A Longitudinal Investigation of Cultural Adjustment and Mood Changes in two university students studying abroad

Tohoku Psychologica Folia
2009, 68, 25－37

A longitudinal investigation of cultural adjustment and mood changes in two university students studying abroad

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This longitudinal study assessed the adjustment processes of two Japanese university students, A and B, who participated in exchange programs in Australia and the United Kingdom. Participants were asked to complete a Profile of Mood States (POMS) and a Daily Life and Life Event questionnaire (student A — daily, and student B — weekly) pre-departure, during the semesters abroad, and again once they returned. The daily data from A for approximately one year were employed for statistical analysis, while the data from B were used to cross-validate the results of A. A stepwise multiple regression analysis revealed that that the students' activities determined mood changes, not their length of time abroad. It also indicated the importance of good interpersonal relationships and basic daily habits, including exercise and diet, on maintaining a positive mood. Additional analyses of POMS scores revealed that mood was relatively low on weekdays, improved and peaked on Saturdays, then decreased on Sundays. The results from this investigation suggest the timing of a longitudinal study is important for accurate results.

Key words: cultural adjustment, longitudinal study, Profile of Mood States, multiple regression analysis

Introduction

When an individual moves into an unfamiliar environment, he must adopt the local culture in order to start a new life. Culture shock, an idea first proposed by the anthropologist Oberg (1960, p.177), is a negative mood state, a cross-cultural transition experienced by a person surrounded by unfamiliar things. Those who are going through culture shock tend to suffer from physical, mental, and social problems as a result of acute stress (Berry, Kim, Minde, & Mok,1987).

Since the 1950s, research on cultural adjustment processes has been undertaken to understand transitional experiences. There are two major descriptive approaches, the first being the Stage Model. Oberg (1960, p. 178) described four stages: "honeymoon," "crisis," "recovery," and "adjustment." Adler (1975, p. 19) suggested a transition model with five stages: "contact," "disintegration," "reintegration," "autonomy," and "independence." Inamura (1980, p. 162) also proposed a model with five phases: "migration," "dissatisfaction," "disassociation,"

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"adjustment," and "homesick."

The second approach is that of curve theory, which suggests that an individual's level of adjustment to a new environment progresses over a period of time and can be described by a curved line. One curve theory is the "U-curve" pattern of adjustment, which describes an individual as going through four phases: firstly, an individual is delighted in the host culture; secondly, he or she experiences "crisis" and undergoes maladjustment; thirdly, the individual is filled with "loneliness;" finally, he or she becomes fully comfortable in the new society and thrives in it (Lysgaad, 1955, p. 49). Gullahorn and Gullahorn (1963) proposed a "W-curve," which indicates that an individual experiences U-curve patterns of adjustment again upon returning home (p. 41).

There are many critics of stage models and curve hypotheses due to the fact that these theories are not based on actual data. Also, Furnham and Bochner (1990) pointed out that previous research did not adopt a standardized independent variable, a clear concept of adjustment, or unambiguous definitions of U- and W-curve hypotheses, and that only a small number of longitudinal studies had been performed. The research of other groups also showed that U- and W-curve theories were never validated (Brown, 1998; Church, 1982; Kealy, 1989; Ward, Okura, Kennedy, & Kojima, 1998). However, it can be said that both stage theory and curve hypothesis models provide important indicators that cultural adjustment becomes complete with the passing of time.

In cultural adjustment research, one must consider the differences in adjustment processes that take place over short time frames (e.g., students studying abroad, employees posted overseas) and over longer ones (e.g., immigrants). Because there has not been enough research on short time period adjustment, this research specifically focuses on students adjustment processes.

Those who are experiencing cultural transitions are likely to suffer from considerable stress. However, students are susceptible to confronting a particular constellation of problems not faced by other groups (Furnham & Trezise, 1983). Furnham et al. (1983) mentioned that international students encounter three difficulties: the same types of troubles faced by anyone living in an unfamiliar culture (i.e., racism, limited food choices, communication difficulties, etc.), typical adolescent hardships that young persons in any place may experience, and the considerable pressure which comes from tackling high-level academic tasks. Compared with employees or immigrants, it is possible that international students experience specific anxieties; therefore, the present research pays particular attention to the cultural adjustment processes of this population.

Although adjustment processes take place over an extended period of time, few longitudinal investigations have been done. Uehara (1992) carried out longitudinal research to examine the relationship between the amount of time students spent in a new location and the aspects of their lives that that required adaptation to the new culture. She asked 38 international students living in Japan to complete a questionnaire, the adjustment scale for foreign students, at three time periods: within ten days of arrival, after six months, and after 18 months. Uehara's scale defined five areas in which international students accommodated themselves to their new surroundings: (a) study, (b) health, (c) interpersonal relationships, (d) culture, and (e) residential environment and economic situation. The results showed significant changes in the areas of study, personal relationships, and residential environment and economic situation. In brief, Uehara's study

affirmed that students become accustomed to their new environment over time.

Ward et al. (1998) examined the psychological and socio cultural adjustment of 35 Japanese students in New Zealand at four time periods: within 24 hours of arrival, and after 4, 6, and 12 months. Analysis of data from the Social Adjustment Scale (SCAS) and the Zung Self-Rating Depression Scale (ZSDS) indicated that the students felt the most stress when they first arrived; thus, Ward et al. (1988) concluded that students face the most severe adjustment difficulty when they enter a new culture.

Brown (1998) asked 181 American university students who were involved in exchange programs to complete a Profile of Mood States (POMS) at three time periods: before travel to their destination, while abroad and after their return. The results showed that students experienced significantly less negative while abroad and after returning than during the pre-entry phase; in other words, students had a more pronounced negative mood prior to departure.

Similarly, Sasaki and Mizuno (2000) asked 45 foreign Japanese teachers learning Japanese to fill out the adjustment scale for foreign students (Uehara, 1992) three times: within three weeks of arrival, and after three and nine months. An analysis of variance (ANOVA) using the adjustment scale measurement as the dependent variable and the time period as the independent variable showed that time impacted the following areas: (a) study and research, (d) culture, and (e) residential environment and economic situation. Time had no significant effect on degree of loneliness.

These longitudinal studies suggest that a student's cultural adjustment improves over time, and adjustment problems and emotional states shift depending on the phase of the student's international visit. However, the results are not consistent, which is probably because each of the studies employed different time frames and independent variables, and there was little consistency in the types of questions included in the questionnaires.

There are two approaches to investigating the effect of time on cross-cultural adjustment: the first is to analyze data collected from a large number of participants at a few time periods, while the second is to evaluate the data from a few subjects who provide full records assessed on a daily basis. The latter is a qualitative approach and allows the researcher to investigate the adjustment process in detail. Despite these advantages, no daily investigation using standard measures has ever been conducted.

The current study, therefore, aims to identify the factors that predict emotional change in two exchange students over approximately one year, especially focusing on daily or weekly mood changes. Emotional change was examined with POMS, and a questionnaire designed to assess many aspects of life abroad was used to determine the factors that affect mood change.

Method

Participants

We studied two Japanese undergraduate university students (A and B) who were participating in inter-university exchange programs. Participant A (female, 22 years old) enrolled as a full-time student for a year at an Australian university. Participant B (Female, 20 year-old) had studied at a university in Britain for about 10 months.

While participant A was in Australia, she shared a flat with other international students. In her first semester, she enrolled in lectures, tutorials, and laboratory work for a total of 13 hours per week, and in the second semester her academic commitment totaled 19.5 hours per week. Participant B lived in a flat with British students. During each of three terms she registered for lectures and tutorials totaling six hours per week.

Materials

This study employed three questionnaires that assessed personality, emotional state, and life events.

Maudsley Personality Inventory: MPI. Personality was tested because it affects cultural adjustment. MPI includes measurements of extraversion-introversion and neuroticism (MPI Institute, 1997).

The Profile of Mood States: POMS. This instrument assesses five negative moods (tension, depression, anger, confusion, and fatigue) and one positive mood (vigor). POMS is frequently used in a variety of research, including various cultural adjustment studies (Brown, 1998; Ward & Kennedy, 1993; Ward & Searle, 1991).

Daily Life and Life Events Questionnaire. This version of the adjustment scale for foreign students (Uehara, 1992) was modified by the addition of three new areas: trouble, communication with Japan, and life events (bringing the total to 44 items). Uehara's (1992) adjustment scale was widely applied in a student's adjustment study (e.g., Jou & Fukada, 1995; Sasaki et al., 2000). Each of the 44 items was adapted so as to enable the students to describe what happened daily or weekly as accurately as possible. The 44 items were categorized as follows. All items whose scale of measurement is not specified were scored on a 2-point scale.

1. Study and research (9 items): attended classes, wrote papers, gave a presentation, took exams, busy with preparation for classes, confused by the university facilities, unable to understand material presented in classes (2-point scales: 1 [yes], 2 [no]), found classes interesting, and saw improvements in research work (7-point scales: from 1 [not at all] to 7 [very much]).
2. Health and diet (8 items): ate tasty food, ate balanced food, ate novel food (7-point scales); maintained poor physical condition, slept well, and exercised; drank alcohol (2-point scales).
3. Interpersonal relationships (4 items): maintained satisfactory interpersonal relationships, talked to others, was spoken to (7-point scales), and made new friends (2-point scale).
4. Contact with the host culture and climate (5 items): developed language abilities, perceived cultural differences (7-point scales), confronted communication problems (2-point scale), rated weather conditions (3-point scale: 1 [very pleasant], 2 [mild], 3 [unpleasant]), rated temperature (3-point scale: 1 [hot], 2 [mild], 3 [cold]).
5. Residential Environment/Economic Situation (3 items): current economic situation, amount of money spent (2-point scales), and relationships with flat mates (7-point scale).

The items in category six ("Trouble") concern problems in areas other than interpersonal relationships, health, economy, language, and study. These might include, for example, getting lost or losing belongings. It is unsurprising that students would encounter such issues in an unfamiliar environment and that these might affect their emotional state.

6. Trouble (6 items): experienced trouble, trouble resolved with others help, asked for help,

trouble resolved by self, received suggestions from others, had a terrifying experience (2-point scales).

7. Communication with Japanese contacts (7 items): made contact with individual(s) in Japan, contacted by individual(s) in Japan, friends from Japan visited, had the chance to speak Japanese, wrote or read Japanese, felt the desire to return, wanted to see people in Japan (2-point scales).

8. Life events (2 items): participated in social activities (2-point scale), had a fun day or week (7-point scale).

Procedure

Participant A was involved in the study from June 2, 2004 to September 15, 2005, about 14 months in total. Participant B participated from August 8, 2004 to July 31, 2005, a period of approximately 11 months.

Participant A took the MPI in May, 2004, then filled out a POMS evaluation every day from 36 days prior to departure (June 6, 2004), until 47 days after returning to Japan (September 15, 2005). She also filled out Daily Life and Life Event questionnaires (hereafter referred to as DLLE) from the day she entered Australia until the night before her departure.

Participant B took the MPI in May, 2004 and filled out a POMS evaluation weekly from four weeks prior to departure to one week after returning to Japan.

With regards to the POMS evaluations, participants received the following instructions: "Please late your mood levels as you recall experiencing it today or this week." The POMS and the DLLE questionnaire were filled out before they went to sleep.

We employed action research methods in this study, and participant A was herself a first author. To avoid knowledge bias, all data were summed up after September 15, 2005. In addition, Participant A had no previous knowledge of the POMS evaluation components before September 15, 2005.

Results

The Maudsley Personality Inventory revealed that the E and N scores from participants A and B were within normal limits.

The participants were required to complete questionnaires every night before going to bed, so they sometimes fell asleep without filling out them out. As a consequence, participant A filled out POMS evaluations on 427 days (91% entry rate) and DLLE questionnaires on 309 days (81% entry rate), while participant B completed the POMS scale for 35 weeks (80% entry rate) and the DLLE questionnaires for 45 weeks (100% entry rate). Data from participant A was employed for statistical analysis, whereas the data from participant B was used to cross-validate these results.

Participant A

The scores of the 6 POMS subscales submitted by participant A (67 weeks in total) were

averaged for each week. Figure 1 shows how emotional patterns varied with term (e.g., pre-departure, the first semester, summer vacation, etc.). Principal component analysis on the 6 POMS subscale scores found only one component; this component score was included in statistical analyses as a compound score of POMS (Table 1).

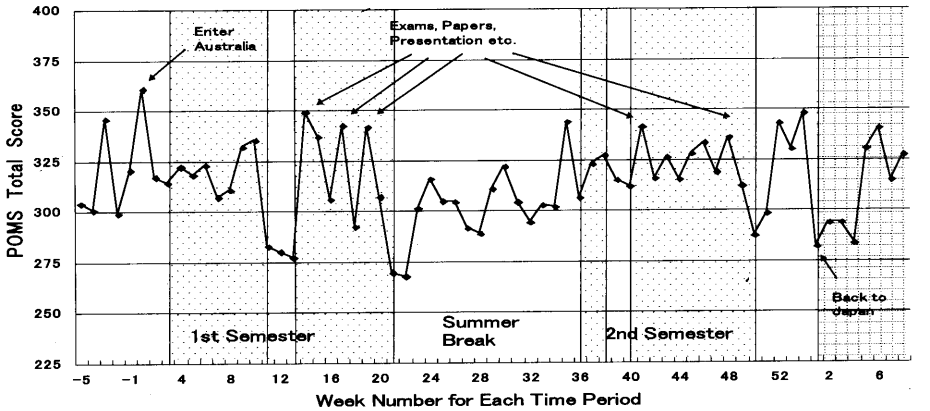

Figure 1. Changes in participant A's POMS scores over a 67- week period. Each point shows the average score for one week. The dot-patterned area shows the in- class phases whereas the lattice-patterned area shows the post-return phase

Table 1 Result of Stepwise Multiple Regression Analysis on the Entire Time Period Abroad (excluding two weeks in Beijing (N = 296)

		Dependent variable						
Area	Item	Tension· Anxiety	Depression	Anger· Hostility	Vigor	Fatigue	Confusion	Compound Score
Life Events	Had a fun day	−.401***	−.572***	−.468***	.517***	−.395***	−.616***	−.666***
Study· Research	Attended classes	.330***					.124**	.139***
	Took exams	.095**				.173***		
	Got confused with the university facilities		.184***	−.108*				
Health	Ate balanced food					.122*		
	Excised			−.173**	.158***			
	Slept well				.082*			
Culture	Perceived cultural difference			.138**				
	Developed language abilities	−.166***	−.113*					
	Confronted communication problems	−.156**						
Interpersonal Relationship	Talked to others				.153**			
Trouble	Experienced trouble				−.189***			
	R^2	.440***	.444***	.239***	.519***	.296***	.442***	.521***

Note. Number in the table is β, standardized coefficient.
***$p < .001$, **$p < .01$, *$p < .05$

Factors contributing to emotional change, revealed by stepwise multiple regression analysis

A stepwise multiple regression analysis was conducted on the collected data in the abroad phases, with 23 items from the questionnaire used as independent variables and the scores of seven POMS subscales used as dependent variables. Before performing the analysis, 21 out of 44 items in the life event questionnaire were omitted due to biased distribution points.

Entire duration abroad. A stepwise multiple regression analysis of data from the entire phase abroad showed that two factors were correlated with the compound score of POMS: *had a fun day* negatively, and *attended classes* positively. The number of days spent abroad was not associated with mood change.

Because the analysis showed that the factor *attended classes* was a significant predictor of negative mood change, further analysis was performed on data from the first and the second semesters to identify what in particular was the cause of participant A's negative mood.

Table 2 Result of Stepwise Multiple Regression Analysis on First Semester Data (N = 96)

		Dependent variable						
Area	Item	Tension · Anxiety	Depression	Anger · Hostility	Vigor	Fatigue	Confusion	Compound Score
Life Events	Had a fun day	−.464***	−.609***	−.500***	.622***	−.462***	−.645***	−.694***
Study · Research	Attended classes							
	Took exams	.264**				.361***		.165**
	Gave a presentation			.229**				
	Got confused with the university facilities	.170*	.175*					
Health	Exercised				.153**			
	Poor physical condition	.316**		.252***	−.141*	.196**	.182**	
	Slept well	.188*						
Culture	Perceived cultural difference			.176*				
	Developed language abilities						−.164*	
Interpersonal Relationship	Maintained satisfactory interpersonal relationship			.243*				
Trouble	Experienced trouble				−.197**			
	R^2	.552***	.439***	.382***	.583***	.513***	.515***	.576***

Note. Number in the table is β, standardized coefficient.
***$p < .001$, **$p < .01$, *$p < .05$

The first semester. Table 2 shows the results of stepwise multiple regression analysis carried out on data from the first semester. The factor *took exams* was negatively correlated with the compound score, "Tension • Anxiety" and the "Fatigue" score of POMS. In addition, the factors *gave a presentation* and *perceived cultural differences* were predictors of "Anger • Hostility," and *confused by the university facilities* correlated with a negative evaluation of "Tension • Anxiety."

In contrast, both *had a fun day* and *exercised* remained positively associated with "Vigor." Also, *developed language ability* was negatively related to "Fatigue."

The analysis indicated that the above-mentioned factors accounted for 38.2% to 58.3% of the variance in POMS scores (Table 2).

The second semester. Similarly, a stepwise multiple regression analysis assessed the effects of life events on mood change in the second semester (Table 3). The analysis identified several factors that predicted mood change. *Attended classes* was negatively related to "Tension • Anxiety," while *perceived cultural differences* was related to "Confusion." Moreover, *confronted communication problems* was a predictor of negative moods, namely "Depression," "Fatigue," "Confusion" and the compound score.

In addition, *had a fun day* remained correlated with positive mood changes. It was negatively correlated "Tension • Anxiety," "Depression," "Confusion," the compound score and positively correlated with "Vigor". *Ate balanced food* was negatively associated with "Tension • Anxiety" and "Fatigue," and *exercised* was negatively associated with "Anger • Hostility." Also, *was spoken to* was negatively related to "Fatigue."

The analysis indicated that the preceding factors accounted for 10.2% to 31.2% of the variance in POMS scores (Table 3).

Table 3 Result of Stepwise Multiple Regression Analysis on Second Semester Data (N = 81)

		Dependent variable						
Area	Item	Tension·Anxiety	Depression	Anger·Hostility	Vigor	Fatigue	Confusion	Compound Score
Life Events	Had a fun day	−.260***	−.255***		.369***		.019*	−.301***
Study·Research	Attended classes	.281**						
	Got confused with the university facilities	−.236*		−.230*				
Health	Ate balanced food	−.232*				−.212*		
	Exercised			−.243*				
Culture	Perceived cultural difference						.019*	
	Confronted communication problems		.312**			.236*	.251*	.215*
Interpersonal Relationship	Was spoken to					−.243**		
Trouble	Experienced trouble	.277**					.271**	
	R^2	.312***	.191***	.102***	.125***	.254***	.187***	.227***

Note. Number in the table is β, standardized coefficient.
***$p < .001$, **$p < .01$, *$p < .05$

Effect of day of the week

A stepwise multiple regression analysis on the data collected during the entire phase abroad identified *attended classes* as a significant predictor of negative moods (Table 1); thus, it indicated that participant A experienced a negative mood largely during university semesters. Since classes

were held only during the week, one might expect mood to improve on weekends.

To examine the relationship between mood change and day of the week, a 2 × 7 (In Class vs. Semester Break × Day of the Week) analysis of variance (ANOVA) was performed. The analysis on "Tension • Anxiety" proved significant when examining the "In Class vs. Semester Break × Day of the Week" interaction, $F(6.302) = 2.613$, $p < .05$. In this case, a Bonferroni multiple comparison test ($p < .05$) revealed significant differences during the in-class phase between Monday and Saturday, Tuesday and Saturday, Wednesday and Saturday, and Thursday and Saturday, and a marginally significant difference between Tuesday and Friday (Figure 2).

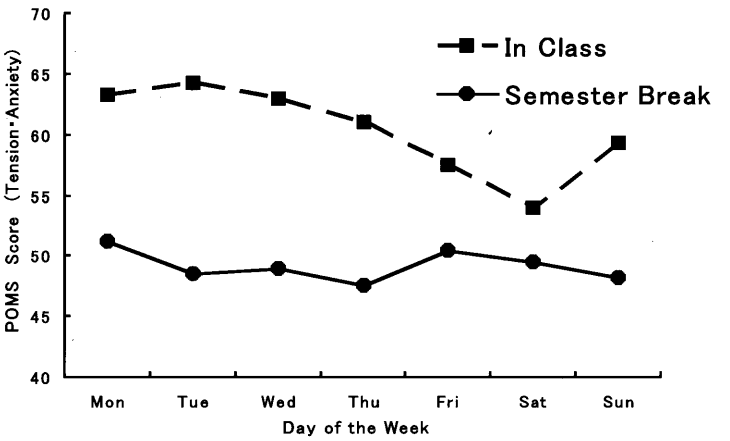

Figure 2. The effect of day of week on "Tension • Anxiety"

Results on "Confusion" revealed statistically significant main effects of "In Class vs. Semester Break," $F(1.302) = 75.449$, $p < .01$ and "Day of Week", $F(6.302) = 2.247$, $p < .05$. Also, results on the compound score showed a significant main effect of "In Class vs. Semester Break," $F(1.302) = 81.325$, $p < .001$, and a marginally significant effect of "Day of the Week," $F(6.302) = 2.075$, $.05 < p < .10$). Results on "Depression" showed a significant main effect of "In Class vs. Semester Break," $F(1.302) = 63.308$, $p < .05$, and a marginally significant effect of "Day of the Week," $F(6.302) = 1.935$, $.05 < p < .10$.

The only significant main effect on "Anger • Hostility," "Vigor," and "Fatigue" was "In Class vs. Semester Break," with $F(1.302) = 4.079$, $p < .05$, $F(1.302) = 67.993$, $p < .001$, and $F(1.302) = 17.094$, $p < .001$, respectively.

Participant B

In order to cross-validate participant A's results, we charted the POMS data collected weekly from participant B (Figure 3). We found a comparable pattern of mood changes that depended on phase: negative mood increased before departure abroad and during school terms, whereas a positive mood was relatively high during breaks.

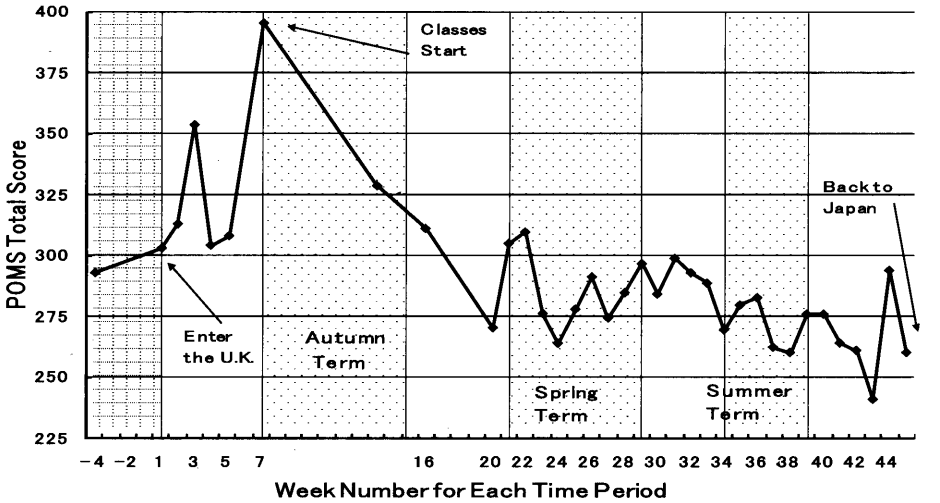

Figure 3. Changes in participant B's POMS scores over a 50 week period. Each point shows the average score for one week. The dot-patterned area shows the in- class phases whereas the lattice-patterned area shows pre-departure phase.

In summary, the results of participants A and B revealed that the factors determining mood change were the tasks the students were actually engaged in, not the length of their time abroad.

Discussion

The main purpose of the present study was to investigate the factors influencing emotional changes by following the psychological adjustment processes of two students studying abroad. Our analysis of longitudinal data demonstrated that what significantly influenced emotional change was not a student's length of time abroad, but rather the specific activities he or she was engaged in at any given time. A 334-day investigation of the entire duration abroad showed that a student's psychological state fluctuated more over short-term periods than over longer ones.

Our research also showed that the emotional states of both participants differed significantly between periods when classes were in session and when they were not (i.e., during semester break). The fact that negative emotions were observed in the middle of university semesters confirms the results of a previous study (Furnham et al., 1983). It also validates the hypothesis that stress due to academic pressure may be experienced more acutely by international students because of disadvantages such as difficulty with the host country's native language.

Factors Influencing Mood Change

Students' motivation may also influence negative moods (Furnham et al., 1990). Because their main purpose in studying abroad was to obtain a degree and to conduct research, the degree of success in attaining these goals may dominate the students' emotional states.

In the first semester, participant A experienced poor health and high levels of tension and

anxiety due to difficulties with exams and presentations. Moreover, the awareness of cultural differences seemed to bring about emotional conflict and bitterness towards the host culture. Cheerful experiences, including exercise and improved language abilities, tended to have a positive influence on this participant's emotional state.

After eight months, participant A was still apt to feel intense emotion, especially when attending class or when facing trouble on account of language difficulty. On the other hand, her emotional state was positively impacted by eating a proper diet and by being spoken to others, as well as by positive experiences such as exercise and improved language ability.

A comparison between the results of two semesters revealed that the number of factors negatively influencing emotional state was reduced in the second semester, whereas the number of positive factors increased. The most important finding is that the length of time abroad is not the dominant factor impacting emotional change, suggesting that a student's adjustment abroad does not always improve with time.

Although previous research tends to focus on identifying factors that negatively influence adjustment, ascertaining which factors promote healthy adjustment would also be valuable. The questionnaire used in the current study was designed to identify some of these factors, using four items in particular: *being spoken to* (interpersonal relationships); *eating balanced food, exercising* (health); and *acquiring better language skills* (culture).

Consistent with the findings of Yeh and Inose (2003), good interpersonal relationships and advanced language ability were found to contribute to healthy psychological adjustment. Moreover, it was demonstrated that eating a proper diet and exercising had positive effects on emotional state. It is widely known that exercise increases vigour (e.g., Yokoyama & Araki, 2003) and is also beneficial in reducing anger (Renshaw, 2002). In their work with POMS-Adolescent, Lane, Lane and Crone-Grant (2002) reported that exercise reduces depression. These findings suggest that it is very important to maintain good dietary habits and exercise regimens even when living in a foreign country.

Effect of day of the week. Similar to a previous study (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), the daily POMS data showed a pattern of mood changes that varied with the day of week during the in-class phase. In short, negative moods increased on weekdays whereas positive moods peaked on Saturdays and declined somewhat on Sundays. It is predictable that mood changes of local students would also exhibit the same phenomenon; however, considering the acute stress international students are under, they may be far more susceptible to negative moods. To further investigate this day-of-the-week effect, comparable and longitudinal data derived from local students are required.

Daily mood changes and mood changes throughout the stay abroad. The analyses of data from participant A revealed that everyday life events and habits significantly influenced daily mood changes. Both participants A(Figure1) and B(Figure3) tended to experience negative moods more frequently during the early stages of their time abroad, and that these gradually became less common. One possible explanation is that the participants adjusted over time.

Other factors that influenced mood change. The fact that the adjusted R-square values of the stepwise multiple regression analysis of the second semester (from .102 to .312) were lower

than that of the first semester (from .382 to .583) implies that the DLLE questionnaire was not able to take into account all the factors influencing psychological adjustment abroad. For this reason, it is necessary to consider other factors that predict mood changes in students living abroad.

Some potential factors may be internal ones that are particular to each individual. Hayashi (1997) pointed out that feelings of adjustment in students studying abroad are influenced by self-perception, and that self-efficacy in particular has a significant effect on academic achievement. Inoue and Ito (1997) reported that the acculturative attitude of international students who have been in Japan for over a year is influenced by their level of stress. These findings suggest the necessity of investigating internal factors, including self-efficacy and acculturative attitudes.

Cultural adjustment hypotheses and future research direction

The present daily and weekly longitudinal research yielded detailed results that could not be explained by previous cultural adjustment hypotheses. That is, students' psychological adjustment is highly dependent on the tasks in which a student is actually engaged. The present study did not substantially support either simple stage or curve theories. These theories may indeed be over-simplifications of the process of cross-cultural adjustment.

Although the present study is a qualitative one with only two participants, the results offer suggestions for future investigation. Careful consideration should be given to timing of measurement and to the effect of day of the week in longitudinal studies. Clearly not only quantitative but also qualitative investigations are needed to obtain an accurate picture of the cultural adjustment of students.

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(Received October 5, 2009)
(Accepted December 11, 2009)