistically.

#### Limitations

There are several limitations in terms of sampling and methodological considerations to this research which should be brought to the attention of readers. This sample consisted of only Chinese adolescent respondents recruited through churches run by Chinese pastors in the United States and Canada. Sampling of these ethnic Chinese adolescent groups was determined by the researcher's interests and knowledge in related research literature, availability of funding, number of subjects needed to validate the methodological tools, and the availability of American and Canadian churches who were willing to participate in this study. In this case, research findings and implications are

only limited to populations of the same ethnic group, as random sampling of the subjects was impossible due to limited number of subjects.

Therefore, the researcher proposes the following: 1) Future research should be conducted to compare Asian adolescent groups of other ethnicity or even ethnic adolescent groups of non-Asian origin. 2) Due to the small number of foreign-borns in the sample, generalizations based on age of arrival and length of stay should be treated with caution. 3) The exclusion of the Grammaticality Judgment Test from data analysis due to reliability concerns made it impossible to use this widely-acknowledged L2 proficiency test in the present study to differentiate the L2 proficiency levels of Chinese adolescent respondents living in environments with different ethnic population densities. As a result, the findings on the relationship between population density and L2 proficiency failed to be confirmed with a valid L2 proficiency test. 4) There may be extraneous factors that affected L2 learning motivation and L2 learning behaviors of immigrant adolescents in the two cities. For example, in the United States, most colleges and universities do not require immigrant students to submit TOEFL scores for admission application; on the other hand, most Canadian colleges and universities require that foreign-born immigrants have passing scores in the TOEFL examination before being admitted into undergraduate programs. As a result, in order to familiarize themselves with English grammatical structure, Canadian immigrant adolescents have to expend more time and effort in learning English grammar than their counterparts in the United States. This phenomenon might provide explanation as to why Chinese adolescents in the United States provided random answers to questions in the Grammaticality Judgment Test in the present study.

## Conclusion

Combined together, empirical findings in this study indicate that the relationship between acculturation and L2 proficiency involves the dynamic interactions of multiple variables. On the other hand, results obtained in the present study demand converging evidence in future acculturation studies so that concepts, models, and parameters involved in this study can be substantiated with more empirical results. The author of the present study hopes that building upon results from this study more experiments in the future concentrating on the relationship between acculturation and L2 proficiency will be implemented, especially in the field of SLA, so that ESL researchers, educators, counselor, program developers, and administrators will expand their horizons and choices in the implementation of more meaningful, non-instructional means for promoting the development of L2 proficiency in their immigrant students.

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## APPENDICES

APPENDIX A  
SURVEY FOR THE RESEARCH PROJECT:

**Dear student:**

**Thanks very much for helping me in completing my doctoral dissertation by completing the survey. Please give your answers truthfully. You do NOT need to write your name on the paper.**

**Part I.**

**Please check or fill in numbers:**

I am a male ( )/female ( ). I am \_\_\_ years old now.

1. At home, I speak  
\_\_\_\_ mostly in Chinese.  
\_\_\_\_ mostly in English.  
\_\_\_\_ equally in Chinese and in English.
2. I was \_\_\_ years old when I first arrived in the United States/Canada.  
Or: I was born in the US/Canada \_\_\_\_\_
3. Write the year when your parents arrived in the US/Canada if you know it.  
\_\_\_\_\_
4. Did you attend school in China or Taiwan or Hong Kong?  
Yes \_\_\_\_\_ No \_\_\_\_\_, I was born in the US/Canada \_\_\_\_\_.
5. If you attended school in China or Taiwan or Hong Kong, how many years did you attend? \_\_\_\_\_. I was born in the US/Canada \_\_\_\_\_
6. In what grade did you enter school when you arrived in the United States/Canada?  
Grade \_\_\_\_\_. I was born in the US/Canada \_\_\_\_\_.
7. What grade are you in now? Grade \_\_\_\_\_
8. My last semester's English grade was:  
\_\_\_ D  
\_\_\_ C  
\_\_\_ B  
\_\_\_ A
9. My estimated English grade this semester might be:  
\_\_\_ D  
\_\_\_ C  
\_\_\_ B  
\_\_\_ A

**Part II**

**Please check or fill in numbers:**

1. The school I am now attending is  
 public  
 private - religious  
 private – not religious
  
2. My school is located in a neighborhood that is  
 mostly Chinese.  
 mostly American/Canadian.  
 all American/Canadian except my family.  
 an equal amount of Chinese and American/Canadian.  
 I don't know.
  
3. My school offers classes in Chinese. Yes  No
  
4. My school offers classes in other languages besides English or Chinese.  
Yes  No
  
5. My school has  
 mostly Chinese students.  
 mostly American/Canadian students.  
 an equal amount of Chinese and American/Canadian students.
  
6. How many students are in your class? \_\_\_\_\_
  
7. As far as I know, there are \_\_\_\_\_ Chinese students in my class or classes.  
 0-5  
 6-10  
 11 or more  
 I don't know
  
8. How many students are in your entire school? \_\_\_\_\_.
  
9. As far as I know, there are \_\_\_\_\_ Chinese students in my entire school.  
 0-5  
 6-10  
 11 or more  
 I don't know
  
10. Are there teachers in your school that are Chinese, or from Chinese background?  
Yes  No
  
11. At school, I have  
 primarily Chinese friends.  
 primarily American/Canadian friends.  
 an equal amount of Chinese and American/Canadian friends.

12. After school, I have  
 \_\_\_\_\_ primarily Chinese friends.  
 \_\_\_\_\_ primarily American/Canadian friends.  
 \_\_\_\_\_ an equal amount of Chinese and American/Canadian friends.
13. As far as I know, the neighborhood where my family lives is  
 \_\_\_\_\_ mostly Chinese.  
 \_\_\_\_\_ mostly American/Canadian.  
 \_\_\_\_\_ all American/Canadian except my family.  
 \_\_\_\_\_ an equal amount of Chinese and American/Canadian.  
 \_\_\_\_\_ I don't know
14. At home can you receive TV transmissions or programs in Chinese?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
15. At home can you receive radio stations or at least radio programs in Chinese?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
16. In your neighborhood, can people rent or buy movies or programs in Chinese?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
17. In your neighborhood, can people buy Chinese books, magazines or newspapers?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
18. In your neighborhood, can people buy CDs in Chinese?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
19. At home, can you read or listen to Chinese media through the internet?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
20. My father's occupation is \_\_\_\_\_ (if unemployed, please write down **no occupation**).
21. My mother's occupation is \_\_\_\_\_ (if unemployed, please write down **no occupation**).
22. My father's highest educational level is  
 \_\_\_ (1) elementary 0—5  
 \_\_\_ (2) 6 — 8  
 \_\_\_ (3) 9 —12  
 \_\_\_ (4) 1 — 2 years of college  
 \_\_\_ (5) 3 — 4 years of college  
 \_\_\_ (6) Master's degree  
 \_\_\_ (7) Doctor's/professional degree
23. My mother's highest educational level is



- \_\_\_ (1) elementary 0—5
- \_\_\_ (2) 6 — 8
- \_\_\_ (3) 9 —12
- \_\_\_ (4) 1 — 2 years of college
- \_\_\_ (5) 3 — 4 years of college
- \_\_\_ (6) Master's degree
- \_\_\_ (7) Doctor's/professional degree

**Part III.**

**Please use the following scale to indicate how often you speak English in the following situations. Give a number that best applies to you.**

(For example, if you **frequently** speak English at home, you may give a number like: **When I am at home, I 3 speak English**).

- |       |        |            |        |
|-------|--------|------------|--------|
| 1     | 2      | 3          | 4      |
| never | seldom | frequently | always |

- (1) When I am at school, I \_\_\_ speak English.
- (2) When I am at home, I \_\_\_ speak English.
- (3) When I am out to play with my friends, I \_\_\_\_\_ speak English.
- (4) When I talk with people at stores or on the street, I \_\_\_\_\_ speak English.
- (5) When it comes to listening to radios, I \_\_\_\_\_ listen to English radios.
- (6) When it comes to watching TV programs, I \_\_\_\_\_ watch English TV programs.
- (7) When it comes to going to see the movies, I \_\_\_\_\_ go to the English movies.
- (8) When it comes to reading newspapers and magazines, I \_\_\_\_\_ read English newspapers and magazines.
- (9) When it comes to surfing the Internet, I \_\_\_\_\_ visit the English websites.
- (10) When it comes to reading books, I \_\_\_\_\_ read English books.

**Part IV.**

Please rate your English proficiency level by writing in the boxes a number that best applies to you (**for example, if you think that you can speak English almost as fluently as a native English speaker, you may write 8 in the box**).

- |                            |                          |                  |                                 |                      |
|----------------------------|--------------------------|------------------|---------------------------------|----------------------|
| 1                          | 2                        | 3                | 4                               | 5                    |
| <b>not well<br/>at all</b> | <b>not very<br/>well</b> | <b>very well</b> | <b>almost<br/>like a native</b> | <b>like a native</b> |

- (1) How well can you speak English? ----- ( )
- (2) How well can you understand English when you  
read English newspapers, magazines, and books? ----- ( )
- (3) How well can you understand English when  
you watch English movies and TV programs? ----- ( )
- (4) How well can you write in English? ----- ( )

**Part V.**

**Please answer the following questions by writing in the following boxes a number that best applies to you.**

(Please not that **American/Canadian** means native-born American/Canadian people, whether they are European American/Canadian or Asian American/Canadian)

1	2	3	4	5
Only Chinese		Both Chinese and American/ Canadian		Only American/ Canadian

- (1). With which group(s) of people do you feel you share most of your beliefs and values? ----- ( )
- (2). With which group(s) of people do you feel you have the most in common? ----- ( )
- (3). With which group(s) of people do you feel the most comfortable? ----- ( )
- (4). In your opinion, which groups(s) of people best understand your ideas (your ways of thinking)? ----- ( )
- (5). Which culture(s) do you feel proud to be part of? ----- ( )
- (6). In which culture(s) do you know how things are done and feel that you can do tem easily? ----- ( )
- (7). In which culture(s) do you feel confident that you know how to act? ----- ( )
- (8). In your opinion, which groups(s) of people do you understand best? ----- ( )
- (9). In which culture(s) do you know what is expected of a person in various situations? ----- ( )
- (10). Which culture(s) do you know the most about the history, traditions, customs, and so forth? ----- ( )

APPENDIX B  
GRAMMATICALITY JUDGMENT TEST

**Please indicate if the following sentences are correct or incorrect. If you think one sentence is incorrect, please rewrite the incorrect one.**

For example:

*This boy is reading a newspaper last night.* ( ) correct ( x ) incorrect.

*If this sentence is incorrect, the correct one is:*

*This boy was reading a newspaper last night.*

**Please note that not every sentence is incorrect. If one sentence is correct, you do not have to rewrite it.**

1. Many houses were destroyed by the flood last month. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

2. I bought the book at the half price. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

3. How I wish I had his twice strength. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

4. Three boys played on the swings in the park. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

5. The man looked the new cars yesterday over. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

6. My mother tells me a story every night. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

7. When you think will the plane arrive? ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

8. What reward should he who saved the boy's life get? ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

9. Who do you believe that won the prize? ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

10. I like ice cream a lot. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

11. He has finished his one-third homework. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:

\_\_\_\_\_

12. She reads very carefully the newspaper. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
13. I want to paint a big house. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
14. I hope you to leave my room right now. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
15. The girl that I gave the book to her is my sister. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
16. Both my books were left in the library. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
17. The little boy laughed the clown. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
18. Last night Mary walked to the store. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
19. The girls want feeding the dogs. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
20. Where did she put the newspaper? ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
21. John opens window for his family every morning. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
22. My all wages are paid monthly. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
23. There are flowers on every side of the street. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
24. Where are my shoes? ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
25. She has a lot of friends in France. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
26. His both parents are English teachers. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_

27. He is allowed watch TV two hours every night. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
28. Her mother turned in him to the police. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
29. Only half us arrived on time. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_
30. Tom drove his sisters to the cinema. ( ) correct ( ) incorrect.  
If this sentence is incorrect, the correct one is:  
\_\_\_\_\_

APPENDIX C  
SEMANTIC-RELATEDNESS JUDGMENT TEST

**Please indicate how related the meanings of the two words in pairs are by giving a number from 0 to 5.**

0 = the meanings of the words in the pair are totally different.

5 = the meanings of the words in the pair are exactly the same.

Examples: (1). Angry/displeased (4)

(2). Read/talk (0)

- (1). Ability/competence ( )
- (2). Anxious/worried ( )
- (3). Apology/regret ( )
- (4.) Advice/suggestion ( )
- (5). Behavior/action ( )
- (6). Believe/trust ( )
- (7). Find/discover ( )
- (8). Condition/situation ( )
- (9). Crop/harvest ( )
- (10). creation/invention ( )
- (11) Criteria/standard ( )
- (12). Compare/contrast ( )
- (13) Control/manipulate ( )
- (14). Day/date ( )
- (15). Discussion/debate ( )
- (16). Draw/paint ( )
- (17). Decrease/lower ( )
- (18). Expert/authority ( )
- (19). Element/component ( )
- (20). Enjoy/like ( )
- (21). Force/power ( )
- (22). Game/sport ( )
- (23). Glad/pleased ( )
- (24). Home/family ( )
- (25). Laugh/smile ( )
- (26). Look/watch ( )
- (27). Lend/borrow ( )
- (28). Real/true ( )
- (29). Possible/likely ( )



APPENDIX D  
CONSENT LETTER FORMS

PARENTAL CONSENT FORM FOR THE PARTICIPATION IN THE RESEARCH  
PROJECT: ACCULTURATION AND ACHIEVEMENT IN ENGLISH AMONG  
CHINESE IMMIGRANT ADOLESCENTS: A COMPARISON OF TWO  
POPULATIONS WHICH VARY IN THE DENSITY  
OF SPEAKERS OF CHINESE

Dear parent or guardian:

I am a Ph.D. candidate in the Department of Curriculum and Teaching, Auburn University, Alabama. Your child is cordially invited to participate in my doctoral research project on how acculturation predicts language achievement in Chinese adolescents in two different locations: the United States and Canada. Acculturation is defined as the psychological and social integration with the English-speaking community of the two countries. I selected your child for this research because your child is between 12 and 18 years old, and has a Chinese ethnic background. The church pastor has given me permission to conduct this research, and group results from this research will be provided to the church pastor about six months after your child participates in this research. You may have access to these results by contacting the pastor if your child has participated in this research project.

This research project has two parts: a survey, and a language achievement test. Your child will complete the survey by checking or circling answers to some statements or questions in the survey. The language achievement test will test your child's English language achievement.

Your child's name will not be required for completing the survey and taking the language achievement test, and participating in this project is absolutely voluntary. The specific church room and time to participate in this project at the church are written down at the end of this letter. If you agree to your child's participation in this project and think that the room and time are convenient for your child, you can sign this letter and ask your child to bring this letter to the researchers at the time of participation.

---

Parent's or Guardian's initials

Your child will spend a maximum of one hour completing the survey and the test at the church room. The church pastor will assign a representative to represent your child while your child is taking the survey and the language achievement test administered at the church room by me with the help of the church representative. In addition, as parent/guardian, you are invited to be present at the church room when your child is completing the survey and the test. After your child completes the survey and the test in the church room, he or she will be required to put them in an envelope provided to him or her and leave the envelope on a desk in the church room. I will collect all the envelopes after all participants leave the church room.

Please remember that if you do not want your child to participate in this project for any reason, please do not sign this letter. Even if you have signed this letter, you have the freedom to withdraw your child from participating in this research for any reason at any time before your child completes the survey and the language achievement test. But completed survey and tests may not be withdrawn since no name or identification will be included on the survey and in the language achievement test.

The results of this research will be published as my doctoral dissertation and in academic conference papers and in academic journals. No information identifying your child will be included in these publications.

According to regulations of Auburn University, your decision whether or not to let your child participate in my research project will not jeopardize your and your child's future relations with Auburn University or the Department of Curriculum and Teaching.

If you have any questions concerning this research project, please feel free to let me know, and I will be happy to answer them. If you have questions later, I will be happy to answer them at any time. You can contact me either by phone: (334) 821-2897 or e-mail: [duangui@auburn.edu](mailto:duangui@auburn.edu).

For more information regarding your child's rights as a research participant in my project, please contact the Office of Human Subjects Research of Auburn University by phone or e-mail. The people to contact there are Executive Director E.N. "Chip" Burson at (334) 844-5966 ([bursoen@auburn.edu](mailto:bursoen@auburn.edu)) or IRB Chair Dr. Peter Grandjean at (334) 844-1462 ([grandpw@auburn.edu](mailto:grandpw@auburn.edu)).

---

Parent's or Guardian's initials

**THANK YOU VERY MUCH FOR YOUR KIND ATTENTION.**

**HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH YOUR CHILD TO PARTICIPATE IN THIS RESEARCH PROJECT. YOUR SIGNATURE INDICATES YOUR WILLINGNES TO LET YOUR CHILD PARTICIPATE.**

**I am the parent or guardian of \_\_\_\_\_.** By signing this letter, I agree to let my child participate in this research. I understand that my child will spend up to an hour in completing a survey and a language achievement test in a church room and at a time agreed upon by my child. I understand that even after I have signed this letter, I have the freedom to withdraw my child from participating in the research for any reason at any time before he or she completes this survey and the test. I understand that I am invited to be present at the church room when my child is completing the survey and the test. I understand that my child may not keep the survey and language achievement test as his or her own whether my child has completed them or not because they are the property of the researcher and his doctoral committee members.

\_\_\_\_\_

Parent's or Guardian's Signature

Date

\_\_\_\_\_  
Investigator's Signature

Date

\_\_\_\_\_  
Print Name

Guiyong Duan

Print Name

**The church room and time for completing the survey and the language achievement test is as follows (pencils will be provided by the researcher):**

**Church room:** \_\_\_\_\_

**Time:** \_\_\_\_\_

## 父母同意其子女參加研究項目知情書：華裔少年的歸化 与英語成績：兩個華人人口密度差异之比較

尊敬的父母或監護人：

本人為美國阿拉巴馬州奧本大學課程與教學系的博士生。我現熱忱邀請貴子女參與我的博士研究項目。該項目用于研究居住在美國和加拿大的華裔少年歸化于英語成績之間的關係的。歸化的意思為從心理上和社交上與講英語的社會融為一體。我邀請貴子女參與我的博士研究項目是因為貴子女的年齡為12-18歲並是華裔。貴教堂的主任牧師已同意我進行該項研究，該項研究的結果將于大約6個月後提供給該主任牧師。如貴子女參與了該項研究，你可以通過貴教堂的主任牧師獲取該項研究的結果。

該項研究項目由兩部份組成：一個問卷調查和一個英語測試題。問卷調查只須貴子女在陳述句或疑問句前後選擇幾個答案中的一個即可，而英語測試題則是測試貴子女的英語成績。

參加問卷調查和英語測試並不需要貴子女暴露名字，並且，參加該項研究項目完全出于個人自願。，在教堂參加該項研究項目的具體時間和地點已寫在該信的末尾。如果你同意貴子女參加該項研究項目並認為時間和地點對貴子女也合適，你只要在該信上簽字便可，並告訴貴子女參加該項研究項目時交給調查者。

---

父母或監護人的草簽

Page 1 of 3

貴子女將花費一小時的時間在貴教堂裡參與該項研究。在貴子女在貴教堂裡做問卷調查和英語測試題時，貴教堂的主任牧師將指派一名教堂工作人員代表貴子女並協助我分發問卷調查和英語測試題。同時，您將被邀請出現在貴子女正在作問卷調查和英語測試題的教堂房間裡。在貴子女做完問卷調查和英語測試題後，他或她即可以將問卷調查和英語測試題放在一個信封裡，然後再把信封放在課桌上。在所有參加者做完問卷調查和英語測試題後，我將收回所有的問卷調查和英語測試題。

請記住，如果出于某種原因您不願意貴子女參加該項研究項目，就請不要在該信上簽字。即使您在該信上簽了名，只要您的子女還未做問卷調查和英語測試題，您就有權不需任何原因要求貴子女不要參加該項研究項目。但是，一旦做完問卷調查和英語測試題，就不能要求撤回，因為該問卷調查和英語測試題不需寫上名字或其他身份特征。

該項研究成果將以我的博士論文形式發表，抑或以會議論文形式或專業論文形式發表。發表時，貴子女的身份特征將不會包括進去。

根據奧本大學的規定，您是否同意貴子女參加該項研究項目不會威脅到您及貴子女與奧本大學或與課程與教學系之間的關係。

如果您對該項研究有任何問題，向我提問，我非常樂意回答它們。如果您以後有什麼問題，我非常樂意隨時回答它們。您可以用電話：(334) 821-2897 或電子郵件：[duangui@auburn.edu](mailto:duangui@auburn.edu) 與我取得聯繫。

您如想獲取更多貴子女作為該項研究的參與者的權利，請通過電話或電子郵件與奧本大學的人體受試者研究辦公室取得聯繫。您可以通過電話：(334) 844-5966 或電子郵件：[bursoen@auburn.edu](mailto:bursoen@auburn.edu) 與辦公室行政主任E.N. "Chip" Burson 取得聯繫，或通過電話：(334) 844-1462 或電子郵件：[grandpw@auburn.edu](mailto:grandpw@auburn.edu) 與機關審核委員會主任Peter Grandjean 取得聯繫。

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父母或監護人的草簽

Page 2 of 3

衷心謝謝你對此事的關心。

看完以上的內容後，您必須決定您是否希望貴子女參加該項研究項目，如您簽了字，這將表明您願意讓貴子女參加該項研究項目。

我是\_\_\_\_\_的父母或監護人。通過在該信上簽字，我同意我的孩子參加該項研究項目。據我所知，在教堂裡我的孩子將用一個小時的時間完成問卷調查和英語測試題。據我所知，即使我在該信上簽了名，只要我的子女還未做問卷調查和英語測試題，我就有權不需任何原因要求我的子女不要參加該項研究項目。據我所知，我將被邀請出現在我的子女正在作問卷調查和英語測試題的教堂房間裡。作據我所知，不管我的孩子做沒做完問卷調查和英語測試題，他或她都要將問卷調查和英語測試題上交，因為問卷調查和英語測試題是調查者和他的博士委員會成員的財產。

_____	_____	_____	_____
父母或監護人的簽名	日期	研究者的簽名	日期
_____		<u>Guiyong Duan</u>	
父母或監護人的姓名		研究者的姓名	

在教堂參加該項問卷調查和英語測試題的具體時間和地點如下(鉛筆將由調查者提供):

教堂房間號: \_\_\_\_\_

時間: \_\_\_\_\_

ASSENT CONSENT FORM FOR THE PARTICIPATION IN THE RESEARCH  
PROJECT: ACCULTURATION AND ACHIEVEMENT IN ENGLISH AMONG  
CHINESE IMMIGRANT ADOLESCENTS: A COMPARISON OF TWO  
POPULATIONS WHICH VARY IN THE DENSITY  
OF SPEAKERS OF CHINESE

Dear student who is between 12 and 18 years old:

I am a Ph.D. candidate in the Department of Curriculum and Teaching, Auburn University, Alabama. You are cordially invited to participate in my doctoral research project on how acculturation predicts language achievement in Chinese adolescents in two different locations: the United States and Canada. Acculturation is defined as the psychological and social integration with the English-speaking community of the two countries. I selected you for this research because you are between 12 and 18 years old and have a Chinese ethnic background. Your church pastor has given me permission to conduct this research, and group results from this research will be provided to your church pastor about six months after you participate in this research. You may have access to these results by contacting your church pastor if you have participated in this research project.

This research project has two parts: a survey, and a test. The survey will ask for information on your age, acculturation levels, and so on. The test will examine your English language achievement development.

Your name will not be required for completing the survey and taking the test. Participating in this project is absolutely voluntary. Since you are between 12 and 18 years old, even if you have decided to participate in this project, I will still have to get your parent or guardian's permission for you to participate.

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Participating student's initial



The specific church room and time to participate in this project at the church are written down at the end of this letter. If you agree to participate in this project and think that the room and time are convenient for you, you may sign this letter and bring both this letter and the letter signed by your parent or guardian to the researcher at the time of participation.

At the church, you will spend a maximum of one hour in completing the survey and the test. The church pastor will also assign a representative to represent you when you are taking the survey and the test administered at a church room by me with the help of the church representative. After you complete the survey and the test in the church room, please put them in an envelope provided to you and leave the envelope on a desk in the church room. I will collect all the envelopes after all participants leave the church room.

Please remember that if you do not want to participate in this project for any reason, please do not sign this letter. Even if you have signed this letter, you have the freedom to withdraw from participating in this research for any reason at any time before you complete the survey and the test. But completed survey and test may not be withdrawn since no name or identification will be included in the survey and in the test.

The results of this research will be published as my doctoral dissertation and in academic conference papers and academic journals. No information identifying you will be included in these publications.

According to regulations of Auburn University, your decision whether or not to participate in my research project will not jeopardize your future relations with Auburn University or the Department of Curriculum and Teaching.

If you have any questions concerning this research project, please feel free to let me know, and I will be happy to answer them. If you have questions later, I will be happy to answer them at any time. You can contact me either by phone: (334) 821-2897 or e-mail: [duangui@auburn.edu](mailto:duangui@auburn.edu).

For more information regarding your rights as a research participant in my project, please contact the Office of Human Subjects Research of Auburn University by phone or e-mail. The people to contact there are Executive Director E.N. "Chip" Burson at (334) 844-5966 ([bursoen@auburn.edu](mailto:bursoen@auburn.edu)) or IRB Chair Dr. Peter Grandjean at (334) 844-1462 ([grandpw@auburn.edu](mailto:grandpw@auburn.edu)).

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Participating student's initial

**THANK YOU VERY MUCH FOR YOUR KIND ATTENTION.**

**HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH PROJECT. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE**

**I am between 12 and 18 years old**, and I am willing to participate in this research. I understand that I will spend up to an hour in completing a survey and a test in a church room at a time agreed upon by me. I understand that even after I have signed this letter, I have the freedom to withdraw from participating in the research for any reason at any time before I complete this survey and the test. I understand that I may not keep the survey and language achievement test as my own no matter whether I have completed them or not because they are the property of the researcher and his doctoral committee members.

\_\_\_\_\_  
Participating Student's Signature      Date

\_\_\_\_\_  
Investigator's Signature  
Date

\_\_\_\_\_  
Print Name

Guiyong Duan  
Print Name

**The church room and time for completing the survey and the language achievement test is as follows (pencils will be provided by the researcher):**

**Church room:** \_\_\_\_\_

**Time:** \_\_\_\_\_

ASSENT CONSENT FORM FOR THE PARTICIPATION IN THE RESEARCH  
PROJECT: ACCULTURATION AND ACHIEVEMENT IN ENGLISH AMONG  
CHINESE IMMIGRANT ADOLESCENTS: A COMPARISON OF TWO  
POPULATIONS WHICH VARY IN THE DENSITY  
OF SPEAKERS OF CHINESE

Dear student who is 19 years old or older:

I am a Ph.D. candidate in the Department of Curriculum and Teaching, Auburn University, Alabama. You are cordially invited to participate in my doctoral research project on how acculturation predicts language achievement in Chinese adolescents in two different locations: the United States and Canada. Acculturation is defined as the psychological and social integration with the English-speaking community of the two countries. I selected you for this research because you are 19 years old or older and have a Chinese ethnic background. Your church pastor has given me permission to conduct this research, and group results from this research will be provided to your church pastor about six months after you participate in this research. You may have access to these results by contacting your church pastor if you have participated in this research project.

This research project has two parts: a survey, and a test. The survey will ask for information on your age, acculturation levels, and so on. The test will examine your English language achievement development.

Your name will not be required for completing the survey and taking the test. Participating in this project is absolutely voluntary, and it is absolutely up to you to decide whether or not to participate in this research project.

---

Participating student's initial

The specific church room and time to participate in this project at the church are written down at the end of this letter. If you agree to participate in this project and think that the room and time are convenient for you, you may sign this letter and bring both this letter and the letter signed by your parent or guardian to the researcher at the time of participation.

At the church, you will spend a maximum of one hour in completing the survey and the test. The church pastor will also assign a representative to represent you when you are taking the survey and the test administered at a church room by me with the help of the church representative. After you complete the survey and the test in the church room, please put them in an envelope provided to you and leave the envelope on a desk in the church room. I will collect all the envelopes after all participants leave the church room.

Please remember that if you do not want to participate in this project for any reason, please do not sign this letter. Even if you have signed this letter, you have the freedom to withdraw from participating in this research for any reason at any time before you complete the survey and the test. But completed survey and test may not be withdrawn since no name or identification will be included in the survey and in the test.

The results of this research will be published as my doctoral dissertation and in academic conference papers and academic journals. No information identifying you will be included in these publications.

According to regulations of Auburn University, your decision whether or not to participate in my research project will not jeopardize your future relations with Auburn University or the Department of Curriculum and Teaching.

If you have any questions concerning this research project, please feel free to let me know, and I will be happy to answer them. If you have questions later, I will be happy to answer them at any time. You can contact me either by phone: (334) 821-2897 or e-mail: [duangui@auburn.edu](mailto:duangui@auburn.edu).

For more information regarding your rights as a research participant in my project, please contact the Office of Human Subjects Research of Auburn University by phone or e-mail. The people to contact there are Executive Director E.N. "Chip" Burson at (334) 844-5966 ([bursoen@auburn.edu](mailto:bursoen@auburn.edu)) or IRB Chair Dr. Peter Grandjean at (334) 844-1462 ([grandpw@auburn.edu](mailto:grandpw@auburn.edu)).

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Participating student's initial

**THANK YOU VERY MUCH FOR YOUR KIND ATTENTION.**

**HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH PROJECT. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE**

**I am 19 years older or older**, and I am willing to participate in this research. I understand that I will spend up to an hour in completing a survey and a test in a church room at a time agreed upon by me. I understand that even after I have signed this letter, I have the freedom to withdraw from participating in the research for any reason at any time before I complete this survey and the test. I understand that I may not keep the survey and language achievement test as my own no matter whether I have completed them or not because they are the property of the researcher and his doctoral committee members.

\_\_\_\_\_  
Participating Student's Signature      Date

\_\_\_\_\_  
Investigator's Signature  
Date

\_\_\_\_\_  
Print Name

Guiyong Duan  
Print Name

**The church room and time for completing the survey and the language achievement test is as follows (pencils will be provided by the researcher):**

**Church room:** \_\_\_\_\_

**Time:** \_\_\_\_\_

APPENDIX E  
SCRIPTS FOR CONTACTING CHURCH PASTORS

The telephone script for contacting the church pastors is as follows:

Hello, Pastor. My name is Guiyong Duan. I am a Ph.D. candidate at Auburn University, Alabama. I am now conducting my dissertation research, which deals with the relationship between acculturation and the English language proficiency among Chinese adolescents who were either foreign-born or American-born. Acculturation in this sense means how closely or distantly Chinese adolescents regard themselves as members of the English-speaking society. English language proficiency means how well Chinese adolescents can speak, listen, understand, and write in English compared to native-English speakers.

Pastor, I would like to know if you have any Chinese adolescents who are 12 years old or older and attend Sunday schools and other church activities in your church. If you have, could I talk with you now for a maximum of 10 minutes about my research?

(If the answer is no) That's OK, but I still thank you for having this conversation with me. Have a nice day.

(If the answer is yes) Thank you very much, Pastor. I am actually recruiting Chinese adolescents both in Vancouver, Canada and in Atlanta, the United States. I have two purposes for conduct this research. The first purpose is to examine whether Chinese adolescents in Vancouver have different acculturation levels than their counterparts in Atlanta. The second purpose is to examine whether different levels of acculturation in these two groups of Chinese adolescents lead to different levels of English language proficiency.

What the Chinese adolescents will do in this research is to complete a survey and two tests: a grammaticality judgment test and a semantic-relatedness judgment test. All these will be done on a totally anonymous and voluntary basis. Students under 19 years old will have to get their parents' permission to complete the survey and the two tests. All students must sign an informed consent letter before they can complete the survey and the two tests. It will usually take Chinese adolescents an hour to complete the survey and the two tests.

Pastor, if you agree to let me conduct this research in your church, could you please assign a church representative to help me in this matter? In addition, could you please specify a specific time and place so that I could talk in person with the church representative about the details of conducting my research?

(When the conversation finishes) Thank you very much, Pastor. You have a nice day.

APPENDIX F  
PERMISSION LETTERS FROM JR. JIANG AND DR. TROPP



DEPARTMENT OF APPLIED LINGUISTICS  
AND ENGLISH AS A SECOND LANGUAGE  
*College of Arts and Sciences*

PO Box 4033  
Atlanta, GA 30302-4033  
Phone: 404/651-3650  
Fax: 404/651-3652



August 29, 2005

Dear Guiyong Duan,

This letter is to certify that you have obtained my authorization to use the instrument of Semantic-Relatedness Judgement Test I developed for my 2002 study in your dissertation entitled "ACCUULTURATION AND ACHIEVEMENT IN ENGLISH AMONG CHINESE ADOLESCENTS: A COMPARISON OF TWO POPULATIONS WHICH VARY IN THE DENSITY OF SPEAKERS OF CHINESE."

My understanding is that proper acknowledgement to my instrument will be provided in your dissertation and in other related publications.

Sincerely,

Nan Jiang, Ph.D.,  
Assistant Professor  
Department of Applied Linguistics  
Georgia State University  
[njiang@gsu.edu](mailto:njiang@gsu.edu)  
<http://www.gsu.edu/~eshlxj>  
404-651-2936

Georgia State University, a unit of the University System of Georgia, is an equal opportunity educational institution and is an equal and affirmative action employer.



BOSTON COLLEGE

PSYCHOLOGY DEPARTMENT

September 2, 2005

Guiyong Duan  
311 W. Glen Avenue, Apt. 11  
Auburn, AL 36830

Dear Guiyong Duan,

This letter is to certify that you have obtained my authorization to use an adapted version of the Psychological Acculturation Scale in your dissertation entitled "ACCULTURATION AND ACHIEVEMENT IN ENGLISH AMONG CHINESE ADOLESCENTS. A COMPARISON OF TWO POPULATIONS WHICH VARY IN THE DENSITY OF SPEAKERS OF CHINESE."

My understanding is that proper acknowledgement to the PAS will be provided in your dissertation and in other related publications. Thank you for your interest in our measure, and best wishes for your research.

Sincerely,

Linda R. Tropp  
Department of Psychology  
McGuinn Hall  
Boston College  
Chestnut Hill, MA 02467 U.S.A

100 COMMONWEALTH AVENUE, CHESTNUT HILL, MA 02467  
617 552-4100 FAX 617 552-2851 EMAIL [psych@bc.edu](mailto:psych@bc.edu)