Predicting roles of linguistic confidence, integrative motivation and second language proficiency on cross-cultural adaptation

Baohua Yu\textsuperscript{a, *}, Huizhong Shen\textsuperscript{b, 1}

\textsuperscript{a} City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong
\textsuperscript{b} Faculty of Education and Social Work, The University of Sydney, Sydney NSW 2006, Australia

\section*{A R T I C L E  I N F O}

\begin{flushleft}
Article history:
Received 1 November 2010
Accepted 30 November 2010

Keywords:
Linguistic confidence in L2
L2 proficiency
Integrative motivation
Cross-cultural adaptation
International students
\end{flushleft}

\section*{A B S T R A C T}

This paper reported on the results of a questionnaire survey conducted with 198 Mainland Chinese international students across five different faculties in an Australian university studying for their bachelor, master and doctorate degrees. This research investigated the predicting effects of linguistic confidence in a second language (L2), integrative motivation and L2 proficiency on cross-cultural adaptation of Mainland Chinese international students in Australia. Results indicated that linguistic confidence in L2 was particularly important and L2 proficiency and integrative motivation were additionally important for both socio-cultural and academic adaptation for Mainland Chinese international students. In addition, differences in major study variables between faculties were examined and results indicated that students from the Faculty of Engineering and Information and those from the Faculty of Economics and Business respectively reported the highest and the lowest level of linguistic confidence, L2 proficiency and socio-cultural adaptation among the five faculties sampled. Implications to host institutions, host faculties, international students and future research were also considered in the paper.

© 2010 Elsevier Ltd. All rights reserved.

\section*{1. Background}

Studying in a multicultural environment has become overwhelmingly popular all over the world. Higher education in well-developed countries such as the United States, the United Kingdom, Australia, Canada, and New Zealand, have been receiving increasing numbers of international students mainly from Asian countries, particularly Mainland China in the past two decades (Marginson & McBurnie, 2004). Among English-speaking destinations, Australia was ranked as the third largest recipient of overseas higher education students behind the United States and the United Kingdom (Reserve Bank of Australia, 2008). Moreover, Australia hosted the highest proportion of international students in higher education tertiary type A programs in the Organisation for Economic Co-operation and Development (OECD), which accounted for one-tenth of the world market for international higher education (Bradley, Noonan, Nugent, & Scales, 2008).

The population of international students in Australian higher education has been increasing with a tremendous speed, growing from 21,000 in 1989 to over 250,000 in 2007, among which over 80% of international students are from Asia, including 21% from Mainland China (Bradley et al., 2008). While international students made great contributions to overseas academic communities (i.e. enriching culture diversity and bringing financial income), they often encountered challenges in adaptation to new learning contexts, with many facing daunting linguistic and academic challenges (Devos, 2003; Leder et al., 2003).
& Forgasz, 2004; Skyrme, 2007). In a recent study of international students in Australia, Sawir (2005) identified a number of problems (e.g. linguistic confidence, English proficiency and motivation) international students had in coping with second language (L2) and highlighted that the lack of confidence in speaking L2 was one of the more serious learning difficulties facing international students.

L2 research (cf. Dörnyei, 2005; Noels, Clément, & Pelletier, 2001; Noels, Pelletier, Clément, & Vallerand, 2000) consistently supported that motivation was a vital factor determining a learner’s success in learning languages. Moreover, integrative motivation was often believed to be more powerful than instrumental in a successful Second Language Acquisition (SLA) (Dörnyei, 1990; Gardner & Lambert, 1959, 1972). Research on motivation and adaptation also showed that integrative motivation played a very important and positive role in determining a successful socio-cultural/academic adaptation (Yu, 2010).

Previous research identified that difficulties with L2 and the target culture affected both academic and social-cultural adaptation (cf. Robertson, Line, Jones, & Thomas, 2000). However, there was little empirical research identifying what kinds of L2 variables were critical in cross-cultural adaptation, and even fewer showing how L2 variables affected cross-cultural adaptation. This research, for the first time, examined three L2-related variables in a single study, namely linguistic confidence, integrative motivation and L2 proficiency, and tested their predicting relationships with cross-cultural adaptation of Mainland Chinese international students in Australia.

2. Literature review

2.1. Cross-cultural adaptation of international students

Church (1982) argued that international students experienced difficulties elicited by the new culture in addition to the problems encountered by domestic students. In a similar way, more recent studies showed that international students encountered problems pertaining not only to socio-cultural adaptation, such as adjustment to social customs and norms (Schwarzer, Hahn, & Schröder, 1994), and psychological adaptation, such as feeling depressed, anxious, and lonely due to the loss of their social support networks (Sandhu & Asrabadi, 1994; Yang & Clum, 1995), but also academic adaptation such as worrying about their L2 proficiency and academic performance (Hayes & Lin, 1994; Kagan & Cohen, 1990; Ying & Liese, 1994). In the West, researchers in cross-cultural psychology have conducted a considerable amount of research on the acculturature of international students focusing on culture shock, socio-cultural adaptation and psychological adaptation, but little attention in this area has been directed to investigating students’ academic adaptation.

The primary goal of most international students was to obtain good academic results in the foreign institutions. Academic issues were at the forefront of both these students’ and their institutions’ concerns. Research showed that academic success would impact significantly on students’ socio-cultural adaptation and psychological well-being and vice versa (Li & Kaye, 1998). ‘Cross-cultural adaptation’ in this paper referred to international students’ socio-cultural and academic integration with the target language group. These two related aspects were seen as the two indices for measuring adaptation of international students in this study. This conceptualisation combined Ward’s notion of socio-cultural adaptation that referred to an individual’s ability to fit in or negotiate interactive aspects of the new cultural environment (Ward & Rana-Deuba, 1999) with Tinto’s academic adaptation that referred to an individual’s ability to be involved in positive educational outcomes (Tinto, 1993).

2.2. Relationship between second language proficiency and cross-cultural adaptation

Masgoret and Ward (2006) established an interactive model of the relationships between target language proficiency, communication competence, effective intercultural interaction and socio-cultural adaptation. Primarily, the core components of an international student’s socio-cultural adaptation were language proficiency and communication competence, supplemented by effective intercultural interaction, which in turn constituted a part of the broader construct of socio-cultural adaptation. Good proficiency in the target language was the basis of successful communication among members of different ethnonational communities (Dörnyei & Csizér, 2005). In a study abroad context, better language fluency was seen to be directly related to more interaction with members of the host culture and as such led to fewer socio-cultural adjustment problems (Ward & Kennedy, 1993). Other studies suggested that greater interaction with the host community would contribute to better competence in the host language (Clément, Noels, & Deneault, 2001). Ward (2004) concluded that target language skills helped establish social support and interpersonal relationships, which in turn facilitated adaptation.

Meanwhile, academic adjustment was also affected by L2-related factors for international students (Furnham & 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) concluded that difficulty with English language and culture was the primary factor affecting academic and socio-cultural adjustment. It was plausible to propose that L2 proficiency was positively correlated to socio-cultural/academic adaptation.

2.3. Relationship between linguistic confidence in L2 and cross-cultural adaptation

Past L2 research attempted to find out why some individuals sought, whereas others avoided, L2 communication from psychological, educational, linguistic, and communicative approaches (Brown, 1991; Skehan, 1989; Tucker, Hamayan, & Genesee, 1976). Communication anxiety and perceived communication competence were found as two of the strongest
predictors of Willingness to Communicate (WTC) in many studies (Baker & MacIntyre, 2000; MacIntyre, Clément, Baker, & Conrad, 2001; McCroskey & Richmond, 1991). Communication anxiety was first introduced by McCroskey (1977), referring to the level of fear associated with actual or anticipated communication. In a given communication situation, it was the perceived communication competence, the belief that one could communicate effectively (McCroskey & Richmond, 1990), which would ultimately determine the choice of whether to communicate though the actual competence might also influence communication. As Clément (1980) defined, perceived communication competence in the L2 together with a lack of language anxiety consisted of linguistic confidence.

In the social context model (Clément, 1980; Clément & Kruidenier, 1985), frequent and pleasant contact with the L2 group was proposed to enhance linguistic confidence at varied levels, which, in turn, was associated with increased communication competence in the L2, increased identification with the L2 group, and increased psychological adaptation (Noels & Clément, 1996; Noels, Pon, & Clément, 1996).

Linguistic confidence was an important predictor of foreign language proficiency (Clément, Dörnyei, & Noels, 1994). This referred to one's confidence in being able to communicate in an adaptive and efficient way when using the L2 (Clément & Bourhis, 1996). Due to the close interactive relationship between foreign language proficiency and socio-cultural adaptation (Masgoret & Ward, 2006), and the direct effect of L2 confidence on willingness to communicate (WTC) (MacIntyre, Dörnyei, Clément, & Noels, 1998), it was inferred that linguistic confidence would exert a critical effect on the degree of socio-cultural adaptation. In a broader sense, such relationship might also exist between linguistic confidence in L2 and academic adaptation.

2.4. Relationship between integrative motivation and cross-cultural adaptation

Researchers, practitioners, and parents in both Western and non-Western countries have long considered that motivation is an essential factor for successful SLA (Dörnyei, 2005; Noels et al., 2001, 2000). Language-related variables such as integrativeness and motivation played very important roles in the cultural learning process and socio-cultural adaptation (Masgoret & Ward, 2006). The underlying dynamics were attributed to the fact that a high level of integrativeness contributed to the prediction of a high degree of motivation (Masgoret & Gardner, 2003), and both were associated with high levels of intercultural contact (Masgoret & Gardner, 1999). Moreover, increased intercultural contact and satisfaction with that contact were supposed to be associated with fewer socio-cultural difficulties (Ward & Kennedy, 1993; Ward & Searle, 1991).

Integrative motivation was a complex of attitudinal, goal-directed, and motivational attributes. It concerned a positive affective disposition towards the L2 community and the desire to achieve L2 proficiency in order to be a member of and develop a sense of belonging to L2 community (Gardner & Lambert, 1972; Lightbown & Spada, 1999). Individuals with intensive integrative motivation would have regular contact or communication with members of L2 group through using L2, which could ultimately improve their cross-cultural adaptation.

In a nutshell, the paper identified three important L2-related factors that were important to an effective cross-cultural adaptation. It included academic adaptation to measure cross-cultural adaptation. More specifically, the goals of the study were to find out: (1) how much variance of academic adaptation could be accounted for by the three L2-related factors, (2) how much variance of socio-cultural adaptation could be accounted for by the three L2-related factors, and (3) if there were differences in integrative motivation, linguistic confidence, L2 proficiency, and socio-cultural/academic adaptation between faculties.

Based on the above studies, the following two hypotheses were posited:

**Hypothesis 1.** Linguistic confidence in L2, integrative motivation and L2 proficiency positively relate to socio-cultural adaptation.

**Hypothesis 2.** Linguistic confidence in L2, integrative motivation and L2 proficiency positively relate to academic adaptation.

Different faculties might make different pedagogical adjustments to support the learning needs of international students (Robertson et al., 2000), and evidence supported the view that some faculty made accommodations for weak English-language proficiency in course requirements and on assessments (Ramburuth, 2001). Based on these studies, it is reasonable to assume that different supports from different faculties will vary the difficulty of students' cross-cultural adaptation. In a broader sense, students' L2 proficiency, integrative motivation and linguistic confidence in L2 will also vary with different supports and selection criteria of different faculties. Therefore, we generated **Hypothesis 3** as follows:

**Hypothesis 3.** There were differences between faculties in integrative motivation, linguistic confidence in L2, L2 proficiency, and socio-cultural/academic adaptation.
Table 1  
Background characteristics of the sample.

<table>
<thead>
<tr>
<th></th>
<th>Frequency (N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>141</td>
<td>71.2</td>
</tr>
<tr>
<td>Male</td>
<td>57</td>
<td>28.8</td>
</tr>
<tr>
<td>Residential time (months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1–12</td>
<td>132</td>
<td>71.0</td>
</tr>
<tr>
<td>13–24</td>
<td>32</td>
<td>17.2</td>
</tr>
<tr>
<td>25–36</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>≥37</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–22</td>
<td>41</td>
<td>20.7</td>
</tr>
<tr>
<td>23–27</td>
<td>133</td>
<td>67.2</td>
</tr>
<tr>
<td>28–32</td>
<td>16</td>
<td>8.1</td>
</tr>
<tr>
<td>33–40</td>
<td>8</td>
<td>4.0</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>18</td>
<td>9.1</td>
</tr>
<tr>
<td>Master/MPhil</td>
<td>167</td>
<td>84.3</td>
</tr>
<tr>
<td>Doctor/PhD</td>
<td>10</td>
<td>5.1</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>178</td>
<td>89.9</td>
</tr>
<tr>
<td>Married</td>
<td>20</td>
<td>14.1</td>
</tr>
</tbody>
</table>

3. Method

3.1. Procedure and participants

The study adopted quantitative research methods, based on a questionnaire survey conducted on a group of Mainland Chinese international students studying on the main campus of the University of Sydney. Ethical approval was obtained from the Human Research Ethics Committee at the University. An invitation letter was sent to all faculties explaining the purpose and confidential and voluntary nature of this study. Five faculties (Arts, Economics and Business, Education and Social Work, Engineering and Information, Science and Medicine) offered support and invited all Mainland Chinese international students to participate in the online survey established by the researchers through both e-mails and notice boards. It should be noted that the Faculty of Economics and Business hosting the majority of international students in the University was one of the five faculties. Meanwhile, hard copies of the questionnaires were sent to classrooms where course teachers were willing to assist with the distribution of the questionnaires. A souvenir was sent on request to the participant who completed the questionnaire. Data collection lasted from July to November in 2007.

Background information was sought from the student sample and included: age (measured in years), gender (measured with 0 = female and 1 = male), marital status (measured with 0 = unmarried and 1 = married), level of education (measured with 1 = undergraduate, 2 = master, 3 = doctor or PhD, and 4 = others) and residential time (measured in months). The descriptive data of respondents’ background characteristics were reported in Table 1.

A total of 198 Mainland Chinese international students (141 females, 57 males) completed and returned the questionnaire, with 18 undertaking undergraduates, 167 masters and 10 doctors or PhDs, and 3 others. They aged from 18 to 40 (mean = 24.30, SD = 3.41). Among them, 71% of them were unmarried. Residential time in Australia ranged from 1 month to 8 years (mean = 12.60, SD = 15.27).

3.2. Measures

The survey questionnaire consisted of a questionnaire that included the following 10 scales.

3.2.1. Integrativeness

The 3-item scale from the Mini Attitude/Motivation Test Battery (AMTB) in Hashimoto’s (2002) study was an abbreviation of Gardner (1985) scale with the same name. It was a measure of the degree to which respondents chose to learn English in an attempt to interact and communicate with local English people. Single items assessed integrative orientation, attitude towards English people, and interest in foreign languages. A high score of this scale represented an individual’s willingness and interest in having social interaction with Australian people.

3.2.2. Motivation

It was also a 3-item scale from Hashimoto (2002), which assessed motivation intensity, desire to learn English and attitudes towards learning English. A high score on this scale indicated that considerable effort was paid to studying English.
3.2.3. **Instrumental orientation**

It was a 1-item scale on a 5-point Likert scale from 1 (very low) to 5 (very high) based on study of Hashimoto (2002). This scale examined to what extent a student’s English learning was to achieve practical goals.

3.2.4. **Language anxiety**

It was a 1-item scale from Hashimoto (2002), assessing the degree of anxiety when speaking English on a 5-point Likert Scale from 1 (very calm) to 5 (very nervous). A high score of this scale indicated a high level of anxiety in speaking English.

3.2.5. **Perceived communication competence in English**

It was assessed by 12-item self-judgments of communication competence from MacIntyre and Charos (1996) on a 5-point Likert scale from 1 (very incompetent) to 5 (very competent). A high score on this scale indicated strong communication ability in English self-evaluated by the respondent.

3.2.6. **Integrative motivation**

Gardner (2005) pointed out that researchers could either aggregate measures of constructs or aggregate the constructs in AMTB depending on different research purposes. Following Masgoret (2006), *integrative motivation* was assessed by aggregating integrativeness, motivation and instrumental orientation, which were described above and assessed on the Mini-AMTB in Hashimoto’s (2002) study. The Mini-AMTB uses single-item indicator to measure each variable, also known as the “Guilford” style instrument, has been justified to have acceptable convergent and predictive validity (Gardner & MacIntyre, 1993). The scale was set out on a 5-point Likert scale. A high score on this scale indicated that a positive affective disposition towards the Australian community and the desire to achieve English language proficiency in order to participate in and develop a sense of belonging to the Australian community.

3.2.7. **Linguistic confidence**

It was Clément and his colleagues who first introduced *linguistic confidence* into L2 motivation research (Clément, 1980; Clément, Gardner, & Smythe, 1977). Following Clément (1980), the study computed “linguistic confidence” by subsuming perceived communication competence in English together with a lack of *language anxiety*. The 1-item language anxiety was recoded so that a high score represented a lack of anxiety before this item was combined with the items of perceived communication competence. A high score on linguistic confidence represented a confident and anxiety-free belief that the mastery of a L2 was well within the respondent’s means.

3.2.8. **L2 proficiency**

Following Ying and Liese (1991), L2 proficiency was assessed by four items, self-rating of the ability to listen, speak, read and write English on a 5-point Likert scale from 1 (poor user) to 5 (expert user).

3.2.9. **Socio-cultural adaptation**

Socio-cultural adaptation was measured using an adapted 29-item Socio-cultural 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 sixteen cross-sectional samples, four longitudinal samples and one paired comparison between sojourning and sedentary samples. This measure tested the level of difficulty students experienced in adjusting to the Australian society and culture. Ratings were made on a 5-point Likert scale from 1 (extreme difficulty) to 5 (no difficulty). A high score on this scale indicated a low level of difficulty in socio-cultural adaptation.

3.2.10. **Academic adaptation**

It was a 12-item Persistence/Voluntary Dropout Decision Scale (Pascarella & Terenzini, 1980) on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). A high score on this scale represented a high level of interaction with faculty (academics) and good academic and intellectual development.

3.3. **Analysis of dada**

Hierarchical regression analyses were used to test hypothesized relationships between L2-related variables and cross-cultural adaptation (Cohen & Cohen, 1983). First, the control variables were entered in the regression equations: age, gender, marital status, level of education and residential time. Next, the three L2-related variables were entered into the regression equations to determine their incremental contributions to the variance accounted for in the socio-cultural/academic adaptation. Analysis of variance (ANOVA) was performed in order to compare the differences of socio-cultural/academic adaptation and its L2-related predictors between faculties.
Table 2
Internal reliability, means and standard deviations of the measures.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Cronbach’s alpha coefficients</th>
<th>Mean (S.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative motivation</td>
<td>0.84</td>
<td>26.92 (4.36)</td>
</tr>
<tr>
<td>Linguistic confidence</td>
<td>0.91</td>
<td>44.38 (8.95)</td>
</tr>
<tr>
<td>L2 proficiency</td>
<td>0.91</td>
<td>11.31 (2.98)</td>
</tr>
<tr>
<td>Socio-cultural adaptation</td>
<td>0.93</td>
<td>103.08 (15.83)</td>
</tr>
<tr>
<td>Academic adaptation</td>
<td>0.80</td>
<td>61.43 (8.35)</td>
</tr>
</tbody>
</table>

Table 3
Hierarchical regression analysis of effects of demographic factors, L2 proficiency, integrative motivation, linguistic confidence on socio-cultural adaptation.

<table>
<thead>
<tr>
<th>Block 1: Control variables</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>R²</th>
<th>ΔR²</th>
<th>F change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential time</td>
<td>0.13</td>
<td>0.05</td>
<td>0.22**</td>
<td>0.09</td>
<td>0.09</td>
<td>3.68*</td>
</tr>
<tr>
<td>Age</td>
<td>−0.07</td>
<td>0.07</td>
<td>−0.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td>0.03</td>
<td>0.07</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>−0.04</td>
<td>0.04</td>
<td>−0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>0.12</td>
<td>0.05</td>
<td>0.21*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2: Predictors</td>
<td></td>
<td></td>
<td>0.37</td>
<td>0.28</td>
<td></td>
<td>26.50***</td>
</tr>
<tr>
<td>L2 proficiency</td>
<td>0.11</td>
<td>0.04</td>
<td>0.16*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrative motivation</td>
<td>0.07</td>
<td>0.03</td>
<td>0.13*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linguistic confidence</td>
<td>0.26</td>
<td>0.04</td>
<td>0.45***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*, **, *** p < 0.05, 0.01, 0.001.

4. Results

4.1. Preliminary analysis

The absolute value of the skewness and kurtosis of all the tested variables was in the range of 0.014–0.938 and 0.009–0.986 for this sample. A value with less than 2 for skewness and 7 for kurtosis suggests a normal distribution of the variable. Tests for normality showed that all the major variables did not significantly deviate from normality. The alpha coefficients of the major study variables ranged from 0.80 to 0.93 (see Table 2), indicating they were sufficient for further analysis based on the criterion proposed by Nunnally (1978).

4.2. Major analyses

To test Hypothesis 1, hierarchical regression analyses were performed to determine the independent predictive effects of the demographic variables and L2-related variables (including L2 proficiency, integrative motivation and linguistic confidence in L2) on socio-cultural adaptation. Two models were tested by regression analyses for the student sample using socio-cultural adaptation as dependent variables, with the centred background variables in Block 1 and centred L2 proficiency, integrative motivation and linguistic confidence in L2 in Block 2.

Table 3 presented the regression models estimated. Data indicated that R was significantly different from zero at the end of each step. Results showed that demographic variables and L2-related variables uniquely accounted for a significant 9% and 28% of the variance of socio-cultural adaptation, respectively. Specifically, L2 proficiency, integrative motivation, and linguistic confidence were significant predictors of socio-cultural adaptation. Taken together, linguistic confidence was found to be the strongest predictor of socio-cultural adaptation. Hypothesis 1 was therefore supported.

Again, hierarchical regression analyses were performed for academic adaptation with the same procedure as socio-cultural adaptation in order to test Hypothesis 2. Table 4 presented the regression models estimated. Results showed that demographic variables had no significant predictive effect on academic adaptation for the student sample. L2-related variables uniquely accounted for a significant 24% of the variance of academic adaptation. Specifically, L2 proficiency, integrative motivation and linguistic confidence in L2 were significant predictors of academic adaptation for the student sample. Taken together, linguistic confidence was the strongest predictor of academic adaptation, followed by integrative motivation and L2 proficiency. Hypothesis 2 was supported.

To test Hypothesis 3, ANOVA was performed to test the possible differences among five faculties in major study variables. Because of the relatively small sample size of students from the other four faculties except for those from the Faculty of Economics and Business (n = 121), an alpha of 0.05 (two-tailed) was retained to minimize Type II error that could result in missing small group differences. Means, standard deviations, and results of F-tests appeared in Table 5.

No significant differences were found across the five faculties on score for integrative motivation [F(4,193) = 1.16, p = 0.329]. Significant differences were found on scores for linguistic confidence [F(4,193) = 3.24, p = 0.013], L2 proficiency
### Table 4
Hierarchical regression analysis of effects of demographic factors, L2 proficiency, integrative motivation, linguistic confidence on academic adaptation.

<table>
<thead>
<tr>
<th>Block 1: Control variables</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>R²</th>
<th>ΔR²</th>
<th>F change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential time</td>
<td>0.02</td>
<td>0.05</td>
<td>0.04</td>
<td>0.03</td>
<td>0.03</td>
<td>1.26</td>
</tr>
<tr>
<td>Age</td>
<td>−0.01</td>
<td>0.07</td>
<td>−0.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td>−0.00</td>
<td>0.08</td>
<td>−0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.04</td>
<td>0.04</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>0.10</td>
<td>0.05</td>
<td>0.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2: Predictors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L2 proficiency</td>
<td>0.10</td>
<td>0.05</td>
<td>0.15*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrative motivation</td>
<td>0.15</td>
<td>0.04</td>
<td>0.28***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linguistic confidence</td>
<td>0.18</td>
<td>0.04</td>
<td>0.30***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05.
***p < 0.001.

### Table 5
Faculty differences in major study variables.

<table>
<thead>
<tr>
<th></th>
<th>Engineering and information (n = 14)</th>
<th>Science and medicine (n = 9)</th>
<th>Education and Social work (n = 23)</th>
<th>Arts (n = 31)</th>
<th>Economics and business (n = 121)</th>
<th>F (Sig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean SD</td>
<td>Mean SD</td>
<td>Mean SD</td>
<td>Mean SD</td>
<td>Mean SD</td>
<td></td>
</tr>
<tr>
<td>Integrative motivation</td>
<td>3.83 0.60</td>
<td>3.94 0.63</td>
<td>3.95 0.52</td>
<td>4.04 0.40</td>
<td>3.96 0.68</td>
<td>1.16</td>
</tr>
<tr>
<td>L2 proficiency</td>
<td>4.10 0.48</td>
<td>3.38 0.58</td>
<td>3.28 0.63</td>
<td>3.30 0.88</td>
<td>3.19 0.76</td>
<td>3.24***</td>
</tr>
<tr>
<td>Socio-cultural adaptation</td>
<td>4.23 0.39</td>
<td>3.74 0.50</td>
<td>3.74 0.52</td>
<td>3.80 0.45</td>
<td>3.39 0.51</td>
<td>10.55***</td>
</tr>
<tr>
<td>Academic adaptation</td>
<td>3.63 0.68</td>
<td>3.61 0.50</td>
<td>3.52 0.50</td>
<td>3.41 0.53</td>
<td>3.25 0.54</td>
<td>3.10</td>
</tr>
</tbody>
</table>

*p < 0.05.
***p < 0.001.

\[F(4, 193) = 8.26, p = 0.000\], socio-cultural adaptation \[F(4, 193) = 10.55, p = 0.000\], and academic adaptation \[F(4, 193) = 3.10, p = 0.017\].

Post hoc comparisons using the Tukey HSD test indicated that the mean score for the Faculty of Engineering and Information \((M = 4.10, SD = 0.48)\) was significantly higher than the Faculty of Arts \((M = 3.30, SD = 0.88)\), the Faculty of Economics and Business \((M = 3.19, SD = 0.76)\), and the Faculty of Education and Social Work \((M = 3.28, SD = 0.63)\) in linguistic confidence; the mean score for the Faculty of Economics and Business \((M = 2.62, SD = 0.62)\) was significantly lower than the Faculty of Engineering and Information \((M = 3.61, SD = 0.73)\), Faculty of Arts \((M = 3.12, SD = 0.95)\), and the Faculty of Education and Social Work \((M = 3.11, SD = 0.62)\) in L2 proficiency, and the mean score for the Faculty of Economics and Business \((M = 3.39, SD = 0.51)\) was significantly lower than the Faculty of Engineering and Information \((M = 4.23, SD = 0.39)\), the Faculty of Arts \((M = 3.80, SD = 0.45)\), and the Faculty of Education and Social Work \((M = 3.74, SD = 0.52)\) in socio-cultural adaptation.

Taken together, these results suggested that students from the Faculty of Engineering and Information and those from the Faculty of Economics and Business respectively reported the highest and the lowest level of linguistic confidence. L2 proficiency as well as socio-cultural adaptation among the five faculties sampled. Thus, Hypothesis 3 was partially supported.

### 5. Conclusions

#### 5.1. Linguistic confidence in L2 as a major predictor of cross-cultural adaptation

Linguistic confidence in L2 was found to be a critical predictor of both socio-cultural and academic adaptation. Previous research documented that increased linguistic confidence in L2 was associated with increased identification with the L2 group and increased psychological adaptation (cf. Noels & Clément, 1996; Noels et al., 1996), but there was no direct empirical evidence on the relationships between linguistic confidence in L2 and socio-cultural/academic adaptation. This study confirmed that linguistic confidence in L2 was a strong predictor for cross-cultural adaptation, and further indicated that it was a better predictor of cross-cultural adaptation than integrative motivation and L2 proficiency. Self-confidence in using English as L2 was related to linguistic acculturation and might also be related to cultural acculturation in certain contexts (Dion, Dion, & Pak, 1990; Pak, Dion, & Dion, 1985). That might help explain why linguistic confidence was so crucial for effective socio-cultural adaptation of international students sampled.

The best predictor of academic adaptation was linguistic confidence in L2 too. The possible reason was as follows. The ability to communicate with academics and fellow students was essential to trans-cultural adaptation in an academic setting (Zimmerman, Ramirez-Valles, Washienko, Walter, & Dyer, 1996). Linguistic confidence in L2 was found as the strongest predictor of WTC in many studies (cf. Baker & MacIntyre, 2000; MacIntyre et al., 2001; McCroskey & Richmond, 1991). Therefore, it was through communication that international students learnt to relate to the learning environment and were
able to fulfil various academic tasks. Consequently, harmonious academic adaptation occurred when international students were capable of communicating with L2 group (Kim, 1988) including academics and peers, which was facilitated by an enhanced confidence in L2.

5.2. Integrative motivation as a significant predictor of cross-cultural adaptation

Integrative motivation turned out to play a significant role in the process of cross-cultural adaptation in the students sampled. It was found to be a significant predictor of both socio-cultural and academic adaptation and a better predictor of academic adaptation than L2 proficiency. According to Dörnyei (2003), the core aspect of integrative disposition laid in identification with the L2 community psychologically and emotionally. For the Mainland Chinese international students in this research, the L2 community was mainly local community off campus and the faculty staff and their classmates on campus. A high degree of integrative motivation would directly determine a high degree of interaction with local people and faculty members and classmates. Such a high level of interaction could enhance cross-cultural adaptation (Yu, 2010), especially academic adaptation (Tinto, 1993; Yu, 2010).

5.3. Faculty differences in study variables

This study found significant differences in the major study variables except for integrative motivation. Post-hoc comparison suggested that students from the Faculty of Engineering and Information reported significant higher level of linguistic confidence while those from the Faculty of Economics and Business reported significant lower level of L2 proficiency and socio-cultural adaptation than the rest. On the whole, students from the Faculty of Engineering and Information and students from the Faculty of Economics and Business scored highest and lowest in major study variables except for integrative motivation. It should be noted that the majority of the student sample was from the Faculty of Economics and Business, which suggested that majors relating to Economic and Business were very popular among Mainland Chinese international students. However, students from that Faculty seemed not satisfied with their socio-cultural adaptation and not confident in their L2 competence, and they reported low level of L2.

The above findings could be interpreted in two perspectives. Firstly, L2-related variables turned out to play predicting roles in academic/socio-cultural adaptation. Previous studies found that international students faced many challenges elicited by new cultural and academic tasks, and those challenges were often related to difficulties with the English language and culture, which affected both academic and social-cultural adaptation (Robertson et al., 2000). This study appeared to agree on the positive relationships between L2-related variables and academic/socio-cultural adaptation, and further proposed that the differences in L2-related variables might account for the differences in academic/socio-cultural adaptation between faculties.

Secondly, the differences between the faculties suggested that students’ academic/socio-cultural adaptation might vary with different degrees of understanding and support from the different faculties. Faculty often misinterpreted the behaviour and attitudes of international students (Andrade, 2006). For example, international students often attributed their lack of participation to the difficulty with the L2, anxiety and lack of confidence (Robertson et al., 2000). Professors, conversely, perceived this lack of involvement to be cultural rather than linguistic. In such a way, faculty academics might not be fully prepared for teaching international students by the most effective approach. In order to help international students’ adaptation, it would be very useful to have a deep understanding of international students’ needs in and outside of the classroom, and provide relevant training or tailor-made programs for international students.

6. Limitations

Limitations of the current study should be noted. Due to ethical issues, the survey was conducted in only one Australian university, and the generalisation of the findings to all the Mainland Chinese international students in Australia should therefore be interpreted with caution. Meanwhile, group size should be equal or approximately equal in ANOVA according to Tabachnick and Fidell (2007). However, in the present study, students from the Faculty of Economics and Business accounted for 61% of the whole student sample, which was far bigger than those from the other four faculties. Thus conclusions from the results of ANOVA should also be interpreted with caution.

7. Implications and strategies

This research brought practical implications for host institutions, host faculties and international students. Although difficulties arose along with every cultural contact, frequent and pleasant contact with the L2 group would lead to high linguistic confidence (Noels & Clément, 1996; Noels et al., 1996), which, in turn, would contribute to a satisfactory adaptation of international students in a foreign country. The aforementioned findings suggested that it was essential for the host institutions, faculties and student support offices to be aware of what kinds of supports were needed by and available to international students when they landed on a foreign country and a foreign campus. Such knowledge would allow institutions and departments to work closely with each other and organize appropriate induction programs and socio-cultural events. Package information needs to be widely circulated and international students should be encouraged to actively participate
in the events in order to ease their worries for better cross-cultural adaptation. For example, orientations of the campus and of the city and workshops on facilities access would help newly-arrived international students quickly adapt themselves to the new learning environment and develop skills and strategies to cope with unique academic and study challenges.

Considering the crucial role of linguistic confidence in English in the process of cross-cultural adaptation, language support programs such as face-to-face L2 communication outside classrooms and language learning supports need to be designed for international students, which was also suggested in a study on Mainland Chinese students in the UK (Li, Chen, & Duannu, 2009). In addition, faculties or departments could establish a buddy system in which international students can participate with local students in socio-cultural and academic activities so as to increase more cultural contacts, which would help international students to reduce their language anxiety level and improve their confidence in communicating in English. Moreover, in order to create a culturally diversified classroom and to increase intercultural communication opportunities, faculties may consider taking ethnicity into consideration when recruiting international students in a certain disciplinary area. A balance needs to be achieved between the proportion of international students and that of local students.

The expectation–reality discrepancy approach revealed that expectations about cross-cultural difficulties were related to actual difficulties in sojourner adaptation (Searle & Ward, 1990). Here students from Faculty of the Economics and Business reported more socio-cultural problems than others, which might be attributed to there being more discrepancies between their expectations and the reality of socio-cultural problems compared to other faculty students. Making careful psychological and academic preparation for their overseas study and life was good advice that international students should follow. More specifically, Jaboc and Greggo (2001) suggested that international students should know their problems, be ready to develop friendships with diverse peer groups, understand non-verbal behaviour, be ready to communicate with teachers, and be ready to be involved in the university community.

This study also shed light on future research. This study was cross-sectional in nature, which did not allow a test of the causal predominance of the variables or changes over time because time precedence was needed for both tests. Therefore, future studies can be designed to be longitudinal because such data are important for establishing causal relationships (Bong, 1996). Meanwhile, the three L2-related variables were found to be significant in predicting the variance of academic/socio-cultural adaptation with linguistic confidence being the best predictor. Such findings may help lay a good foundation for future research to propose a model, aiming to find out the interactions between L2-related variables and how these L2-related factors affect cross-cultural adaptation. It is also meaningful for future researchers to go further to investigate cultural characteristics of international students and see how individual cultural traits influence students’ different style of adaptation.

Acknowledgements

The initial report of this study was presented at TESOL Research Network Colloquium 2009 on September 5, 2009, at the University of Sydney, Sydney, Australia. This research was supported by 2007 Endeavour Australian Cheung Kong Awards from Australian government. The authors would like to express their deepest appreciation to Professor Barbara Fawcett, Dr. Kevin Laws and Dr. Lindy Woodrow for their professional support and advice on this research project, the students from the University of Sydney for their voluntary participation, and the Faculty of Education and Social Works for the technical support in establishing an online survey for this research.

The authors would also like to deeply thank the Editor, Professor Dan Landis, and two anonymous reviewers for their very constructive and invaluable comments that helped enhance the quality of this manuscript.

References


Baohua Yu obtained her PhD at the University of Hong Kong. Her major fields of research are second language acquisition, applied linguistics and cross-cultural psychology.

Huizhong Shen is an active researcher in the disciplines of secondary languages education, TESOL and cultural differences. His current research interests are in second and foreign language pedagogies, foreign Language teacher education, ICT in language teaching and learning, cross-cultural differences in English language teaching and researching Chinese English as an emerging variety of English.