



## Mandarin Attrition among Tertiary Students

Yu Zhonggen<sup>1\*#</sup>, Chan Swee Heng<sup>2</sup> and Ain Nadzimah Abdullah<sup>2</sup>

<sup>1</sup>Department of English, Tongda College, Nanjing University of Posts and Telecommunications, 210003, Nanjing, China

<sup>2</sup>Department of English, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

### ABSTRACT

This study aimed at determining whether Mandarin language attrition occurs in terms of Chinese character recognition, word order, and writing ability after a two-month holiday. The methodology of the study is mainly quantitative, and the data were obtained through pre- and post- tests. Pre- and post- Mandarin tests were conducted among 65 participants. The results showed that slight attrition was found in Chinese character recognition, while serious attrition occurred in word order and writing ability. The reasons for the attrition were also discussed. The study suggested that more attention be paid to learning Chinese word order and writing and less to Chinese character recognition for Mandarin learners, especially in Malaysia.

*Keywords:* Language attrition, Mandarin, Chinese character recognition, word order, writing ability

### INTRODUCTION

Language attrition is defined as language proficiency degradation during the natural language contact process rather than the phenomenon which happens when learners

suffer some trauma or any other pathological hurts (Weltens, 1987, p. 22-37; Hansen, 2001, p. 60-73). It is considered meaningful and worthwhile for this study to be carried out in Malaysia. Recently, a few scholars have been committed to research into language attrition in Malaysia, while it is not enough since many Malaysian tertiary students minor in Mandarin. The biggest pity, however, is that few students succeed in maintaining the Mandarin proficiency level gained in the university after graduation. If we can determine whether students

#### ARTICLE INFO

##### Article history:

Received: 22 March 2011

Accepted: 5 January 2012

##### E-mail addresses:

zhonggenyu@gmail.com (Yu Zhonggen), shchan@fbmk.upm.edu.my (Chan Swee Heng), ain@fbmk.upm.edu.my (Ain Nadzimah Abdullah)

\* Corresponding author

##### # Current address:

Foreign Languages School of Hohai University, Nanjing, China 210098

Postdoctoral Research Station of Psychology of Nanjing Normal University, Nanjing, China 210097

suffer any proficiency decrease during the holiday, it will then be meaningful for us to go further in this area in order to prevent or to minimize the impacts of attrition. So far, there are studies (see for e.g., Mehotcheva, 2007) arguing that students experience slight language attrition during the two-month holiday. Nevertheless, very little research on attrition has been conducted related to holiday interval in Malaysia, and thus, it seems worthwhile to conduct the research in Malaysia.

This study aimed to explore the aspects of Mandarin language proficiency experience attrition among the tertiary students of Universiti Putra Malaysia (UPM). The purpose of this study was to test the theory of language attrition that relates time span to the attrited Mandarin language proficiency for the undergraduates at UPM. The time span, an independent variable, was generally defined as a period when the participants receive no specific language training and have no immediate access to language use. The attrited Mandarin language proficiency, the dependent variable, is deemed as the proficiency after the participants stop learning Mandarin for a certain period. The intervening variables such as testing environment, the exam items and the scoring criteria were statistically controlled in the study.

One question is proposed as a stimulus to carry out this study and work the attrition problem out, which is, “will learners go through any language attrition in terms of word order, Chinese character recognition and writing ability during two-month incubation time?”

In the search of a theoretical framework for this study, readings lead to a number of strands that have a bearing on the concepts and theories that underlie the conceptualization and final operationalization of the study.

The SLA theory provides the fundamental basis for situating the study. Ellis (1985) pointed out foreign language learning was primarily located in the classroom. As a result, there will be major differences in the way L2 is learnt when compared to L1. Learning a language is tied up very much with other considerations such as motivation and social factors. In this regard, one of the most influential models is Gardner’s Socio-educational theory of motivation (1985), which is linked to foreign/second language acquisition. The theory expounds on how motivation, integrativeness and attitude exert major influence on the learning situation.

Students with less favourable attitudes towards the target language are said to show significantly more attrition than those with more favourable attitudes. If students are more motivated, they will more likely make use of English or try to learn English longer than those who are less motivated, which has been argued and proven by some researchers (Gardner *et al.*, 1985). In SLA, researchers have obtained some evidence indicating the existence of gender differences in motivation and attitude (e.g., Bacon & Finnemann, 1992; Burstall *et al.*, 1974; Clark & Trafford, 1995; Gardner & Lambert, 1972; Ludwig, 1983; Goldberg & Wolfe, 1982). This variable was also considered in this study.

In addition, the notion of language contact is closely related to the study of attrition. Winford (2003), drawing from the works of Weinreich (1953) and Haugen (1950), reaffirms the connection between linguistic and the socio-cultural perspective of language contact. Winford also noted that other factors, such as the degree of bilingualism as well as the history and length of contact, were necessary features that explained the linguistic outcomes of this particular process, which in this study, was manifested in attrition. In particular, Winford (2003, p. 59) has proposed that lexical borrowing must be deemed as a creative process of lexical change under contact situations that can contribute to phonological and morphological alteration.

Another observation purports that the amount and rate of attrition is not uniform across different language sub-skills. Weltens *et al.* (1989) posit that lower-level skills seem to be more vulnerable to attrition than global skills (and productive skills are more vulnerable than receptive skills (Cohen, 1989; Tomiyama, 1999; Yoshida & Arai, 1990). Bahrick (1984) concluded that the knowledge of meaning is more robust than that of form and that attrition affects smaller portions of vocabulary recognition than those of vocabulary recall.

Based on the above explications, it is obvious that the theoretical framework for this study is a composite one, drawing on many aspects, both linguistic and non-linguistic, and founded on a broad-based interpretation of SLA.

## LITERATURE REVIEW

### *Linguistic Features of Language Attrition*

In the recent years, there has been an increasing amount of literature on language attrition in linguistic aspects, involving lexical, phonological, morphological and syntactical attrition (Seliger & Vago, 1991; Pavlenko, 2000), word order (Schaufeli, 1996), relative clause formation (Seliger, 1989), case morphology (Larmouth, 1974; Polinsky, 1997), the aspectual system (Montrul, 2002; Polinsky, 1997), and the pronominal system (Sorace, 2000). A few of these studies focus on children language attrition, and thus may not be applicable to adult language attrition. Nevertheless, it has conclusively been shown that attrition in linguistic elements is selective, i.e., the attrition process appears different in different linguistic aspects. Some linguistic elements are more susceptible to attrition while others are more resistant. It has been argued that lexical attrition is more patent than morpho-syntax and phonology for L1 attriters (Köpke, 2002). Seliger (1989, 1996) has demonstrated that this selective attrition goes through the 'redundancy reduction principle' (p.34), where the attrition process is related to some 'markedness' in the sense that those less marked in one language are more likely to replace those more marked in the other language, whereas the less marked seem able to be retained longer. In this argument, those grammatical elements that have more complex grammatical forms and a narrow linguistic distribution are considered marked. Montrul (2002, p. 52) analyzed the data from a group of 20

monolingual Spanish speakers, 31 US-born bilinguals, and 8 Latin America-born bilinguals and concluded that “morpho-phonological spell-outs and semantic features of functional categories are affected by incomplete acquisition and language loss, and that many of the patterns of divergence found resemble stages of second language acquisition.”

It is nearly universally acknowledged that attrition is selective (Seliger & Vago, 1991) and does not influence all aspects of language in the same way. This issue has mostly been evidenced in broad linguistic investigations focusing either on intralanguage effects (simplification, over-generalization) or on interlanguage effects (cross-linguistic-influence, CLI). Although there is increasing concern about this perspective, the studies are rather controversial, and there is no general agreement (Köpke & Schmid, 2003). Recently, a considerable amount of literature has been published using specific theoretical frameworks more systematically, such as Chomsky's Universal Grammar (UG) and minimalism (Gürel, 2002; Gürel, 2004; McCormack, 2001; Montrul, 2002; Sorace, 2000; Myers-Scotton & Jake, 2000), 4-M-Model (Bolonyai, 1999; Gross, 2000; Schmitt, 2001).

#### *Previous Studies on Language Attrition and Retention after Holiday*

Smythe *et al.* (1973) conducted a study to investigate second language attrition over summer vacation during which no second language (SL) instruction was provided.

Two hundred and twenty students from three secondary schools in Ontario were tested for the amount of loss in the French skills they suffered during the summer vacation between grades nine and ten. It was concluded that the loss in reading comprehension was slight but significant, while there was a slight but significant gain in listening comprehension.

Meanwhile, Cohen (1974) investigated the effects of summer vacation on Spanish oral skills. The selected 14 participants were Anglo children from the Culver City Spanish Immersion Programme. These children were taught exclusively in Spanish when in kindergarten and then gradually introduced to Mandarin in the 1<sup>st</sup> grade. The effects of summer vacation between the first and second graders on spoken Spanish were studied, which showed that a three-month summer vacation reduced the Spanish oral skills. Utterance became shorter. At least one grammatical class (preposition) was slightly less used, while another (verbs) was more frequently applied. After the vacation, the participants made more errors compared with before the vacation. Problems with articles and adjectives remained.

#### *Studies on Mandarin Learning and Teaching*

As far as the author is concerned, there has been very little literature devoting to studies on attrition of Chinese character recognition, word order and writing ability so far although there have been plentiful studies on other aspects of learning and teaching of Mandarin. Wang *et al.* (2009)

argue that metacognitive beliefs, which identify students who are confident about their ability to learn a foreign language, are positively associated with students' Mandarin as a foreign language achievement results. Successful students were found to have confidence in their abilities. It was revealed that in Mandarin learning, transitive verbs, motion verbs, and internal/communication verbs were distinguished syntactically; moreover, the 60 target verbs were used in multiple sentence frames (Joanne *et al.*, 2005). One of the core difficulties in achieving fluency of Mandarin for non-native users is the language's substantially contrasting written component. The written script used in the various spoken languages of Chinese (e.g., Mandarin Cantonese) differs greatly from the written script of western languages (e.g. English, Spanish) in that it is not phonetic. In other words, the pronunciation corresponding to written Mandarin cannot be determined directly from solely reading it. This particular trait of written Mandarin thus poses a difficult challenge to novice students, especially those with primarily native English fluency, as they encounter new Mandarin words in the language (Taele & Hammond, 2010). Chen and Liu (2008) presented the core developments of the Web-based Synchronized Multimedia Lecture (WSML) system for fulfilling language learning requirements on listening, speaking, reading and writing and argued that WSML facilitates students in Mandarin comprehension self-learning on the Web and can easily be customized for different foreign language learning.

Numerous scholars such as Chao (1968), Li and Thompson (1981) and Huang (1984, 1989, 1991) have noticed that Chinese is uniquely characterized from other languages. Similar to Italian and Spanish, it is a pro-drop language, but different from these languages, it is a pro-drop language needing little verbal morphology. It is different from English as it is a topic prominent rather than subject prominent language (Li & Thompson, 1976). Mandarin has a more flexible word order than Malay and English. These unique features have posed great challenges for linguists to describe Mandarin language, let alone for Malay-English speakers to learn.

## METHODS

The design of this study involved the use of pre- and post- tests aiming at obtaining reliable data. The method used in this study seemed sound but no previous similar method was used to test the attrition in Mandarin attrition. The theoretical framework is based on the related theories in foreign language attrition, such as the influence of motivation on attrition and selective attrition in linguistic elements.

### *Participants and Sampling*

The population of the study is non-Chinese major students who minor in Mandarin in UPM. They were from different faculties majoring in different fields ranging from Malay language, Malay literature, food science and Chemistry, among whom 65 Mandarin learners had been randomly selected. These 65 participants had learned

Mandarin for one semester starting from January, 2008. All of the participants experienced Mandarin test at the end of last semester which is referred to as the “pre-test” in this study.

The students, in this study, were mainly from Faculty of Modern Languages and Communications, as well as the Faculty of Food Science and Faculty of Science (majoring in Chemistry). Sixty-five participants (ethnically Malay) who are non-simultaneous Malay-English bilinguals were randomly selected according to their matriculation numbers.

#### *Pre- and Post-tests*

Sixty-five participants took the Mandarin pre-test during the course BBC 2401 which was carried out and designed by their instructor. The researcher designed and conducted the post test and the participants took the test during the course BBC 2402. In order to make sure the difficulty is nearly the same as the pre-test, the researcher requested the UPM Mandarin instructor who was in charge of the tests to assess and modify the test items. In addition, the post-test paper was strictly designed based on the content in the textbook. This is in conformity with the pre-tests. All the requirements are exactly the same in both the tests. The participants then took the post-test after a two-month holiday under the same condition, such as classroom and invigilation.

The test comprised of 3 sections, namely, Chinese character recognition, sentence rearrangement and writing. A detailed explanation is given in the following section.

#### *Chinese Character Recognition*

This part has a total of 5 sentences. In each sentence, there are two blanks for the students to fill in. For each blank, the students were required to circle one single Chinese character from three similar ones in order to complete the sentence. For instance:

我是美国 (入, 人, 八), (住、往、主) 在吉隆坡。

This sentence requires students to distinguish three seemingly identical characters to test their Chinese character recognition. In order to circle the correct one, the students must be able to distinguish the correct one from the three confusing characters since they appear to be nearly the same. The total score is 10. One right circling is given 1 point. The students need to circle two characters in one sentence. Hence, one sentence adds up to 2 points, resulting in 10 points for five sentences. This part aims to identify students' attrition in Chinese character recognition.

#### *Sentence Rearrangement*

In this part, the students were required to rearrange 7 sentences to change the disordered into ordered ones. Each sentence comprises of 5 to 9 words. An example is as follows.

我 图书馆 下午  
去 今天



These are five Chinese words or characters which should have formed a grammatical sentence. Now the order is manually disrupted. The students were supposed to rearrange the words and change them into a grammatically correct sentence. Only those with adequate knowledge of word order can successfully rearrange them. Each completion of sentence leads to 2 points, totalling 14 points for seven sentences.

### *Writing*

For this part, students were allowed 30 minutes to write a composition on the topic "My Lecturer/Classmate". They should write at least 50 Chinese characters. The total score for this part is 10 points. Mainly based on iBT (Internet-based TOEFL) scoring criteria, the assessment of students' writing was classified into six aspects, namely, answers to question, comprehensibility, organization, flow of ideas, as well as grammar and vocabulary as follows:

9-10 points: (1) the student answers the question thoroughly; (2) the student can be understood completely; (3) the student's response is maturely organized and developed, (4) the student's ideas flow cohesively; (5) the student uses advanced grammatical structures with a high degree of accuracy; and (6) the student uses advanced vocabulary with a high degree of accuracy.

7-8 points: (1) the student answers the question adequately but not thoroughly; (2) the student can generally be understood; (3) the student's response is adequately

organized and developed; (4) the student's ideas generally flow cohesively; (5) the student uses either accurate easier grammatical structures or more advanced grammatical structures with a few errors; and (6) the student uses either accurate easier vocabulary or more advanced vocabulary with some errors.

5-6 points: (1) the student gives a basically accurate response to the question; (2) the student's basic ideas can be understood; (3) the student's response is organized basically and is not thoroughly developed; (4) the student's ideas flow cohesively sometimes and at other times do not; (5) the student has a number of errors in grammar or uses only very basic grammar fairly accurately; and (6) the student has a number of errors in vocabulary or uses only very basic vocabulary fairly accurately.

3-4 points: (1) the student discusses information from the task but does not answer the question directly; (2) the student's ideas are not always intelligible; (3) the students' response is not clearly organized and is incomplete or contains some inaccurate points; (4) the student's ideas often do not flow cohesively; (5) the student has numerous errors in grammar that interfere with meaning; and (6) the student has numerous errors in vocabulary that interfere with meaning.

1-2 points: (1) the student's response is only slightly related to the topic; (2) the student's ideas are occasionally intelligible; (3) the student's response is not clearly organized and is only minimally on the topic; (4) the student's ideas do not flow

smoothly; (5) the student produces very little grammatically correct language; and (6) the student uses very little vocabulary correctly.

0 point: The student either writes nothing or fails to answer the question.

*Test Administration*

Both pre- and post-tests were administered under the same condition. They were conducted in regular class periods in the same campus environment. Both the tests lasted for two hours. The pre-test was carried out in the last week of May 2008, while the post-test was in the last week of July, 2008. The holiday was around two months. Fig.1 shows the timeline of both the tests.

**RESULTS AND DISCUSSION**

The data gathered were considered from a normally distributed population. Through

tests of normality, no significant difference was found between the normal distribution and the distribution of the obtained data. Therefore, a parametric test was applied to analyze the data in this study.

The main results were computed by means of the paired-sample *t* test. The full mark of the test was 34 points. The mean performance scores on both pre and post tests are presented in Table 1. Also included in Table 1 are the mean pre-post difference scores, attrited percentages and *t* test results. Each test item is listed in Table 1, including the Chinese character recognition (CCR), sentence rearrangement (SR), and writing (WRT).

Investigation into the data in Table 1 revealed that certain results are perhaps logical. First of all, as shown in Table 1, there are significant differences ( $p < 0.05$ ) between the pre- and post-tests in



Fig.1: Timeline of the study.

TABLE 1  
Mean Mandarin Performance and *t* test results (N=65)

Test	Test session		Difference	Attrited Percentage (%)	<i>T</i>
	Pre	Post			
CCR	8.54	7.38	0.16	1.8	3.426*
SR	10.85	8.85	2.00	18.4	2.243*
WRT	6.92	6.00	0.92	13.2	2.521*
Total	26.31	22.23	4.08	33.4	3.965*

\* $p < .05$ , two-tailed



terms of CCR, SR and WRT. In particular, the shift in the performance of SR was large in absolute size and also statistically significant in the *t* test ( $p < 0.05$ ). This indicated that the students had experienced pronounced attrition in the proficiency of sentence rearrangement, leading to the analysis that students' knowledge of word order had been significantly attrited after a two-month holiday. Secondly, the students' performance scores in CCR also showed a statistically significant ( $p < 0.05$ ) change despite having a relatively small absolute size. Therefore, it could be inferred that after the 2-month holiday, the students appeared to be unable to recognize as many Chinese characters as it was before the holiday. The students might have gone through attrition in Chinese character recognition. Finally on the WRT test, the students' performance was found to have declined between the two testing sessions as well. This difference was also significant ( $p < 0.05$ ) but somewhat more pronounced than CCR. As a result, the students' writing ability also appeared to have attrited.

Setting aside the issue of statistical significance for the moment, perhaps the most dramatic finding was that students had shown an unbalanced attrition in their Mandarin competence after the 2-month holiday. In percentage terms, CCR shift represented a moderate drop of less than 2%, while the decline in SR and WRT was much more obvious, with approximately 18% and 13%, respectively. Meanwhile, the students' knowledge of word order and writing ability seemed to be much more seriously attrited than character recognition competence.

Maybe it could be argued that the generalized result was not so convincing since the tests were only locally designed rather than the use of an established or validated test. The test items, however, are theoretically logical to identify attrition in Chinese character, word order and writing ability. The test items of the Chinese character recognition require students to spot out the correct Chinese character among three ones. This directly identifies students' character recognition competence. As for sentence rearrangement, several Chinese words are provided in disorder. What students needed to do was to only change the wrongly ordered words to form grammatically ordered sentences. Therefore, knowledge of word order appeared the first important step to realize grammatical sentences. Writing test is strictly scored based on iBT criteria, which seems reasonable to determine students' writing ability.

Furthermore, Cronbach alpha formula was used to assess the internal consistency, proving that the test is internally consistent and reliable. The Cronbach alpha coefficient of CCR for the pre-test was 0.835 and this was 0.749 for the post-test, while for pre- and post-tests in SR, the coefficient was 0.736 and 0.712, respectively. As for the writing tests, the value of 0.839 and 0.863 had been obtained respectively for the pre- and post-tests. Integrating CCR, SR and WRT into a whole, the item-total Cronbach alpha was 0.881. As a consequence, both tests appeared to have a satisfactory level of internal consistency.

This study produced results which corroborate with the findings of a previous work in the field of linguistic attrition. Word order patterns were explored in the Turkish of immigrants in the Netherlands (Schaufeli, 1996). Deviations in word order, possibly considered as indications of language loss or change, were found between the controlled and the treated groups. It was also argued that speaker's first language competence in late bilingualism, influenced by a second language, decreased in the areas of phonology, morphosyntax, lexis, semantics, pragmatics, rhetoric, and conceptual representations (Pavlenko, 2000). As far as lexical attrition is concerned, disagreed arguments have been put forward. For instance, it was shown that vocabulary loss might be massive (Schmidt, 1985); however, Hutz (2004) has reported that vocabulary loss could be minimal (Hutz 2004; Schmid, 2002). As for writing proficiency, the Spanish writing skills of a German L1 multilingual - mainly fluency - were shown to have suffered from language attrition after 8-month non-use of a language (Mehotcheva, 2007).

The students' sharp decrease of performance in the word order and writing might result from the relatively little knowledge they gained before the holiday. It has been argued that the amount of experience gained before the interruption occurs in the learning process influences the level of forgetting (Bailey, 1989; Globerson *et al.*, 1989; Shtub *et al.*, 1993). Therefore, the less knowledge students acquire, the more serious the attrition will be. In this

study, students only learned Mandarin for one semester, and thus, it is hardly believable that they have retained much knowledge of Mandarin. Hence, their suffering obvious attrition could possibly be brought about by their little knowledge of the language.

The moderate attrition in the Chinese character recognition ability may be caused by students' exposure to a special linguistic environment. Malaysia's population comprises many ethnic groups, among which about a quarter is Chinese. They have historically played an important role in trade and business, operating a sea of companies and stores, leading to the fact that many Chinese characters are displayed alongside the streets. People may see many Chinese characters rather than complete Chinese sentences in most areas of Malaysia, such as the trade marks, names of companies, restaurants, schools, and so on. The students in this study are absolutely no exception. During the holiday, they might have been exposed to many Chinese characters while very few complete Chinese sentences had been available since most of them might not have voluntarily learned Chinese without instruction. The result was that students could have possibly experienced less contact with word order. This phenomenon could be the main reason why the students only experienced less than 2% attrition in character recognition while 18% in word order.

Another possible reason for the obvious failure in retaining their writing ability might be the lack of motivation. It has been

hypothesized that “since attitudinal and motivational characteristics are related to the level of second language proficiency, they will relate to second language retention” (Garner, 1985, p. 31). When students suspended their learning during holiday, very few of them might be motivated to practice writing in Mandarin. This is especially for the students who only learned Mandarin for one semester, their writing competence could be exceedingly limited. It is possibly painful for them to compose Chinese writings without proper instruction since Chinese characters and syntax are not similar to English and Malay at all. For English-Malay speakers, they might feel uneasy to write a single Chinese character, which possibly discouraged them to write Chinese characters. In view of these, the results seemed reasonable.

Additionally, there may be another factor that impacts participants’ motivation, giving rising to the attrition in CCR, SR and WRT. The pre-test directly constituted students’ academic results, and the students might be more motivated to perform the test. In contrast, the post-test was not the one affecting their results but merely serving the study, and the students might have not done it as seriously and diligently as the pre-test.

Since Chinese characters are more resistant against attrition, learners might focus more on word order and writing. More research can be done on other language skills, such as listening, speaking as well as reading for the near future. It could also be said that the fewer opportunities for social language contact could be more linked to the

attrition in Mandarin skills of the language. This means the participants participated in significantly fewer social activities that required the use of Mandarin during the holiday than before the holiday. This provided a supportive position for inferring language attrition occurrence.

The last but by no means the least, the linguistic interaction between Mandarin, Malay, English and Hindi may be another unavoidable factor resulting in the attrition of Mandarin in Malaysia. The dissimilarities between these languages might have interfered in the Mandarin language system cultivated in the participants’ brain and the similarities might also have caused confusion between the different languages since Mandarin is a language which is phonologically, morphologically and syntactically different from Malay, English and Hindi.

## CONCLUSION

In a word, this study found that after two-month holiday of Mandarin learning, there existed statistically significant language attrition in terms of Chinese character recognition, word order and writing ability although the percentage of attrition in the Chinese character recognition appeared to be much lesser as compared to that of the word order and writing ability.

Admittedly, the number of the participants is not large. However, the valid internal consistency and construct and content validity might ensure that this study could be a fair reference for further research into attrition in terms of Mandarin and could

possibly pave a way for Mandarin learning as well. Research into the attrition of English is plentiful but sparse in Mandarin. Thus, further research into the attrition of Mandarin as EFL is still necessary.

### ACKNOWLEDGEMENTS

“本研究受中国教育部人文社会科学研究青年基金资助，项目批准号：11YJC740138 (This study is supported by Youth Fund, Research of humanities and Social Sciences, Ministry of Education, China. The project No. is 11YJC740138.”；2011年南京邮电大学通达学院教学改革重点项目资助，项目号为TD02011JG02 (2011 Teaching Renovation Project of Tongda College of Nanjing University of Posts & Telecommunications “The Regression and Threshold Hypotheses of Foreign languages and Teaching Renovation of College English in Civil Colleges”, Project No.: TD02011JG02); 2012年度第二批“江苏省博士后科研资助计划”，项目号为1202112C (The Second Batch of Post-doctoral Research Fund of Jiangsu Province in 2012 “The Regression and Threshold Hypotheses of English Language Attrition among Students in China” (Project No.: 1202112C).

### REFERENCES

- Bacon, S., & Finnemann, M., (1992). Sex differences in self-reported beliefs about foreign language learning and authentic oral and written input. *Language Learning*, 42, 471–495.
- Bahrick, H. P. (1984). Fifty years of second language attrition: Implications for programmatic research. *The Modern Language Journal*, 68(2), 105-118.
- Bailey, C. D. (1989). Forgetting and the learning curve: a laboratory study. *Management Science*, 35, 346–352.
- Bolonyai, A. (1999). *The hidden dimension of language contact: The case of Hungarian–English bilingual children* (Unpublished Doctoral Dissertation). Columbia, SC: University of South Carolina.
- Burstall, C., Jamieson, M., Cohen, S., & Hargreaves, M. (1974). *Primary French in the Balance*. NFER Publishing Company, Windsor, Berkshire.
- Chao, Y. R. (1968). *A Grammar of Spoken Chinese*. Berkeley, CA.: University of California Press.
- Chen, H. Y., & Liu, K. Y. (2008). Web-based synchronized multimedia lecture system design for teaching/learning Chinese as second language. *Computers & Education*, 50(3), 693-702.
- Clark, A., & Trafford, J. (1995). Boys into modern languages: an investigation of the discrepancy in attitudes and performance between boys and girls in modern languages. *Gender and Education*, 7(3), 315–326.
- Cohen, A. (1974). The Culver City Spanish immersion program: How does summer recess affect Spanish speaking ability? *Language Learning*, 24, 55-68.
- Cohen, A. (1989). Attrition in the productive lexicon of two Portuguese third language speakers. *Studies in Second Language Acquisition*, 11(2), 135-151.
- Ellis, R. (1985). *Understanding Second Language Acquisition*. New York: Oxford University Press.
- Gardner, R. C., & Lambert, W. E. (1972). *Attitudes and Motivation in Second Language Learning*. Newbury House, Rowley, MA.
- Gardner, R. C. (1985). *Social Psychology and Second Language Learning*. London: Edward Arnold.

- Gardner, R. C., Lalonde, R., & MacPherson, J. (1985). Social factors in second language attrition. *Language learning*, 35(4), 519-540.
- Globerson, S., Levin, N., & Shtub, A. (1989). The impact of breaks on forgetting when performing a repetitive task. *IIE Transactions*, 21, 376-381.
- Goldberg, M. A., & Wolfe, D. (1982). Attitudes and motivations in American students of Spanish. *The Canadian Modern Language Review*, 38, 262-281.
- Gross, S. (2000). *The role of abstract lexical structure in first language attrition: Germans in America* (Unpublished Doctoral Dissertation). Columbia, SC: University of South Carolina.
- Gürel, A. (2002). *Linguistic characteristics of second language acquisition and first language attrition. Turkish overt versus null pronouns* (Unpublished Doctoral Dissertation). Montreal: McGill University.
- Gürel, A. (2004). Selectivity in L2 induced L1 attrition: A psycholinguistic account. *Journal of Neurolinguistics*, 17(1), 53-78.
- Hansen, L. (2001). Language Attrition: The Fate of the Start. In McGroarty, M. (Ed.), *Annual Review of Applied Linguistics*, 21 (pp. 60-73). Cambridge: Cambridge University Press.
- Haugen, E. (1950). Problems of Bilingualism. *Lingua*, 2, 271-290.
- Huang, J. C. T. (1984). On the distribution and reference of empty pronouns. *Linguistic Inquiry*, 15, 531-574.
- Huang, J. C. T. (1989). Pro-drop in Chinese: a generalized control theory. In Jaeggli, O. & Safir, K. J. (Eds.). *The Null Subject Parameter*. Dordrecht: Kluwer Academic Publishers.
- Huang, J. C. T. (1991). Remarks on the status of the null object. In Freidin, R. (Ed), *Principles and Parameters in Comparative Grammar* (pp. 56-76). Cambridge, MA.: MIT Press.
- Hutz, M. (2004). Is there a natural process of decay? A longitudinal study of language attrition. In Schmid, M. S., Köpke, B., Keijzer, M., & Weilemar, L. (Eds.) *First Language Attrition: Interdisciplinary Perspectives on Methodological Issues* (pp. 189-206). Amsterdam: John Benjamins.
- Joanne, N., Lee, & Naigles, L. R. (2005) The Input to Verb Learning in Mandarin Chinese: A Role for Syntactic Bootstrapping. *Developmental Psychology*, 41(3), 529-540.
- Köpke, B. (2002). Activation thresholds and non-pathological first language attrition. In Fabbro, F. (Ed.), *Advances in the neurolinguistics of bilingualism* (pp. 119-142). Udine: Forum.
- Larmouth, D. W. (1974). Differential interference in American Finnish cases. *Language*, 50, 356-366. *Bilingualism: Language and Cognition*, 5(1), 39-68.
- Li, C., & Thompson, S. (1981). *Mandarin Chinese: A Functional Reference Grammar*. Berkeley, CA.: University of California Press.
- Ludwig, J. (1983). Attitudes and expectations: a profile of female and male students of college French, German and Spanish. *Modern Language Journal*, 67(3), 216-227.
- McCormack, B. (2001). *The maintenance and loss of reflexive anaphors in L2 English* (Unpublished Doctoral Dissertation). University of Durham.
- Mehotcheva, T. H. (2007). *8-month non-use of a language. A case study. A longitudinal study of the effects of non use of one of the languages (Spanish) of a German L1 multilingual* (Unpublished Doctoral Dissertation). Universitat Pompeu Fabra.
- Montrul, S. (2002). Incomplete acquisition and attrition of Spanish tense/aspect distinctions in adult bilinguals. *Bilingualism: Language and Cognition*, 5, 39-68. Cambridge University Press.

- Myers, S., & Jake, J. (2000). Four types of morphemes: Evidence from aphasia, code switching, and second language acquisition. *Linguistics*, 8(6), 1053–1100.
- Pavlenko, A. (2000). L2 influence on L1 late bilingualism. *Issues in Applied Linguistics*, 11(2), 175–205.
- Polinsky, M. (1997). *American Russian: Language loss meets language acquisition*. In Browne, W., Dornisch, E., Kondrashowa, N., & Zec, D. (Hgg.), *Proceedings of the Annual Workshop on Formal approaches to Slavic Linguistics: The Cornell Meeting 1995*. Ann Arbor: Michigan Slavic Publications. p.370-406.
- Schaufeli, A. (1996). Word order patterns in contact: Turkish in the Netherlands. *Southwest Journal of Linguistics*, 15(1/2), 153–169.
- Schmid, M. S. (2002). *First Language Attrition, Use and Maintenance: The Case of German Jews in Anglophone Countries*. Amsterdam: John Benjamins.
- Schmidt, A. (1985). *Young People's Dyrbal: An Example of Language Death from Australia*. Cambridge: Cambridge University Press.
- Schmitt, E. (2001). *Beneath the surface: signs of language attrition in immigrant children from Russia* (Unpublished Doctoral Dissertation). University of South California.
- Seliger, H. (1989). Deterioration and creativity in childhood bilingualism. In Hyltenstam, K., & Obler, L. K. (Eds.), *Bilingualism across the lifespan*. Cambridge: Cambridge University Press.
- Seliger, H., & Vago, R. M. (1991). The study of first language attrition: An overview. In Seliger, H., & Vago, R. M. (Eds.), *First language attrition* (pp. 3–15). Cambridge: Cambridge University Press.
- Shtub, A., Levin, N., & Globerson, S. (1993). Learning and forgetting industrial skills: an experimental model. *International Journal of Human Factors in Manufacturing*, 3(3), 293–305.
- Smythe, P. C., Jutras, G. C., Bramwell, J. R., & Gardner, Robert C. (1973). Second Language Retention over Varying Intervals. *The Modern Language Journal*, 57(8), 400-405.
- Sorace, A. (2000). Differential effects of attrition in the L1 syntax of near-native L2 speakers. In Howell, C., Fish, S., & Keith-Lucas, T. (Eds.), *Proceedings of the 24th Boston University conference on language development* (pp. 719–725). Somerville, MA: Cascadilla Press.
- Taele, P., & Hammond, T. (2010) LAMPS: A sketch recognition-based teaching tool for Mandarin Phonetic Symbols. *Journal of Visual Languages and Computing*, 21, 109-120.
- Tomiyama, M. (1999). The first stage of second language attrition: A case study of a Japanese returnee. In Hansen, L. (Ed.), *Second language in Japanese contexts* (pp. 59-79). New York, NY: Oxford University Press.
- Wang, J. H., Spencerb, K., & Xing, M. J. (2009). Metacognitive beliefs and strategies in learning Chinese as a foreign language. *System*, 37, 46–56.
- Weinreich, U. (1953). *Language in Contact*. The Hague: Mouton.
- Weltens, B. (1987). The attrition of foreign language skills: A literature review. *Applied Linguistics*, 14(4), 344-363.
- Weltens, B., van Els, T., & Schils, E. (1989). The long-term retention of French by Dutch students. *Studies in Second Language Acquisition*, 11, 205-216.
- Winford, D. (2003). *An Introduction to Contact Linguistics*. United Kingdom: Blackwell Publishing.
- Yoshida, K., & Arai, K. (1990). Kikoku shijo no gaikokugo risuningu noryoku no hoji nikansuru kosatsu [On the retention of foreign listening skills of returnees]. *A survey on the foreign language retention of returnees*, 2, 9-28. Tokyo: Japan Overseas Student Education Foundation.



## APPENDIX A

## Mandarin Pre and Post Tests

Mandarin Tests (中文版)

Foreign Languages Department, Faculty of Modern Languages and Communication,  
Universiti Putra Malaysia

Semester 1, 2008/2009

Name: \_\_\_\_\_

Matric No. \_\_\_\_\_

## A. 圈出对的汉字。(10%)

Circle the right characters.

1. 我是美国 (入、人、八), (住、往、主) 在吉隆坡 (前测)。我是中国 (人、入、八), (往、住、主) 在北京 (后测)。
2. 我喜欢 (学、字、子) 习汉语, 所以我 (天、太、大) 天汉语书 (前测)。我喜欢学习历史, 所以我每 (太、大、天) 都看历史书 (后测)。
3. 这米饭二 (令、今、零) 吉, 真的 (很、恨、银) 便宜 (前测)。这巧克力十 (今、零、令) 吉, (银、很、恨) 便宜 (后测)。
4. 那本汉 (伍、语、吾) 书不是我 (约、的、钓) (前测)。那本英 (伍、语、吾) 书不是他 (约、的、钓) (后测)。
5. 今天星 (其、期、斯) 六, 我不上学, 回 (家、豪、蒙) 了 (前测)。今天星 (其、期、斯) 五, 我上学, 不回 (家、豪、蒙) 了 (后测)。

## B. 词句重组 (14%)

Rearrange the following words into order to form sentences.

1. 我 图书馆 下午 去 今天  
(前测); 我 学校 上午 去 明天 (后测)。
2. 的 麦克 换了 人民币 美元 银行  
五百 去 (前测); 的 玛丽 换了 欧元 人民  
币 银行 六百 去 (后测)。
3. 去 玛丽 面条 学校 吃 食堂 要 明天 (前  
测); 去 杰克 米饭 学校 吃 餐厅 要 后天 (后  
测)。
4. 华语 王老师 老师 我们的  
是 (前测); 英语 张老师 老师 我们

的 是 (后测)。

5. 要 一碗 鸡蛋汤 喝 我 明天 (前测)  
 ; 要 一碗 西红柿汤 喝 我 后天 (后测)  
 。

6. 天安门 玩 星期天 去 我 (前测); 吉隆  
 坡 玩 星期六 去 我 (后测)。

7. 不 汉语 难 发音 太 (前测);  
 不 英语 难 拼写 太 (后测)。

C. 介绍你的老师 (前测); 介绍你的同学 (后测) (10%)。

Write a short essay to introduce your lecturer (pre test); Write a short essay to introduce your classmate (post test). (no less than 50 words)


## APPENDIX B

### Mandarin Pre and Post Tests

Mandarin Tests (English version)

Foreign Languages Department, Faculty of Modern Languages and Communication,  
University Putra Malaysia

Semester 1, 2008/2009

Name: \_\_\_\_\_

Matric No. \_\_\_\_\_

#### A. Circle the right characters. (10%)

1. I am an American (ru, ren, ba), (zhu, wang, zhu) in Kuala Lumpur (pre test). I am Chinese (ren, ru, ba), (wang, zhu, zhu) in Beijing (post test).
2. I like to (xue xi, zì xi, zi xi) Mandarin, so I read Chinese Books (mei tian, mei tai, mei da) (pre test). I like to (xue xi, zì xi, zi xi) history, so I read books on history (mei tai, mei tian, mei da) (post test).
3. This rice is two (língji jinji lingji), really (hen,hèn, yin) cheap (pre test). This chocolate is ten (jinji, língji, lingji), really (yin, hen, hèn) cheap (post test).
4. That (hanwu, hanyu, hanwu) book is not (woyue, wode, wodiao) (pre test). That (yingwu, yingyu, yingwu) book is not (woyue, wode, wodiao) (post test).
5. Today is (xinqiliu, xinqiliu, xinsiliu). I didn't go to school but (huijia, huihao, huimeng) (pre test). Today is (xinqiwu, xinqiwu, xinsiwu). I will go to school and will not (huijia, huihao, huimeng) (post test).

#### B. Rearrange the following words into order to form sentences. (14%)

1. I the library this afternoon going to am (pre test); I the school this morning going to am (post test).
2. Mike to exchange Chinese currency 500 US dollars for the bank went to (pre test); Mary to exchange Euros 600 Chinese currency for the bank went to (post test).
3. is going to Mary noodles school eat in dining hall tomorrow (pre test); is going to Jack rice school eat in dining hall the day after tomorrow (post test).
4. Mandarin Teacher Wang teacher our is (pre test); English Teacher Zhang teacher our is (post test).
5. am going to a bowl of egg soup drink I tomorrow (pre test); am going to a bowl of tomato soup drink

I the day after tomorrow (post test).

6. in Tiananmen played on Sunday I (pre test); in Kuala Lumpur played on Saturday I (post test).

7. not Chinese difficult pronunciation too is (pre test); not English difficult spelling too is (post test).

C. An introduction to your teacher (pre test); An introduction to your classmate (post test) (10%). (no less than 50 words)
