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Learning Chinese abroad: the role of language attitudes and motivation in the adaptation of international students in China

Baohua Yu*

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The objectives of this study are to investigate the interrelationships of a number of affective variables related to studying Chinese as a second language (L2); to examine the relationships between affective variables in second language acquisition (SLA) and the indices of adaptation; and thirdly, to assess the changes over time in the attitudes and motivation of international students and their sociocultural and academic adaptation during their nine-month Chinese studies at a tertiary level. The results show that integrative motivation plays a very important positive role while language anxiety plays a very important negative role in both sociocultural adaptation and academic adaptation. Moreover, academic adaptation, long being ignored in the literature of crosscultural psychology and SLA, is found to be closely and positively related to sociocultural adaptation in this study. The conclusions are drawn accordingly in respect of longitudinal research design and the importance in relating language-related variables to the adaptation of L2 learners. Suggestions to host institutions and international students are also made in the paper.

Keywords: attitudes and motivation; second language acquisition; sociocultural adaptation; academic adaptation; international students

Background

In 1950, China opened its door for the first time to international students, with 33 students from Eastern Europe. Almost six decades later, having hosted the Olympic Games and successfully joined the World Trade Organisation, China has become more integrated with and also more attractive to the outside world. The country’s rapid economic growth and increasing international influence have drawn large numbers of students from abroad. The annual increase in the rates of students entering the country has been in double digits since the 1990s. It is reported that the enrolments of international students in China had reached 195,503 by 2007 (Xinhua Net 2008). These students are involved in different types of study programmes, with Chinese being the most popular subject. The recognition of China as a world power and the desire to have the knowledge and skills in the language and the culture that will open up possibilities of cooperation in businesses and trade with their home countries are the key factors that motivate the students to study in China (Hanban 2007).

Chinese also seems to be acquiring priority as a second or foreign language in many countries. According to Zhang (2006), in Asia, the governments of Korea,
Singapore, Indonesia, Malaysia, Cambodia and Vietnam all encourage their citizens to learn Chinese. This is a very different situation from 30 years ago when, for example, Chinese was forbidden in Indonesia and Cambodia. In the West, Chinese is ranked the second most important foreign language in the USA and is the most frequently used second language (L2) in Canada and Australia. In England, the government sponsors the learning of Chinese, and in France there are more than 300 primary and secondary schools offering Chinese courses (Zhang 2006).

Yet the international students in China remain one of the most under-studied populations so far. In particular, very little research has tried to relate academic/sociocultural adaptation to language attitudes and motivation, and even less research has been devoted to the time effect on the study variables.

The research reported here is not only one of the few studies which employs longitudinal data, but it also bridges the gap between the literature on the affective variables in studying Chinese as a L2 in China and the sociocultural/academic adaptation of the international students concerned. The following sections will examine the literature on two facets of adaptation, the relationships between adaptation, L2 proficiency, attitudes and motivation in second language acquisition (SLA), and background and contextual factors affecting adaptation. The purpose of the study, the hypotheses to be tested and the significance of the study will then be presented, followed by research method, results and discussion, and conclusions and implications.

**Literature review**

**Two important facets of adaptation of international students**

Church (1982) suggested that international students experienced difficulties elicited by the new culture in addition to the problems encountered by domestic students. Berry (1985) identified four domains of problems of adaptation in studying foreign students’ acculturation: environmental (such as climate, dress, housing and food), sociocultural (such as interpersonal and intergroup relations, and social contact in general), academic (such as courses, exams, deadlines and language comprehension) and psychological (such as mental health status, self-esteem and identity). Accordingly, more recent studies show that international students encounter problems pertaining not only to sociocultural adaptation, such as adjustment to social customs and norms (Schwarzer, Hahn, and Schröder 1994), and psychological adaptation, such as feeling depressed, anxious and lonely due to the loss of their social support networks (Sandhu and Asrabadi 1994; Yang and Clum 1995), but also academic adaptation such as worrying about their language proficiency and academic performance (Hayes and Lin 1994; Kagan and Cohen 1990; Ying and Liese 1994).

The primary task of most international students is to obtain good academic results in the foreign institutions. Academic issues are at the forefront of both these students’ and their institutions’ concerns. Research shows that academic success has a significant impact on students’ sociocultural adaptation and psychological well-being and vice versa (Li and Kaye 1998). It can be inferred that the relation between sociocultural adaptation and academic adaptation is significantly positively associated and may be reciprocally causally related. ‘Adaptation’ in this paper refers to international students’ sociocultural and academic integration with the target language group, which are seen as the two indices for measuring adaptation in this
paper. This conceptualisation combines Ward’s notion of sociocultural adaptation that refers to an individual’s ability to fit in or negotiate interactive aspects of the new cultural environment (Ward and Rana-Deuba 1999) with Tinto’s academic adaptation that refers to an individual’s ability to be involved in positive educational outcomes (Tinto 1993).

**Relationship between adaptation and second language (L2) proficiency**

Masgoret and Ward (2006) established an interactive model of the relationships between target language proficiency, communication competence, effective intercultural interaction and sociocultural adaptation. Basically, the core components of an international student’s sociocultural adaptation are language proficiency and communication competence, supplemented by effective intercultural interaction, which in turn constitute a part of the broader construct of sociocultural adaptation (Masgoret and Ward 2006). Good proficiency in the target language is the basis of successful communication among members of different ethnolinguistic communities (Dörnyei and Csizer 2005). In a studying abroad context, better language fluency is seen to be directly related to more interaction with members of the host culture and as such leads to fewer sociocultural adjustment problems (Ward and Kennedy 1993). Other studies suggest that greater interaction with the host community would contribute to better competence in the host language (Clément, Noels, and Deneaault 2001). Ward (2004) concluded that target language skills helped establish social support and interpersonal relationships and these facilitated adaptation.

Meanwhile, the academic adjustment of students studying abroad has also been found to be affected by issues related to language (Furnham and Alibhai 1985; Holmes 2000). In a recent review of empirical studies relating to international students’ adjustment to their academic achievement in English-speaking universities, Andrade (2006) suggests that difficulty with English language and culture is the primary factor affecting academic and sociocultural adjustment. It is plausible to propose that sociocultural/academic adaptation is positively correlated with L2 proficiency.

**Affective variables related to second language (L2) proficiency and the two indices of adaptation**

Educators, teachers and parents in both Western and non-Western countries have long considered that motivation, in particular integrative motivation, is an essential factor for successful SLA. Dörnyei (2001) and Oxford and Ehrman (1992) proposed that learners’ attitudes and motivation were important for increased language competence and L2 proficiency. Research on motivation in L2 learning has been widely influenced by the work of social psychologists Robert Gardner, Richard Clément and their colleagues in Canada where French and English are the two official languages. These researchers have intensively studied the role of L2 learning motivation and generally adopted a social psychological approach, regarding motivation in SLA as socially grounded (Gardner 1985; Gardner and Lambert 1959). The socio-educational model (Gardner 1985, 2000, 2005a) has laid a very good foundation for hypothesising that motivation, integrativeness and instrumental orientation are positively correlated with each other, which have a negative
correlation with language anxiety; and integrative motivation and language anxiety are the two most influential determinants of L2 achievement.

It is argued in a classic work by Gardner and Lambert (1972) that diverse motives seem to fall under two headings, instrumental and integrative. Integrative motivation is a complex of attitudinal, goal-directed and motivational attributes. It concerns a positive affective disposition towards the L2 community and the desire to achieve language proficiency in order to participate in and develop a sense of belonging to L2 community. On the other side of the coined term, instrumental motivation arises from the desire to learn the language as a means of achieving practical purposes such as improving one’s economic status or getting social recognition (Gardner and Lambert 1972; Lightbown and Spada 1999). Integrative motivation was found to be more powerful than instrumental (Dörnyei 1990; Gardner and Lambert 1959, 1972).

Language-related variables such as integrativeness and motivation play very important roles in the cultural learning process and sociocultural adaptation (Masgoret and Ward 2006). The underlying dynamics have been attributed to the fact that higher levels of integrativeness contribute to the prediction of higher levels of motivation (Masgoret and Gardner 2003), and both are associated with high levels of intercultural contact (Masgoret and Gardner 1999). Moreover, increased intercultural contact and satisfaction with that contact have been found to be linked to fewer sociocultural difficulties (Ward and Kennedy 1993; Ward and Searle 1991). It is reasonable to hypothesise that integrative motivation is positively correlated with sociocultural adaptation.

A low level of language-related anxiety is associated with high-level linguistic self-confidence and positive perceptions regarding one’s L2 achievement (Clément, Gardner, and Smythe 1980). In fact, confidence in being able to communicate in an adaptive and efficient way when using the L2 is an important predictor of foreign language achievement (Clément and Bourhis 1996; Clément, Dörnyei, and Noels 1994). Due to the close interactive relationship between foreign language achievement and sociocultural adaptation (Masgoret and Ward 2006), it is inferred that more L2 confidence will result in greater willingness to communicate, which in turn leads to more contact with the host community. And the increased intercultural contact and satisfaction with that contact have been found to be linked with fewer sociocultural adjustment difficulties (Ward and Kennedy 1993; Ward and Searle 1991). It is therefore plausible to hypothesise that language anxiety is significantly and negatively correlated with sociocultural adaptation.

A key component of crosscultural adjustment is effective communication (Gudykunst and Hammer 1988; McGuire and McDermott 1988), and one important contributor to effective communication is target language proficiency. Zimmerman and his colleagues (1996) found that the ability to communicate with fellow students was essential to transcultural adaptation in an academic setting. Examining sojourners’ increased ability to use the language in interactions with members of the host culture, studies (e.g. Gullahorn and Gullahorn 1966; Sewell and Davidson 1956) suggested that a sojourner’s level of fluency in the language of the host country might influence his or her degree of adaptation. Church (1982) argued that the relationship between language fluency and social interaction was most likely a reciprocal one, which indicated that increased language confidence led to greater participation in the host community, which, in turn, led to improved language proficiency in the host language. As noted earlier, academic adaptation is regarded as important as sociocultural adaptation for international students, and both are seen
as being reciprocally causally related to each other. Therefore, it is reasonable to predict that academic adaptation has a similar positive association with integrative motivation, and a negative relationship with language anxiety, in the same way as sociocultural adaptation.

**Background and contextual factors affecting the adaptation of international students**

Black and Mendenhall (1991) and Ward and her colleagues (1998) pointed out that it was problematic to simply accept the U-curve of adaptation without using a longitudinal design. Such a conclusion suggested that time-related variables such as age of arrival and length of residence were important factors determining levels of adaptation. Therefore, such factors in relation to adaptation were summarised as follows.

**Age of arrival and length of residence**

Studies showed that the younger the individuals were, the smoother the process of adaptation (Beiser, Barwick, and Berry 1988), while young people who were older than others often encountered more substantial adaptation problems (Aronowits 1992; Sam and Berry 1995).

Ward and Kennedy (1996) found that sociocultural adaptation increased remarkably between one and six months and only slightly over the next six months. In another study conducted by Ward and others (1998), the sociocultural adaptation of Japanese students in New Zealand improved significantly over a four-month period but did not show any increments at six or 12 months. Such findings support a ‘learning curve’ of sociocultural adaptation with a steady increase over the first 4–6 months, followed by a levelling off until the end of the first year. That was to say, on the whole, sociocultural adaptation would become better with length of residence in the first 12 months. However, there was barely a study in the West examining what the ‘curve’ is like after the first year of international study. Fortunately, Senyshyn, Warford, and Zhan’s recent study (2000) is an exception. Their study found the second year students’ adjustment was almost level with the first year though adjustment was linear with problems decreasing from the first year to the final year (Senyshyn, Warford, and Zhan 2000). More recently, Yu and Watkins (2008) studied international students studying Chinese at a Chinese University, and found that Year 2 international students reported the lowest level of integrativeness while having the highest level of language anxiety among all the participants sampled ranging from Year 1 to Year 4. Those studies seem to indicate that Year 2 international students may meet more challenges in language-learning attitudes and motivation, and their adaptation is also in a very critical transitional stage. Therefore, second-year students may need more attention from researchers.

According to Brown (1980), acculturation in SLA goes through four stages, and follows a curvilinear path like a U-curve proposed by Lysgaard (1955): excitement and euphoria; culture shock; a gradual, tentative and vacillating recovery; and a near or full recovery (either assimilation or adaptation). Such a curve reveals the psychological feelings experienced by international students. Based on U-curve theory, Year 2 students should be placed at the stage of ‘a gradual, tentative and vacillating recovery’ according to their time in China (e.g. at least one year). Therefore, it is reasonable to predict that those students reporting longer residential
time in China may feel a better psychological adaptation. In the same sense, it is possible that they will also experience a better sociocultural adaptation or a better academic adaptation.

**Local friendship networks and perceived cultural distance**

According to Bochner (1982), local friendship networks are expected to function to facilitate students’ attainment of academic and professional goals. That is to say, a positive relationship between local friendship networks and academic adaptation will be possible. Other studies have consistently shown that the greater the similarity that sojourners perceive between the host culture and their home countries, the higher the level of sociocultural adaptation they report (Furnham and Bochner 1982; Searle and Ward 1990; Ward, Bochner, and Furnham 2001; Ward and Kennedy 1999). As two important facets of adaptation, sociocultural and academic adaptations are supposed to be highly and positively related to each other. Therefore, it is plausible to hypothesise that a high level of sociocultural/academic adaptation will have positive relationships with good local friendship networks and similar perceived cultures.

The above literature presents a review of the relevant theories and research in the three fields under consideration: attitudes and motivation in SLA, sociocultural adaptation and academic adaptation. It also provides reasonable linkages between study variables from the three fields though few studies have tried to link them together. The following part will present guiding hypotheses in this study.

**The study**

In order to have a clear picture of the interrelationships and changes among study variables, three relationships and three changes over time were examined in the present study: first, the relationships between affective variables in language learning; second, the relationships between affective variables in language learning and the two indices of adaptation; third, the relationships between background variables (such as age of arrival), contextual variables (such as length of residence, local friendship networks and perceived cultural distance) and the two indices of adaptation; and fourth, the changes over time in attitudes and motivation in SLA and the two indices of adaptation.

In the light of previous research and literature, guiding hypotheses of this study are put forward as follows.

**Hypothesis 1**

Relationships between motivation, integrativeness and instrumental orientation will be found to be significantly positive; however, language anxiety will be found to be significantly and negatively correlated with these variables.

**Hypothesis 2**

The underlying structure emerging from the affective variables in SLA will remain relatively stable over time.
Hypothesis 3
Integrative motivation will be significantly and positively related to the two indices of adaptation in both the pre-test and the post-test.

Hypothesis 4
Language anxiety will be significantly and negatively related to the two indices of adaptation in both the pre-test and the post-test.

Hypothesis 5
The younger students are when arriving in China, the longer they reside in China, the more similarity they perceive between their own and the target culture, the more local friendship networks they have, the higher will be their levels of sociocultural adaptation and academic adaptation.

Hypothesis 6
The indices of adaptation are positively correlated with each other in both the pre-test and the post-test.

Hypothesis 7
Language-related attitudes and motivation will increase while language anxiety will decrease from Time 1 to Time 2.

Hypothesis 8
Self-rated Chinese language proficiency will increase over time.

Hypothesis 9
Positive sociocultural and academic adaptation will increase over time.

The study reported here is unique in that it integrates theoretical constructs from three different sets of literature: motivation from SLA, sociocultural adaptation from crosscultural psychology and academic adaptation from higher education literature. To my knowledge, it is the first attempt to link language attitudes and motivation, and sociocultural adaptation to international students’ academic adaptation in the context of the People’s Republic of China (PRC). This study also has the advantage of being a longitudinal one that allows insights into the underlying causal relationships and how attitudes and motivation in language learning and sociocultural and academic adaptation change over time. It will increase our understanding of the relationship between affective variables in the language learning and adaptation of international students in China. The study also provides some practical suggestions for both host institutions and international students on how to enhance international students’ L2 motivation and L2 confidence as well as adaptation in their language-learning context.
Method

Procedure and participants

As reported earlier, Yu and Watkins (2008) found that international students in Year 2 of their programme met more problems in language learning and studying abroad than those in other years. This would suggest the need to look more closely at this year group in this longitudinal study.

This study was conducted at Beijing Language and Cultural University, which is regarded as a key university in China, hosting the largest number of foreign students majoring in Chinese. Data collection was carried out in two sessions over a nine-month period. In each session, all participants were requested to complete the same survey questionnaire.

The first session was conducted in September 2005 (immediately after the beginning of the new academic semester). All second-year international students were invited to participate in the survey. In this session, 215 students (136 females, 79 males) completed and returned the questionnaire. Their age ranged from 18 to 41 (M = 22.55, SD = 3.63). They were from England, Honduras, France, Germany, Spain, Russia, Turkey, Israel, Sudan, Switzerland, Syria, Kazakhstan, Mauritius, Mongolia, Pakistan, South Africa, Thailand, Uganda, Indonesia, Vietnam, Japan and South Korea.

The second session was conducted in June 2006. The sample consisted of 90 second-year international students from the same university (64 females, 26 males). Their age ranged from 18 to 40 (M = 22.83, SD = 3.97). They came from England, France, Germany, Spain, Russia, Turkey, Indonesia, Thailand, Vietnam, Japan and South Korea. Since this was designed as a longitudinal study, those 90 students who had participated in both sessions were identified, and the two sets of data were matched across time.

Instruments

The survey questionnaire used was validated in a previous study (Yu and Watkins 2008) and was subsequently revised. It consisted of items related to background and contextual information, affective measures, sociocultural adaptation and academic adaptation.

The questionnaire was translated into Chinese given that the participants’ language proficiency in Chinese was competent for this task. In order to test this assumption, two international students were randomly selected from Beijing Language and Cultural University and were invited to check whether they could understand the whole survey questionnaire before the first session distribution. Results showed that both students had no difficulty in understanding the whole Chinese survey. In addition, the researcher’s contact information was disclosed to all the participants in case they should meet any difficulty in understanding or completing the survey. Participants are free to withdraw from the survey at any time when they feel it is too difficult for them or for other reasons.

Background and contextual variables

The following background characteristics and context-related variables were examined.
Age of arrival. Participants were asked to report how old they were when they arrived in China.

Length of residence. Participants were asked to indicate how long they had been in China. Their responses were classified into five categories: 1 year (Time ≤ 12 months), 2 years (12 months < Time ≤ 24 months), 3 years (24 months < Time ≤ 36 months), 4 years (36 months < Time ≤ 48 months) and 4 years plus (Time > 48 months).

Local friendship networks. Participants were asked to say how many Chinese friends (if any) they had made during their stay in China. The definition of ‘friend’ was provided as ‘people that you contact most frequently in daily life and study’.

Perceived cultural distance. Participants were asked to rank the cultural distance between their own country and China on a five-point Likert scale with 1 being very different and 5 being very similar.

Affective variables
Language-related affective variables were measured using an adapted and revised version of the Attitudes/Motivation Test Battery (AMTB; Gardner, Tremblay, and Masgoret 1997) designed for university students. There were 73 items in this questionnaire, which were set out on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The modified AMTB included nine measures.

Attitudes towards Chinese culture. This measure consists of three positively and three negatively worded items. A high score reflects a positive attitude.

Attitudes towards learning Chinese. This measure consists of four positively and four negatively worded items, with a high score indicating a positive attitude.

Desire to learn Chinese. Five positive and five negative items comprise this measure. High scores reflect a positive attitude.

Chinese class anxiety. This measure consists of five positively and five negatively worded items. A high score represents a considerable level of apprehension experienced when called upon to use Chinese in the Chinese classroom.

Chinese use anxiety. This measure consists of five positively and five negatively worded items. A high score reflects a considerable level of apprehension when called upon to use Chinese.

Interest in foreign languages. This measure consists of five positive and five negative items, with a high score indicative of an interest in learning and using any L2.

Instrumental orientation. This measure consists of four positively worded items assessing the degree to which students seek to learn Chinese for pragmatic reasons.

Integrative orientation. Four positively worded items comprise this measure, which assesses the extent to which students seek to learn Chinese for integrative reasons.
Motivational intensity. This measure comprises five positively and six negatively worded items. A high score represents considerable effort expended to learn Chinese.

Empirical research on the role of attitudes and motivation in L2 learning has focused on four constructs that are aggregates of above measures. Integrativeness was represented by three measures: interest in foreign languages, attitudes towards Chinese culture and integrative orientation. Motivation was represented by three measures: attitudes towards learning Chinese, desire to learn Chinese and motivation intensity. Instrumental orientation was represented by one measure: instrumental orientation. Language anxiety was represented by two measures: Chinese class/course anxiety and Chinese use anxiety, and thus there were 20 items in measuring this construct.

There are several ways of scoring the constructs in AMTB. Gardner (2005b) pointed out that researchers could either aggregate measures of constructs or aggregate the constructs depending on different research purposes. Taking aggregates of the constructs, for example, Masgoret (2006) computed ‘integrative motivation’ by aggregating integrativeness, motivation and instrumental orientation. This study adopted the method of computation to measure ‘integrative motivation’, which consisted of 53 items in all.

Integrative motivation (pre-test, $\alpha = 0.89$; post-test, $\alpha = 0.91$). A high score on this scale indicates that a positive affective disposition towards the Chinese community and the desire to achieve Chinese language proficiency in order to participate in and develop a sense of belonging to Chinese community.

Language anxiety (pre-test, $\alpha = 0.84$; post-test, $\alpha = 0.87$). A high score indicates students’ high level of apprehension when using Chinese both in the classroom and outside the classroom.

Sociocultural adaptation
Sociocultural adaptation was measured on an adapted 25-item Sociocultural Adaptation Scale (SCAS) developed and refined by Ward and Kennedy (1999) based on the compilation of data across a large number of sojourner samples, including 16 cross-sectional samples, four longitudinal samples and one paired comparison between sojourning and sedentary samples. Ratings were made on a five-point Likert scale from 1 (extreme difficulty) to 5 (no difficulty).

Sociocultural adaptation (pre-test, $\alpha = 0.92$; post-test, $\alpha = 0.87$). This measure tests how much difficulty students experience in adjusting to the Chinese society and culture.

Academic adaptation
Academic adaptation consisted of 12 items, being assessed by the measure of Persistence/Voluntary Dropout Decision (Pascarella and Terenzini 1980) on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

Academic adaptation (pre-test, $\alpha = 0.72$; post-test, $\alpha = 0.79$). This measure examines to what extent the students interact with their peer group and faculty.

Alpha coefficients above 0.70 are regarded as sufficient (Nunnally 1978). The alpha coefficients of the six scales were adequate for this student sample in both the pre-test and the post-test.
Results and discussion

Relationships between attitudinal and motivational variables

The first purpose of this study is to investigate the relationships between affective variables, language attitudes and motivation measures, which have been found to be important in SLA studies (Dörnyei 2001; Oxford and Ehrman 1992). Factor analyses are conducted to examine the underlying structure of these affective variables. The seven attributes assessed by the AMTB (Gardner, Tremblay, and Masgoret 1997) are subjected to a principal components analysis with varimax rotation. Based on factor loadings and the Scree test, major dimensions are identified and defined. In addition, a comparison of factors in the pre-test and post-test analyses provides further information on the stability of the major dimensions over time.

As Table 1 shows, Factor I gains appreciable positive loadings (greater than 0.30) from seven variables: three measures of motivation (attitudes towards learning Chinese, desire to learn Chinese and motivational intensity), three measures of integrativeness (attitudes towards Chinese culture, interest in foreign languages and integrative orientation) and the measure of instrumental orientation. Such a pattern of loadings suggests that individuals scoring highly on this factor possess a high level of motivation in learning Chinese and openness to identify with the host language community. Moreover, these individuals also score highly in instrumental orientation, which suggests that they also have practical aims in learning Chinese. The structure of Factor I is stable from Time 1 to Time 2 and is defined as integrative motivation because it was very similar to the integrative motivation factor found in other L2 studies (see e.g. Clément, Gardner, and Smythe 1980).

Factor II in the pre-test obtains high positive loadings from two measures of Chinese language anxiety (Chinese class anxiety and Chinese use anxiety), and appreciable negative loadings from one measure of motivation (motivational intensity) and one measure of integrativeness (attitudes towards Chinese culture). The structure of this factor indicates that individuals who have a low level of language anxiety in the Chinese class or in using Chinese are strongly motivated to learn Chinese and have favourable attitudes towards Chinese culture. This factor was defined as language anxiety (Gardner, Tremblay, and Masgoret 1997).

Two measures of motivation (attitudes towards learning Chinese and motivational intensity) are found to have negative and salient (i.e. >0.30) loadings on

Table 1. Factor analysis of pre- and post-test affective variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factors</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>Attitudes towards learning Chinese</td>
<td>0.83</td>
<td>-0.22</td>
<td></td>
</tr>
<tr>
<td>Desire to learn Chinese</td>
<td>0.81</td>
<td>-0.10</td>
<td></td>
</tr>
<tr>
<td>Motivational intensity</td>
<td>0.64</td>
<td>-0.33</td>
<td></td>
</tr>
<tr>
<td>Attitudes towards Chinese culture</td>
<td>0.53</td>
<td>-0.40</td>
<td></td>
</tr>
<tr>
<td>Interest in foreign languages</td>
<td>0.69</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>Integrative orientation</td>
<td>0.52</td>
<td>-0.27</td>
<td></td>
</tr>
<tr>
<td>Instrumental orientation</td>
<td>0.51</td>
<td>-0.26</td>
<td></td>
</tr>
<tr>
<td>Chinese class anxiety</td>
<td>-0.05</td>
<td>0.91</td>
<td></td>
</tr>
<tr>
<td>Chinese use anxiety</td>
<td>-0.21</td>
<td>0.72</td>
<td></td>
</tr>
</tbody>
</table>
Factor II in the post-test. The above finding suggests that at the end of the second year of studying, students reporting low level of language anxiety will also report a high level of motivation and favourable attitudes towards learning Chinese.

The above results support both Hypotheses 1 and 2.

**Relationships between affective factors and pre- and post-test indices of adaptation**

The second purpose of the study is to examine the relationships between affective dimensions and indices of adaptation (pre-test and post-test of sociocultural and academic adaptations).

As can be seen in Table 2, the correlations between affective variables in SLA and the two indices of adaptation are all statistically significant in both the pre-test and the post-test except for the relationship between integrative motivation in the post-test and sociocultural adaptation in the pre-test.

The sufficient and positive relationships between integrative motivation and measures of adaptation are consistent from Time 1 to Time 2, which may imply that integrative motivation is a crucial factor in ensuring successful sociocultural/academic adaptation. Such a finding is consistent with that in Masgoret’s (2006) study. Moreover, language anxiety in this study is found to be consistently and negatively correlated with adaptation in both the pre-test and the post-test. Such a finding indicates that sociocultural/academic adaptation may be enhanced through a low level of anxiety.

These findings support Hypotheses 3 and 4.

### Table 2. Correlations of pre- and post-test factor scores with pre- and post-test indices of adaptation (n = 90).

<table>
<thead>
<tr>
<th>Affective dimension</th>
<th>Sociocultural adaptation</th>
<th>Academic adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
</tr>
<tr>
<td>Integrative motivation</td>
<td>0.38**</td>
<td>0.31**</td>
</tr>
<tr>
<td>Language anxiety</td>
<td>-0.42**</td>
<td>-0.22*</td>
</tr>
<tr>
<td>Integrative motivation</td>
<td>0.17</td>
<td>0.30**</td>
</tr>
<tr>
<td>Language anxiety</td>
<td>-0.38**</td>
<td>-0.28**</td>
</tr>
</tbody>
</table>

* *p < 0.05; **p < 0.01 (two-tailed).*

**Relationships between background and contextual variables and indices of adaptation**

Zero-order correlations are utilised to test the relationships between the background and contextual variables and the adaptation indices as shown in Tables 3 and 4.

Age of arrival and local friendship networks are found to have non-significant correlations with the two indices of adaptation in both tests. Contrary to the prediction, length of residence of the pre-test is found to have a statistically negative correlation with academic adaptation of both the pre-test and the post-test. In other words, the longer the students reported staying in China in the beginning of the
second year, the lower their level of academic adaptation at either the beginning or the end of the second year. The above findings may indicate that the students sampled residing longer in China may tend to have less interaction with their peer group and faculty at both Times 1 and 2, compared to those reporting shorter residential time at the beginning of the second year. Moreover, the students’ perceived cultural distance in the pre-test is found to have a statistically positive correlation with sociocultural adaptation in the pre-test, indicating that the closer they rank their home culture to the Chinese culture, the higher their level of sociocultural adaptation will be. Such a finding supports the ‘cultural fit’ hypothesis proposed by Ward, Bochner, and Furnham (2001).

Table 4 shows that none of the contextual variables in the post-test have a significant correlation with the two indices of adaptation in the post-test. In summary, Hypothesis 5 is almost rejected.

Relationships between the two indices of adaptation

As shown in Table 5, in the same period (e.g. at the beginning or the end of second year), individuals reporting high sociocultural adaptation will also report high academic adaptation, and vice versa. It can be inferred that as two aspects of adaptation, sociocultural adaptation and academic adaptation are closely related to
each other in the same period. However, this does not necessarily imply a causal relationship between them.

The relationship over time between sociocultural adaptation and academic adaptation is non-significant (cross-lagged correlation = 0.16, $p > 0.05$ from sociocultural adaptation in the pre-test to academic adaptation in the post-test, and cross-lagged correlation = 0.09, $p > 0.05$ from academic adaptation in the pre-test to sociocultural adaptation in the post-test). There is no evidence for the causal priority of either sociocultural adaptation or academic adaptation.

The next concern is whether the test–retest reliabilities of both indices of adaptation are high. It is found that both are not high with the correlation coefficients of less than 0.70. This suggests that both academic adaptation and sociocultural adaptation may have changed over time.

Thus Hypothesis 6 is partially supported.

Table 5. Correlations of indices of adaptation in the pre- and post-test ($n = 90$).

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Sociocultural adaptation</th>
<th>Academic adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
</tr>
<tr>
<td>Sociocultural adaptation (pre-test)</td>
<td>–</td>
<td>0.52**</td>
</tr>
<tr>
<td>Academic adaptation (pre-test)</td>
<td>0.40**</td>
<td>0.10</td>
</tr>
<tr>
<td>Sociocultural adaptation (post-test)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01 (two-tailed).

**Changes in attitude and adaptation**

Table 6 directs attention to the changes of the measures under investigation occurring over the second year of study.

Table 6. Paired $t$-test of pre and post measures.

<table>
<thead>
<tr>
<th>Pre-test variables</th>
<th>Pre-test mean</th>
<th>Post-test mean</th>
<th>$t$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudinal and motivational variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes towards learning Chinese</td>
<td>4.07</td>
<td>4.16</td>
<td>−1.80</td>
</tr>
<tr>
<td>Desire to learn Chinese</td>
<td>3.89</td>
<td>3.97</td>
<td>−1.47</td>
</tr>
<tr>
<td>Motivational intensity</td>
<td>3.55</td>
<td>3.64</td>
<td>−1.44</td>
</tr>
<tr>
<td>Attitudes towards Chinese culture</td>
<td>3.63</td>
<td>3.76</td>
<td>−1.98*</td>
</tr>
<tr>
<td>Interest in foreign languages</td>
<td>3.98</td>
<td>4.14</td>
<td>−2.78**</td>
</tr>
<tr>
<td>Integrative orientation</td>
<td>3.40</td>
<td>4.08</td>
<td>−0.95</td>
</tr>
<tr>
<td>Instrumental orientation</td>
<td>3.98</td>
<td>3.96</td>
<td>0.26</td>
</tr>
<tr>
<td>Chinese class anxiety</td>
<td>2.97</td>
<td>2.99</td>
<td>−0.23</td>
</tr>
<tr>
<td>Chinese use anxiety</td>
<td>2.63</td>
<td>2.55</td>
<td>1.43</td>
</tr>
<tr>
<td>Self-rating of Chinese proficiency</td>
<td>2.10</td>
<td>2.31</td>
<td>−3.73***</td>
</tr>
<tr>
<td>Adaptation indices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sociocultural adaptation</td>
<td>3.26</td>
<td>3.17</td>
<td>1.30</td>
</tr>
<tr>
<td>Academic adaptation</td>
<td>3.22</td>
<td>3.16</td>
<td>0.88</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01; ***p < 0.001 (two-tailed).
It can be seen that individuals report having an increased favourable attitude towards the Chinese culture and more interest in foreign languages. Furthermore, students report a significant improvement in their Chinese language proficiency measured with the proficiency of four skills: listening, speaking, reading and writing. The above results indicate that their Chinese language proficiency improves over time along with their attitude towards the Chinese culture and their interest in Chinese languages. However, there are no significant differences between the pre-test and post-test results with regard to language anxiety and the two indices of adaptation, indicating that there are no significant changes in language anxiety and the two indices of adaptation over time. In summary, Hypothesis 7 is partially supported; Hypothesis 8 is supported while Hypothesis 9 is rejected.

Conclusions and implications

The above findings suggest that integrative motivation plays a very important role in the process of adaptation. It turns out to be a very good predictor of academic adaptation. According to Dörnyei (2003), the core aspect of integrative disposition lies in identification with the L2 community psychologically and emotionally. For the international students in this research, the L2 community are mainly the faculty staff and their classmates. A high degree of integrative motivation will lead to a high degree of interaction with faculty members and classmates. And such a high level of interaction with faculty members can enhance academic adaptation (Tinto 1993). We may conclude that integrative motivation and academic adaptation are intimately related in SLA contexts such as that in this research.

The finding that integrative motivation is significantly and positively correlated with sociocultural adaptation in this study is consistent with previous research (Masgoret and Ward 2006). As reported in the literature, learners who are integratively motivated, however, are probably also more successful at an advanced language level than those who are not due to the fact that psychological integration may sustain interest and desire to learn the language longer (Dörnyei 1990; Gardner 1985). Likewise, integratively motivated learners may sustain longer desire and interest in identifying with the host country people, which is likely to contribute to better sociocultural adaptation in the long run.

There has long been a debate in the superiority of integrative motivation over instrumental motivation (see Au 1988 for discussion). This study did not tap such superiority, but the adequate positive loading of instrumental orientation on integrative motivation may suggest that instrumental motivation may be as good a predictor as integrative motivation in predicting language achievement (e.g. Chihara and Oller 1978). In the same sense, instrumental motivation may be a significant predictor of both sociocultural adaptation and academic adaptation. An implication of these results for this debate is that longitudinal data are necessary to observe and examine predictive roles of integrative motivation and instrumental motivation in adaptation, which can be a new direction for further investigations.

Language anxiety displays negative associations with the two indices of adaptation. In fact, there is little documented literature tapping the relation between language anxiety and adaptation. However, language anxiety is an important component in defining L2 confidence (Clement, Gardner, and Smythe 1980), which refers to one’s confidence in being able to communicate in an adaptive and efficient way when using the L2, and which can be an aggregate of self-ratings of proficiency
and an absence of language anxiety (Clément and Bourhis 1996). The underlying dynamics reported in the literature are that L2 confidence is directly related to willingness to communicate and more contact with the host community (MacIntyre et al. 1998), and that increased intercultural contact and satisfaction with that contact have been found to be linked with fewer sociocultural difficulties (Ward and Kennedy 1993; Ward and Searle 1991). Similarly, it is plausible that the increased intercultural contact with faculty staff and classmates will also be linked with fewer academic difficulties. This research has added new empirical evidence to the literature tapping language anxiety and adaptation.

Time of arrival, length of residence and target language proficiency are identified as important predictors in the adaptation of Chinese adolescents in Canada (Kuo and Roysircar 2004). Studies have also suggested that sojourners’ expectations regarding the culture of the host country are important for sociocultural adaptation. However, in the present study, perceived cultural distance has been found to have a significant positive correlation with sociocultural adaptation in the pre-test but not in the post-test. This suggests that the impact of perceived cultural distance may diminish over time. To my surprise, length of residence turns out to be negatively correlated with academic adaptation in both the pre-test and the post-test, suggesting that the longer the students sampled resided in China, the lower the level of academic adaptation they reported at both the beginning and the end of the second study year.

To my knowledge, there is no empirical study that has ever tapped the relationship between residential time and academic adaptation. Nonetheless, a close examination of the sample who reported longer residential time may explain the negative relationship. This study identified and examined Year 2 students because previous studies (e.g. Senyshyn, Warford, and Zhan 2000; Yu and Watkins 2008) suggested that Year 2 for international students might be a critical transitional stage of either adaptation or L2 learning. In Chinese programmes, students are placed in a certain level such as a Year 2 class according to their language proficiency as assessed by objective test results. In such a situation, the following interpretation could be possible. Students reporting a longer residential time in China, who should have been in Year 3 or Year 4 but were placed in Year 2 because of their Chinese proficiency, may feel frustrated with their Chinese study and depressed as a result of not coping well in the new language environment, and such feelings may lead to very limited interaction with their peer group and faculty. Such a finding indicates that the second year for international students may be the most important bridging stage between primary language learning and advanced language learning. During such a stage, international students may encounter more academic or language-learning problems, as the learning content becomes more complex and more advanced interaction between them and their classmates and teaching staff is required.

In terms of the relationship between sociocultural and academic adaptation in the pre-test and the post-test, it seems that these are closely correlated but a reciprocal relationship is not found in this study. Academic adaptation has too often been ignored in the literature of both crosscultural psychology and SLA. Previous research has identified target country language proficiency as the core issue for both academic adaptation and sociocultural adaptation (Cheng, Myles, and Curtis 2004; Jaboc and Greggo 2001; Senyshyn, Warford, and Zhan 2000). From a different perspective, this study provides empirical evidence to suggest that academic adaptation was significantly correlated with affective variables in SLA and sociocultural adaptation. Therefore, academic adaptation should be regarded as an
important facet of the adaptation of international students and needs to be incorporated into the relevant literature and future research.

The findings of this study also draw attention to the cultural transition that takes place as students adapt to their new society through an examination of the changes of motivational variables and adaptation indices over time. It is found that two important measures of integrative motivation, attitude towards the Chinese culture and interest in foreign languages, are enhanced over time. Meanwhile, the students’ Chinese language proficiency is improved significantly at the end of the second year. Integrative motivation seems to exert a long-term effect on both adaptation and language-learning achievement, which implies that a longitudinal design is necessary to study the dynamic changes of integrative motivation. Like the stage U-curve theory (Lysgaard 1955), the influence of integrative motivation, a complex affective variable in SLA, may follow a non-linear path. It is important that future research follows this lead and tests for potential reciprocal relationships and the dynamic curve of integrative motivation.

The behaviour and attitudes of international students are often misinterpreted by host institutions (Andrade 2006), and the latter need deeper understanding of the students’ academic, social and psychological challenges (Roberson et al. 2000). Host institutions may sometimes underestimate the problems in respect of social culture or academic matters, may not be fully prepared for teaching international students in an appropriate way, and may need to provide systematic training for both the academic and non-academic staff. Moreover, local friendship networks are expected to function to facilitate students’ attainment of their academic and professional goals (Bochner 1982). However, they were found to have no significant relationship with the study variables. Such a finding implies that, on the one hand, those international students lack the skills to establish such networks in China, while on the other hand, host institutions do not provide sufficient supporting programmes for such students. One suggestion is that the host institutes pair international students with volunteer ‘host’ students, and encourage them to attend various campus activities together. Such peer support programmes can provide an important step in helping the academic adaptation of international students and at the same time also benefit the intercultural awareness of the local students.

For international students, making careful psychological and academic preparation for their overseas study and life before coming to China is advice that they may follow. More specifically, Jaboc and Greggo (2001) suggest that international students should know their problems, be ready to develop friendships with diverse peers, understand non-verbal behaviour, be ready to communicate with teachers and be ready to be involved in the university community.

In summary, this study provides meaningful insights into the complex process of adaptation and SLA of international students in China. The results suggest that it is important that researchers in SLA consider psychological- and cultural-related constructs relating to SLA, and researchers in psychology consider language-related variables in studying language learners’ adjustment. Furthermore, researchers in both SLA and psychology may take academic adaptation into consideration when studying the adaptation of international students at tertiary level. The study highlights the need for longitudinal studies of academic adaptation by international students from different cultural backgrounds. Further research may consider sojourners’ country of origin to further examine whether students from different countries perform differently in China. Attention should be directed to examining
whether different measures of motivation will lead to different findings, which will contribute to the existing knowledge on SLA motivation research.

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