Chinese Language Learning Anxiety: A Study of Heritage Learners

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ABSTRACT
This study examines Chinese language learning anxiety and its associated factors among heritage learners. Heritage learners are those who have at least one parent whose native language is a variety of Chinese. They form three sub-groups: heritage learners without a Chinese language background, heritage learners with a background in Mandarin, and heritage learners with a non-Mandarin variety background. Chinese heritage learners were found to experience lower levels of anxiety compared to foreign language learners in previous studies and to be more anxious about reading and writing than about speaking and listening. The three sub-groups of Chinese heritage learners’ anxiety experiences in Chinese classes were different. Heritage learners without a Chinese language background were the most anxious, followed by heritage learners with a non-Mandarin variety background, with the Mandarin group being the least anxious. The Mandarin group was significantly less anxious about speaking and listening than the other two groups. The three sub-groups’ anxiety experiences associated with reading and writing tended to be more similar. Correlation and multiple regression results showed that motivation, perceived difficulty level of Chinese, perceived language learning ability, and self-perceived achievement in Chinese classes were significant predictors of anxiety.

Keywords: Chinese as a heritage language, language learning anxiety, Chinese, varieties of Chinese, language learning modalities

INTRODUCTION
As China is playing an increasingly important role in the world economy and international politics, a nationwide interest in learning Chinese has emerged in the United States in the past decade. From 1998 to 2002, enrollments in Chinese classes in American higher-education institutes increased by 20%, from 28,456 to 34,153 students (Welles, 2004). In 2006, the number of students enrolled in Chinese classes rose to 51,582, which was a 51% increase compared to the year 2002 (MLA, 2006). In 2009, Chinese enrollments jumped to 60,976, with an expansion of 18.2% since 2006, making Chinese the 7th most popular language among college students in the U.S. (MLA, 2009). According to a national survey conducted by the Center for Applied Linguistics (Rhodes & Pufahl, 2010), the number of middle and high schools in the U.S. offering Chinese quadrupled from 1997 to 2008.

As a general trend in foreign language (FL) learning, college-level students in the U.S. seem to have difficulty in sustaining their efforts in foreign languages. The surveys conducted by MLA (2006, 2009) showed that the differential in many FL enrollments between lower-level and upper-level classes was dramatic. Chinese is one of those languages. In 2006, for every 9 enrollments in first-year and second-year Chinese, there were only two enrollments in an advanced Chinese course (MLA, 2006). In 2009, Chinese enrollments were somewhat stronger, showing one advanced student enrolled for every three at the introductory level (MLA, 2009).
According to the most recent data from the U.S. Census Bureau, the number of persons who speak Chinese (including all varieties of Chinese) in the U.S. ranks second among those who speak a language other than English (Ryan, 2013). Not surprisingly, the number of Chinese heritage learners has been rapidly increasing in Chinese classes (Wen, 2011; He & Xiao, 2008). Research (Fishman, 2001; Valdés, 2001) has shown that heritage language (HL) learners and traditional FL learners differ not only linguistically, but also affectively. Thus, it is worth investigating whether anxiety also troubles Chinese HL learners. This study attempts to investigate anxiety experiences specific to Chinese HL learners and differences among subgroups of Chinese HL learners.

According to some researchers, language learning anxiety is partly responsible for the high dropout rates (Gardner, Moorcroft, & MacIntyre, 1987). Learners with the highest levels of anxiety were shown to be more at risk for dropping out of their FL courses than their low-anxiety counterparts (Bailey, Onwuegbuzie, & Daley, 2003). Because it is quite possible that anxiety might be one of the reasons for the high dropout rates in Chinese language programs, learners’ anxiety experiences must be explored. In recent years, several studies have examined anxiety levels of students who learn Chinese as a FL and explored a number of factors associated with their anxiety. I turn now to a review of previous research on foreign and HL learning anxiety in general, and in Chinese courses specifically.

**REVIEW OF PREVIOUS RESEARCH**

**Foreign Language Learning Anxiety**

Students commonly report ‘uncomfortable’ experiences in their FL classes. For example, many FL learners in a classroom setting feel cold, sweat, distort their sounds, or even tremble when called on to perform a task in front of the class. Earlier studies conceptualized anxiety associated with FL classrooms as a simple transfer of other types of anxiety (i.e., trait anxiety, test anxiety, or public speaking anxiety) in language learning and produced mixed and even contradictory results (Chastain, 1975; Kleinnmann, 1977). Scovel (1978) pointed out that the inconsistent results of the early studies may result from researchers’ use of varying constructs and measures of anxiety. Since that time SLA researchers have generally agreed that FL learning anxiety should be viewed as a situation-specific anxiety independent of other types of anxieties (e.g. Gardner, 1985; Horwitz, Horwitz, & Cope, 1986; MacIntyre & Gardner, 1994).

Horwitz, Horwitz and Cope (1986) defined FL anxiety as “a distinct complex set of self-perceptions, beliefs, feelings and behaviors related to classroom language learning arising from the uniqueness of the language learning process” (p.128). They identified three anxieties related to FL anxiety: communication apprehension (McCroskey, 1970), fear of negative evaluation (Watson & Friend, 1969), and test anxiety (Sarason, 1978). In addition, they offered an instrument, the Foreign Language Classroom Anxiety Scale (FLCAS), to measure FL anxiety. Their definition of FL anxiety and the FLCAS have been widely used in the field.

The FLCAS is based on the situation-specific and unidimensional construct of FL anxiety proposed by Horwitz, Horwitz and Cope (1986). The FLCAS is a 33-item self-report measure that consists of items scored on a 5-point Likert Scale, ranging from *strongly agree* to *strongly disagree*.
disagree. The 33 items assess a learner’s level of FL anxiety, as evidenced by subjective feelings, perceptions, negative attitudes towards FL classes, and avoidance behaviors (Horwitz, 1986). In terms of specific language skills, the FLCAS mainly addresses anxiety associated with speaking in FL learning. In addition, the FLCAS is a generic instrument that is not specific to any target language. Thus, the FLCAS has been widely used to measure general FL anxiety.

After the introduction of the FLCAS, researchers were able to measure FL anxiety more precisely. Many studies have shown that FL anxiety is prevalent among FL learners (Horwitz, Horwitz, & Cope, 1986; MacIntyre & Charos, 1996; MacIntyre & Gardner, 1989, 1991a, 1991b). Studies in a variety of language learning contexts have found that approximately one-third of students studying a FL experience at least a moderate level of FL anxiety (e.g. Aida, 1994; Horwitz, Horwitz & Cope, 1986; Horwitz, 2001; Le, 2004). The fact that approximately one of every three students suffers from a certain degree of anxiety in FL classrooms should be taken seriously in all types of FL instruction (Horwitz, 2001).

In addition, a large number of studies have investigated the relationship between FL anxiety and second language achievement. These studies generally report a consistent, moderately negative relationship between measures of language anxiety and language achievement (Horwitz, 2001). For example, Gardner and MacIntyre (1993a) found language anxiety to be the largest single correlate of FL achievement. Studies have also shown that FL anxiety is likely to have a negative impact on students’ attitudes and motivation toward language study (e.g. Phillips, 1990, 1992; Spitalli, 2000). As can be seen, FL anxiety is not only prevalent among language learners but appears to interfere with language learning.

A large number of sources of FL anxiety have been identified in the literature. For example, Horwitz, Horwitz, and Cope (1986) considered FL anxiety as resulting from learners’ difficulties presenting themselves authentically in the new language. MacIntyre and Gardner (1993a) proposed that language anxiety stem from repeated negative experiences associated with the FL. Based on a thorough literature review and the researcher’s own insights, Luo (2012) proposed that four major sources contribute to FL anxiety, namely, the classroom environment, learner characteristics, the target language, and the FL learning process itself.

In the past decade, many studies (e.g. Saito, Horwitz & Garza, 1999; Kim, 2000; Cheng, Horwitz & Schallert, 1999; Cheng, 2004; Pae, 2013) have suggested that FL listening, reading, and writing anxieties are related to but distinguishable from general FL anxiety (mainly speaking anxiety) as measured by the FLCAS. A number of skill-based instruments have been developed to measure anxieties associated with specific language skills (e.g. Cheng, 2004; Saito, Horwitz & Garza, 1999; Kim, 2000). In addition, some studies (Saito, Horwitz, & Garza, 1999; Le, 2004; Zhao, Guo, & Dynia, 2013) indicate that the target language has an effect on FL anxiety. Thus, research on FL anxiety has been moving its focus on general FL anxiety to skill-based anxiety and/or language-specific anxiety.

**Chinese Foreign Language Learning Anxiety**

Luo (2011, 2014) updated the FLCAS (Horwitz, Horwitz, and Cope, 1986) and developed an anxiety scale specific to the Chinese language. The Chinese Language Learning Anxiety Scale
developed by Luo (2011, 2014) incorporated the unique characteristics of the Chinese language and had four subscales reflective of anxieties associated with each of the four skills.

Zhao and Whitchurch (2011) adopted the FLCAS and investigated FL anxiety and its associated factors in college-level Chinese classrooms in the U.S. The results showed that anxiety was negatively correlated to both subjective and objective measures of performance. Students who perceived the course as more difficult than they expected had higher anxiety than those who thought otherwise, and Chinese language learners’ anxiety levels differed with respect to experience in the target country but not with respect to gender or course level.

Zhao, Guo and Dynia (2013) examined reading anxiety among university students learning Chinese as a foreign language in the United States. Their findings showed that FL reading anxiety was negatively correlated with reading performance among some elementary level and intermediate level students. Moreover, unfamiliar scripts, unfamiliar topics, and worry about comprehension were found to be the major sources of FL reading anxiety.

**Chinese Heritage Language Learning Anxiety**

To date, little research has been conducted to investigate HL learners’ anxiety experiences (see Tallon, 2009, 2011 for a detailed review). In addition to some anecdotal evidence on Spanish heritage learners’ anxiety (Levine, 2003; Mejías et al., 1991), Tallon (2009, 2011) made one of the first attempts to investigate the language learning anxiety levels among heritage students of Spanish using the FLCAS. The participants in his study were 413 students (209 heritage students and 204 non-heritage students) taking Spanish at a large university in the Southwestern United States. In order to identify heritage learners, participants were given a definition of HL learner and a definition of non-heritage student and were asked to self-identify themselves as heritage or non-heritage students. Tallon discovered that heritage learners experienced lower levels of anxiety than non-heritage learners. In addition, heritage learners in his study reported lower anxiety scores than other college-level students from previous studies reported in the literature. In this study, all heritage learners were treated as a uniform group. As heritage-status was self-identified by the participants, it is hard to know whether these heritage learners could possibly form subgroups that deserve further examination. As the FlCAS measures general FL anxiety, Tallon did not examine heritage learners’ anxiety associated with specific language skills.

A few of the studies on the anxiety of Chinese language learners have touched upon heritage-learning status. For example, Le (2004) adopted the FLCAS and investigated the anxiety of American college students studying Chinese in seven key universities in China. He classified the students into three groups: (1) Chinese background, including students with any Chinese family backgrounds from any country or area; (2) non-Chinese Asian background, including students with Japanese, Korean, Vietnamese and other Southeast Asian backgrounds; and (3) other background. Le treated the first group as heritage learners. The findings showed that the participants in this study reported the highest levels of FL anxiety among all the studies using the FLCAS. Moreover, the study found the three ethnic groups experienced the same high level of FL anxiety, e.g., heritage and non-heritage Chinese language learners in this study did not show differences in the levels of FL anxiety. Heritage learners in Le’s study were defined differently from those in Tallon’s study, which may partly explain why the two studies have different results.
Luo (2013) adopted the Chinese Language Learning Anxiety Scale and examined the influence of a number of background variables: heritage-learning status, gender, school, ethnic background, year in the college, Chinese proficiency level, and elective-required status. Participants were Chinese language learners taking Chinese courses at two universities in the U.S., categorized according to three groups: (1) heritage learners without a Chinese language background; (2) heritage learners with a Chinese language background; and (3) non-heritage learners. Results showed that U.S. university students’ Chinese language learning anxiety was not high on average, but that participants’ heritage-learning status and proficiency level had significant effects. More specifically, advanced Chinese language learners were significantly less anxious than intermediate and elementary learners. Heritage learners with a Chinese language background had significantly lower levels of anxiety than non-heritage learners and heritage learners without a Chinese language background.

The fact that Chinese is an umbrella term for a wide range of varieties that are sometimes mutually unintelligible may further complicate the issue of heritage-learning status of Chinese language learners. Among all the varieties of Chinese, Mandarin is the dominant variety and it is the variety taught in most language classrooms in the U.S. However, many Chinese HL learners speak a non-dominant variety at home (e.g. Cantonese, Hakka, Taiwanese, etc.), yet they are usually placed in the heritage track along with heritage learners with a Mandarin background (Wong & Xiao, 2010; Wu & Leung, 2014). Researchers have realized the need for a closer examination of the language experiences of Chinese heritage students from non-Mandarin variety backgrounds. Wong and Xiao (2010) interviewed 64 Mandarin learners from various non-Mandarin variety backgrounds. They explored the complex identity issues of Chinese heritage learners who speak a non-Mandarin variety of Chinese and reported their challenges of being in a class designed for heritage learners with a Mandarin background in American universities. Wu and Leung (2014) examined the struggles that middle-school Chinese heritage students with non-Mandarin backgrounds faced with Mandarin as an imposed linguistic identity. Since Chinese heritage learners with Mon-mandarin backgrounds have unique challenges and struggles in Chinese language classes, their anxiety experiences could be different from those with a Mandarin background. Anxiety studies on Chinese HL learners need to distinguish these two subgroups.

Xiao and Wong (2014) investigated the anxiety profiles of 87 Chinese HL learners enrolled in separate first-year heritage-track Chinese courses at two U.S. universities. All 87 participants spoke Mandarin at home. Although four students reported that they had exposure to varieties other than Mandarin, none of the participants exclusively spoke a non-Mandarin variety at home. Their study adopted the FLCAS and a number of other skill-based anxiety scales to measure the anxiety levels of Chinese heritage learners and investigated the relationships among the four language skill-specific anxieties. Furthermore, they hypothesized that writing was the most anxiety-provoking for Chinese HL learners and thus explored the subcomponents of writing anxiety and its possible causes. The results suggest that writing, compared to the other three skills, caused the most anxiety in Chinese heritage learners. Factors associated with the learners’ heritage identity and with the second language writing process were a substantial source of the anxiety reported by students.
Xiao and Wong’s (2014) study adds to our knowledge of Mandarin-background Chinese HL learners’ anxiety experiences. However, HL learners with Mandarin background enrolled in separate heritage-track courses only represent a subgroup of Chinese HL learners due to the diversity of Chinese heritage learners’ linguistic and cultural backgrounds, learning experiences, and learning contexts. The experience of anxiety could widely vary among subgroups of Chinese heritage learners, as some speak Mandarin at home all the time, some speak a variety other than Mandarin at home, and some do not speak Chinese at home at all. Those students who have a Chinese heritage but do not speak any variety of Chinese at home may experience particularly high levels of anxiety in Chinese classes due to their physical appearance or to the high expectations of their teachers or classmates. Thus, it seems worthwhile to divide Chinese HL learners into subgroups and explore different groups’ anxiety experiences.

**Research Questions**
The present study explores U.S. college-level Chinese heritage learners’ anxiety experiences in Chinese classes. The two main research questions are the following:

1. In what ways do particular subgroups of Chinese heritage learners differ in terms of the anxiety that they experience in Chinese language classes?
2. How is Chinese HL learners’ anxiety related to other learning variables such as age, motivation to learn Chinese, perceived difficulty of the language, self-perceived achievement in the Chinese class, and perceived language learning ability?

**Methodology**
A survey was administered to 447 Chinese language learners in Chinese language classes at two large public universities in the U.S., one in the Southwest and the other in the Midwest, during regular class sessions. The participants were told that all the information they would provide was exclusively for research purposes and that their identities would be kept confidential. The survey was anonymous and participation was voluntary. No incentives of any kind were offered. Answering the questionnaire took approximately 5 minutes. All 447 participants completed the questionnaire, but 19 were incomplete and were thus excluded from further consideration.

**Participants**
Participants who indicated that they had at least one parent who was a native speaker of Chinese were considered Chinese heritage learners and their answers were analyzed for the present study. A total of 171 respondents were included: 78 males, 92 females, and 1 omitting the gender indication. The participants were 18 to 40 years of age ($M = 20.32, SD = 2.47$). 133 participants were enrolled at the Southwest institution, and 38 were in the Midwest. Based on whether the participants spoke or at least understood Chinese at home, this study further divided the 171 Chinese heritage learners into three groups: learners who did not understand or speak Chinese before taking any Chinese classes (Group 1: Heritage Learners without a Chinese Language Background), learners who understood or spoke Mandarin (or Mandarin and other varieties of Chinese) before taking any Chinese classes (Group 2: Heritage Learners with a Mandarin Background), and learners who understood or spoke only a variety of Chinese other than
Mandarin before taking any Chinese classes (Group 3: Heritage Learners with a non-Mandarin Variety Background).

Among the 171 learners in the study, 31 (18.1%) did not understand or speak any variety of Chinese before enrolling in a Chinese class; 84 (49.1%) spoke or understood Mandarin (or Mandarin and other varieties of Chinese) before taking any Chinese classes; and 56 (32.7%) participants spoke or understood only a variety other than Mandarin (e.g. Cantonese, Taiwanese, etc.) before taking any Chinese classes. Among the 140 heritage learners with a Chinese language background in groups 2 and 3, 106 (75.7%) reported their native language to be a variety of Chinese (e.g. Mandarin, Cantonese, Taiwanese) and 127 (90.7%) considered themselves Chinese-American. Among the 31 heritage learners without a Chinese language background, 24 (77.4%) participants considered themselves to be Chinese-American. Among the 171 participants, 92 (53.8%) had studied Chinese before coming to the university while 79 (46.2%) had not. Please refer to Table 1 for a detailed summary of participants’ demographic information in areas such as heritage-learning status, proficiency level, elective-required status, and native language.

Table 1.

Sample Distributions

<table>
<thead>
<tr>
<th>Background Variables</th>
<th>Number &amp; Percentage of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heritage-learning Status</strong></td>
<td></td>
</tr>
<tr>
<td>Learners without Chinese language Background</td>
<td>31  18.1%</td>
</tr>
<tr>
<td>Mandarin Group</td>
<td>84  49.1%</td>
</tr>
<tr>
<td>Non-Mandarin Variety Group</td>
<td>56  32.7%</td>
</tr>
<tr>
<td><strong>Proficiency Level</strong></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>93  54.4%</td>
</tr>
<tr>
<td>Intermediate</td>
<td>42  24.6%</td>
</tr>
<tr>
<td>Advanced</td>
<td>36  21.2%</td>
</tr>
</tbody>
</table>
INSTRUMENTS
Two instruments were used in this study: a background questionnaire and the Chinese Language Learning Anxiety Scale (Luo, 2014). The background questionnaire (See Appendix A) elicited information on gender, age, ethnicity, year of college, proficiency level, etc.; it also asked participants to estimate the grade they expected to earn in the Chinese class and to rate their motivations for learning Chinese, their perceived FL learning ability, and their perception of the difficulty level of the Chinese language on a 5-point Likert scale.

The Chinese Language Learning Anxiety Scale is a 16-item self-report measure with items scored on a Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree) (see Appendix B). Different from the FLCAS, this measure focuses on anxiety specific to the Chinese language and addresses anxieties associated with the four skills. Thus, this scale consists of four 4-item subscales measuring speaking, listening, reading and writing anxieties in learning Chinese. This instrument was developed in three phases: 1) generation of an initial pool of items; 2) consultation with experts for content validity of the items; 3) administration of the revised pool of items regarding Chinese language learners for item analysis and tests of reliability and validity.

The results of exploratory factor analysis and cross-validation analysis provided strong support for the construct validity of the scale. Results of reliability analysis and correlation analyses indicated that the Chinese Language Learning Anxiety Scale and its four sub-scales have good internal consistency reliability, convergent and discriminant validity, and criterion-related validity. Table 2 summarizes the internal consistency reliabilities (using Cronbach’s Alpha) of the Chinese Language Learning Anxiety Scale and its four subscales (Luo, 2014).

Table 2.

<table>
<thead>
<tr>
<th>Anxiety Scale</th>
<th>Internal Consistency Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Anxiety Scale</td>
<td>.90</td>
</tr>
<tr>
<td>Speaking Anxiety Scale</td>
<td>.84</td>
</tr>
<tr>
<td>Listening Anxiety Scale</td>
<td>.80</td>
</tr>
<tr>
<td>Reading Anxiety Scale</td>
<td>.81</td>
</tr>
<tr>
<td>Writing Anxiety Scale</td>
<td>.79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective-required Status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>88</td>
</tr>
<tr>
<td>Elective</td>
<td>83</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Native Language</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>English or another alphabetic language</td>
<td>55</td>
</tr>
<tr>
<td>Mandarin</td>
<td>54</td>
</tr>
<tr>
<td>A variety of Chinese other than Mandarin</td>
<td>52</td>
</tr>
<tr>
<td>Asian language other than Chinese</td>
<td>10</td>
</tr>
</tbody>
</table>
Chinese language learning anxiety and its four sub-anxieties were calculated as the sum of the item scores in each scale. As the instrument has 16 items, the possible highest score of Chinese language learning anxiety was 80 (16x5) and the lowest possible score was 16 (16x1). As the four sub-scales all have 4 items, the highest possible score for each would be 20 and the lowest possible score would be 4. Thus, the possible range of scores for Chinese language learning anxiety and the four sub-anxieties were 16-80 and 4-20, respectively.

**DATA ANALYSIS**

For descriptive analyses of learners’ Chinese language learning anxiety, means and standard deviations and the frequencies of the responses (i.e., strongly disagree, disagree, neutral, agree, strongly agree) of the 16 items in the Chinese Language Learning Anxiety Scale were calculated and compared. In terms of the influence of heritage-learning status on Chinese language learning anxiety and its four sub-anxieties, one-way ANOVA and MANOVA analyses were used to compare anxiety among different subgroups of Chinese heritage learners. Before the ANOVA and MANOVA tests were conducted, the Kolmogorov-Smirnov test, as well as skewness and kurtosis statistics, were performed on the anxiety scores to make sure that the data were normally distributed.

For the analysis of relationships between anxiety and other variables related to Chinese learning (e.g., age, motivation, perceived language learning ability, perception of the difficulty level of the Chinese language, self-perceived achievement), correlation analyses and multiple regression analyses were used. Pearson correlations were computed to assess the strength and direction of the relationship between anxiety and each of the five learner variables. Multiple regression analysis was used to assess the effect of the learner variables simultaneously and determine which variables were the best predictors of anxiety when examined all together.

Before the multiple regression analyses were conducted, the researcher checked Cook's distance and Leverage values for outliers, examined the P-P plot for normality of residuals, plotted the standardized residuals against the standardized predicted values to check linearity and equality of variances, and studied the correlation matrix of all the independent variables for multicollinearity. All these tests indicated that multiple regression was appropriate for the present data.

**RESULTS AND DISCUSSION**

**Research Question 1**

*In what ways do particular subgroups of Chinese heritage learners differ in terms of the anxiety that they experience in Chinese language classes?*

Before examining the anxiety experiences of particular subgroups, the researcher looked at the anxiety profiles of Chinese HL learners as a whole. For this purpose, the researcher treated all participants as a group and calculated the means and standard deviations of Chinese language learning anxiety and its four sub-anxieties (i.e., speaking, listening, reading, and writing anxieties) and counted the frequencies of the responses (i.e., strongly disagree, disagree, neutral, agree, strongly agree) of the items in the anxiety scales.
Anxiety Profiles of Chinese Heritage Language Learners as a Whole

The results of means and standard deviations of the Chinese Language Learning Anxiety Scale and its four subscales are shown in Table 3. In order to compare the scores of these types of anxiety, the researcher divided the mean by the number of items in each scale and calculated the mean item response for each type of anxiety (see the last column in Table 3 for results).

Table 3.

Means and Standard Deviations of Chinese Language Learning Anxieties

<table>
<thead>
<tr>
<th>Anxiety Type</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Mean Item Response (1= strongly disagree; 5= strongly agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Anxiety</td>
<td>37.89</td>
<td>11.63</td>
<td>2.37</td>
</tr>
<tr>
<td>(max. possible= 80)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaking Anxiety</td>
<td>9.38</td>
<td>3.81</td>
<td>2.35</td>
</tr>
<tr>
<td>(max. possible= 20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening Anxiety</td>
<td>8.76</td>
<td>4.02</td>
<td>2.19</td>
</tr>
<tr>
<td>(max. possible= 20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading Anxiety</td>
<td>9.71</td>
<td>3.36</td>
<td>2.43</td>
</tr>
<tr>
<td>(max. possible= 20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing Anxiety</td>
<td>10.04</td>
<td>3.33</td>
<td>2.51</td>
</tr>
<tr>
<td>(max. possible= 20)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be seen, the mean item response for Chinese language learning anxiety (M=2.37) is not very high, indicating that Chinese heritage learners are not very anxious in Chinese classes on average. Among the four sub-anxieties, the mean item response for Writing Anxiety was the highest (M=2.51), Reading Anxiety (M=2.43) ranked second, followed by Speaking Anxiety (M=2.35), with Listening Anxiety being the lowest (M=2.19). These figures show that Chinese heritage learners find writing and reading in Chinese more anxiety-provoking than speaking and listening to Chinese.

The widely used FLCAS contains 33 items scored on a 5-point Likert scale (ranging from strongly disagree=1 to strongly agree=5). Foreign language anxiety is calculated as the sum of item scores in the scale. The means of FL anxiety as measured by the 33-item FLCAS for Horwitz, Horwitz and Cope's (1986) study, Aida's (1994) and Le's (2004) study were 94.5, 96.7 and 110.21 respectively. Divided by the number of items, (i.e., 33), they become 2.86, 2.93 and 3.34, which are all higher than the 2.37 found for Chinese heritage learners’ anxiety in the present study.

In Zhao and Whitchurch’s (2011) study, the mean item response for non-heritage Chinese language learners’ anxiety is 2.69,$^5$ much higher than the anxiety level of Chinese heritage learners in the present study. This result also echoed Tallon's (2009) finding that heritage learners tended to experience lower levels of anxiety than non-heritage learners in Spanish classes. Most Chinese heritage learners understood or spoke Chinese before beginning Chinese classes. Since they are familiar with the concepts of tones and characters, the most difficult
features of Chinese, before taking Chinese classes, Chinese heritage learners may find learning Chinese less intimidating than non-heritage learners.

Although Chinese heritage learners with Mandarin and non-Mandarin variety backgrounds are amply exposed to the language at home, they may not have much experience reading and writing Chinese at home (Li, 2006; Xiao, 2008). Many studies (e.g., Aida, 1994; Zhao & Whitchurch, 2011) on FL anxiety have suggested that previous exposure to the language may be related to lower anxiety levels. Thus, a lack of exposure to formal reading and writing in Chinese at home may partly explain why Chinese heritage learners as a whole have more anxiety towards reading and writing than towards speaking and listening as they study Chinese.

Chinese heritage learners' responses to the 16 items in the Chinese Language Learning Anxiety Scale are reported in Table 4. All frequencies and percentages refer to the number of students who agreed or strongly agreed (or disagreed or strongly disagreed) with responses to statements indicative of Chinese language learning anxiety rounded to the nearest whole number.6

Table 4.

Frequency Analyses of Chinese Language Learning Anxiety Items

<table>
<thead>
<tr>
<th>Item</th>
<th>(SA=strongly agree, A=agree, N=neither agree nor disagree, D=disagree, SD=strongly disagree) (n= number of responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speak</td>
<td></td>
</tr>
<tr>
<td>anxiety</td>
<td></td>
</tr>
<tr>
<td>Y1.</td>
<td>It embarrasses me to volunteer answers in my Chinese class.</td>
</tr>
<tr>
<td>4 (2.3%)</td>
<td>23 (13.5%)</td>
</tr>
<tr>
<td>Y2.</td>
<td>I can feel my heart pounding when I'm going to be called on in my Chinese class.</td>
</tr>
<tr>
<td>6 (3.5%)</td>
<td>27 (15.8%)</td>
</tr>
<tr>
<td>Y3.</td>
<td>I feel confident when I speak in my Chinese class.</td>
</tr>
<tr>
<td>29 (17%)</td>
<td>64 (37.4%)</td>
</tr>
<tr>
<td>Y4.</td>
<td>I feel very self-conscious about speaking Chinese in front of other students.</td>
</tr>
<tr>
<td>10 (5.8%)</td>
<td>30 (17.5%)</td>
</tr>
<tr>
<td>Listen</td>
<td></td>
</tr>
<tr>
<td>anxiety</td>
<td></td>
</tr>
<tr>
<td>Y5.</td>
<td>I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them.</td>
</tr>
<tr>
<td>19 (11.1%)</td>
<td>28 (16.4%)</td>
</tr>
<tr>
<td>Y6.</td>
<td>I get nervous when all the Chinese tones sound the same to me.</td>
</tr>
<tr>
<td>9 (5.3%)</td>
<td>22 (12.9%)</td>
</tr>
<tr>
<td>Y7.</td>
<td>I get anxious when I don’t understand what my classmates are saying in Chinese.</td>
</tr>
<tr>
<td>4 (2.3%)</td>
<td>17 (9.9%)</td>
</tr>
<tr>
<td>Y8.</td>
<td>It frightens me when I don't understand what the teacher is saying in Chinese.</td>
</tr>
<tr>
<td>4 (2.3%)</td>
<td>29 (17.0%)</td>
</tr>
<tr>
<td>Read</td>
<td></td>
</tr>
<tr>
<td>ing anxiety</td>
<td></td>
</tr>
<tr>
<td>Y9.</td>
<td>When I’m reading Chinese, I get so confused I can’t remember what I’m reading.</td>
</tr>
<tr>
<td>3 (1.8%)</td>
<td>11 (6.4%)</td>
</tr>
</tbody>
</table>
Y10. I feel intimidated whenever I see a whole page of Chinese in front of me.
   10 (5.8%) 35 (20.5%) 39 (22.8%) 46 (26.9%) 41 (24.0%)

Y11. I have difficulty distinguishing among Chinese characters when reading Chinese.
   5 (2.9%) 23 (13.5%) 39 (22.8%) 63 (36.8%) 41 (24.0%)

Y12. I feel confident when I am reading in Chinese.
   18 (10.5%) 62 (36.3%) 55 (32.2%) 28 (16.4%) 8 (4.7%)

Writing Anxiety

Y13. Writing Chinese characters makes me forget what I'm trying to convey.
   3 (1.8%) 18 (10.5%) 32 (18.7%) 66 (38.6%) 52 (30.4%)

Y14. I’m usually at ease when I’m writing in Chinese.
   14 (8.2%) 52 (30.4%) 59 (34.5%) 35 (20.5%) 11 (6.4%)

Y15. I freeze up when I am unexpectedly asked to write Chinese characters during my Chinese class.
   10 (5.8%) 14 (8.2%) 34 (19.9%) 63 (36.8%) 50 (29.2%)

Y16. I feel unsure of myself when I'm writing in Chinese.
   12 (7.0%) 34 (19.9%) 52 (30.4%) 50 (29.2%) 23 (13.5%)

Although Chinese heritage learners in the present study, on average, seemed to experience lower levels of anxiety compared to FL learners in previous studies, quite a number of heritage learners did experience a high level of anxiety when they studied Chinese (see Table 4). Students who scored highest on Chinese language learning anxiety reported anxiety over speaking. For example, 22.8% of the participants agreed or strongly agreed with the item “I feel very self-conscious about speaking Chinese in front of other students.” Likewise, 22.8% of them disagreed or strongly disagreed that “I feel confident when I speak in my Chinese class”. Quite a number of students reported a high level of listening anxiety as well. For example, 27.5% of the participants agreed or strongly agreed with the statement: “I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them,” and 19.3% of the students agreed or strongly agreed that: “It frightens me when I don’t understand what the teacher is saying in Chinese.”

In terms of literacy, student responses to “I feel intimidated whenever I see a whole page of Chinese in front of me” (26.3%) and “I have difficulty distinguishing among Chinese characters when reading Chinese” (16.4%) showed that they experienced notable anxiety while reading Chinese. Writing was another cause of anxiety in Chinese class: 26.9% of the participants affirmed that: “I feel unsure of myself when I'm writing in Chinese”. Inversely, 26.9% disagreed or strongly disagreed with the following statement: “I’m usually at ease when I’m writing in Chinese.” (26.9%)

Anxiety across Subgroups

As previously mentioned, this study further divided Chinese heritage learners into three groups: Heritage Learners without a Chinese Language Background (Group 1), Heritage Learners with a Mandarin Background (Group 2), and Heritage Learners with a non-Mandarin Variety Background (Group 3).
The mean item response for Chinese language learning anxiety and its four sub-anxieties across the three groups are summarized in Table 5. As can be seen, in speaking, listening and reading anxiety, heritage learners without a Chinese language background scored the highest, followed by the non-Mandarin variety group, with the Mandarin group being the least anxious. In writing anxiety, heritage learners without a Chinese language background still scored the highest, followed by the Mandarin group, with the non-Mandarin variety group being the least anxious.

Table 5.

Mean Item Response of Anxieties across the Three Groups (1= strongly disagree; 5= strongly agree)

<table>
<thead>
<tr>
<th></th>
<th>Chinese Language Learning Anxiety</th>
<th>Speaking Anxiety</th>
<th>Listening Anxiety</th>
<th>Reading Anxiety</th>
<th>Writing Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Group 1</td>
<td>2.74</td>
<td>0.59</td>
<td>2.78</td>
<td>0.93</td>
<td>2.78</td>
</tr>
<tr>
<td>Group 2</td>
<td>2.19</td>
<td>0.72</td>
<td>2.07</td>
<td>0.85</td>
<td>1.85</td>
</tr>
<tr>
<td>Group 3</td>
<td>2.43</td>
<td>0.73</td>
<td>2.52</td>
<td>0.99</td>
<td>2.38</td>
</tr>
</tbody>
</table>

Within each group, heritage learners without a Chinese language background were most anxious in speaking and listening to Chinese, followed by reading and then writing. The non-Mandarin variety group found speaking the most anxiety-provoking, followed by writing and then reading and listening. The Mandarin group experienced the highest level of anxiety in writing, followed by reading, and then by speaking and listening. To further explore the influence of heritage-learning status on Chinese language learning anxiety and its four sub-anxieties, the researcher used ANOVA and MANOVA to compare means in anxieties across the three sub-groups of heritage learners. The ANOVA results indicated that heritage-learning status had a significant effect on Chinese language learning anxiety ($F=7.47$, $df=2$, $p=.001$). In other words, heritage learners without a Chinese language background, the Mandarin group, and the non-Mandarin variety group experienced significantly different amounts of anxiety in Chinese classes. A close look at the Scheffe Post-Hoc test revealed that heritage learners without a Chinese language background were significantly different ($p=.001$) from the Mandarin group. More specifically, heritage learners without a Chinese language background experienced significantly higher levels of anxiety in the Chinese classroom compared to the Mandarin group ($p=.001$). However, there was no significant difference in Chinese language learning anxiety between heritage learners without a Chinese language background and the non-Mandarin variety group ($p=.140$) or between the Mandarin group and the non-Mandarin variety group ($p=.135$).

The MANOVA results indicated that heritage-learning status had a significant effect on anxieties associated with the four skills, $F= 4.26$, $df=2$, $p=.001$. A close examination of the Tests Between-subjects Effects revealed that the three sub-groups of Chinese heritage learners experienced significantly different levels of anxiety in speaking ($p=.0001$), listening ($p=.0001$), and reading ($p=.044$), but not in writing ($p=.495$). Scheffe Post-Hoc multiple comparisons
indicated that the Mandarin group was significantly less anxious in speaking and listening in Chinese than heritage learners without a Chinese language background ($p=0.002$ for speaking; $p=0.0001$ for listening) and the non-Mandarin variety group ($p=0.018$ for speaking; $p=0.006$ for listening). In addition, the Mandarin group experienced lower levels of anxiety in reading Chinese than heritage learners without a Chinese language background, a difference that approached significance ($p=0.051$). Heritage learners without a Chinese background and the non-Mandarin variety group did not differ from each other significantly on the four types of anxieties associated with the four skills in learning Chinese. The three sub-groups of Chinese heritage learners were not significantly different from one another on writing anxiety. Though not statistically significant, it is nonetheless noteworthy that the Mandarin Group expressed slightly more anxiety regarding writing than did the non-Mandarin variety Group (Table 5 above); writing was the only modality in which this happened.

In sum, the non-Mandarin variety group was more anxious in Chinese classes than the Mandarin group except for writing. Due to the unique linguistic and identity experience of the non-Mandarin variety group, a number of studies (e.g., Wong & Xiao, 2010; Wu & Leung, 2014) have focused on Chinese non-Mandarin variety speakers and examined their struggle as Chinese HL learners. For example, Wong and Xiao’s (2010) study found that most students of non-Mandarin variety backgrounds were most anxious about speaking compared to the other three skills, which is deemed to be the easiest skill by heritage learners of Mandarin background. Chinese varieties (e.g. Mandarin, Cantonese, Shanghainese) are, most of the time, mutually unintelligible, but all of them share the same writing system. It should be noted that the Chinese writing system has two variants: the simplified and the traditional. Some areas, such as Mainland China, use the simplified system, while other areas, such as Hong Kong and Taiwan, rely on the traditional. Because the simplified was developed from the traditional and the two systems have much in common, people with training in either style usually do not find the other difficult to learn. This relationship between the two variants may explain the non-Mandarin variety group’s comfort with writing found in this study and their anxiety towards speaking in Wong and Xiao’s (2010) study.

The ease of learners without a Chinese language background with regards to literacy is perhaps because they perceive less of a proficiency gap between other heritage learners and themselves, or because they are not so concerned about reading and writing as they are about speaking and listening. The anxiety of the Mandarin group with regard to writing is perhaps due to their self-perceived lack of proficiency in writing or their perception of the importance of the writing skill. Chinese HL learners’ anxiety levels about different skills may also be related to their perception of the different values of the four skills in terms of their identities and social demands (McKay & Wong, 1996; Wong & Xiao, 2010).

Chinese heritage learners with a Mandarin background usually speak Mandarin at home and have a good deal of Mandarin exposure listening to family members, which perhaps helps them feel at ease with aural skills. However, they do not usually receive training in writing at home, which might explain why there is no significant difference in participants’ responses to writing anxiety across the three sub-groups of heritage learners. Chinese heritage learners with a non-Mandarin variety background speak or are exposed to a variety of Chinese other than Mandarin
at home. Although other varieties of Chinese differ from Mandarin in many ways, ranging from pronunciation to grammar, they share some common characteristics with Mandarin such as vocabulary and the writing system. The differences and connections between Mandarin and the other varieties may partly explain why the non-Mandarin variety group was more anxious than the Mandarin group, but less anxious than heritage learners without a Chinese language background.

Heritage learners without a Chinese language background technically have no advantage over non-heritage learners in terms of learning Chinese because they do not speak the language at home, nor do they have more opportunity to listen to Chinese than non-heritage learners. However, they sometimes feel that their physical appearance or identity as a Chinese-American may cause people to have high expectations of their Chinese proficiency. Those expectations from outsiders and from their parents may put them under greater pressure, which could explain why they experience the highest level of anxiety in Chinese classes among the three sub-groups of heritage learners.

Research Question 2
How is Chinese heritage learners' anxiety in Chinese classes related to other learning variables such as age, motivation in learning Chinese, perceived difficulty of the Chinese language, self-perceived achievement in class, and perceived language learning ability?

Table 6 presents the correlations between each of the selected learner variables and FL anxiety. Of the five variables, four were significantly correlated to anxiety, with age being the only insignificant predictor. As the data in Table 6 show, Chinese heritage learners' anxiety had a significant positive correlation with the perceived difficulty level of Chinese ($r=.346$, $p=.0001$) and a significant negative correlation with perceived language learning ability ($r=-.253$, $p=.001$), self-perceived achievement in Chinese classes ($r=-.356$, $p=.0001$), and motivation for learning Chinese ($r=-.268$, $p=.0001$). Age was not found to be significantly correlated with Chinese language learning anxiety ($r=.074$, $p=.338$). In other words, students who perceived Chinese to be more difficult were more anxious; students who expected to get a higher grade, who were more motivated in learning Chinese, and who perceived themselves to be better at learning languages tended to experience less anxiety in Chinese classes.

Table 6.

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Anxiety</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation</td>
<td>-.268**</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Perceived difficulty of Chinese</td>
<td>.346**</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Self-perceived achievement</td>
<td>-.356**</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Self-perceived language learning ability</td>
<td>-.253**</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age</td>
<td>.074</td>
<td>.338</td>
</tr>
</tbody>
</table>
The four learner variables found to have a significant correlation with anxiety were then entered into Multiple Regression to examine the simultaneous effect of these variables on anxiety and to determine the relative contribution of these variables to Chinese heritage learners’ anxiety in Chinese classes. The results (Table 7) showed that the four variables as a whole had a significant relationship with Chinese language learning anxiety \( (F(4, 170)=15.5, \ p=.0001) \), and explained 25.5% of the variance in the data. Considering that such a large number of other variables could affect heritage learners’ anxiety experiences in Chinese classes (e.g., learner personality, classroom environment, teaching materials, teaching methods, etc.), the 25.5% of variance explained by the four variables is considerable.

Table 7.

Results of Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Coefficientsa</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>St. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>58.773</td>
<td>6.449</td>
<td>9.114</td>
<td>.000</td>
</tr>
<tr>
<td>Perceived difficulty of Chinese</td>
<td>2.808</td>
<td>.633</td>
<td>.297</td>
<td>4.439</td>
</tr>
<tr>
<td>Self-perceived Achievement</td>
<td>-1.808</td>
<td>.531</td>
<td>-.239</td>
<td>-3.407</td>
</tr>
<tr>
<td>Motivation</td>
<td>-.670</td>
<td>.300</td>
<td>-.156</td>
<td>-2.234</td>
</tr>
<tr>
<td>Self-perceived Language learning Ability</td>
<td>-1.753</td>
<td>.714</td>
<td>-.168</td>
<td>-2.445</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Chinese Language Learning Anxiety

An examination of the coefficients (Table 7) revealed that all four variables were significant predictors of Chinese language learning anxiety. As indicated by the standardized correlation coefficient (Beta), the perceived difficulty of Chinese was the best predictor among the four examined variables, followed by self-perceived achievement, self-perceived language learning ability and, finally, motivation. These results are generally consistent with or provide further evidence for the conclusions reached in previous studies. The finding that perceived difficulty of Chinese is the best significant predictor of anxiety lends support to many scholars’ argument that this perception has an effect on FL learners’ level of anxiety (e.g. Aida, 1994; Le, 2004; Luo, 2012; Saito, Horwitz & Garza, 1999). The results that self-perceived achievement and self-perceived language learning ability were significant negative predictors of anxiety echoed Tóth’s (2007) finding that L2-self-concept had a strong relative influence on FL anxiety among first-year English majors. Scholars have also indicated that learners who perceive themselves to be low achievers and/ or poor learners tend to be more anxious, even though their L2
achievement or learning ability are not necessarily low (Ganschow et al., 1994; Onwuegbuzie et al., 1999; Young, 1991).

The findings of the present study are also similar to those of other previous investigations in that anxiety has been found to correlate negatively with various measures of motivation (e.g., Clément, Dörnyei, & Noels, 1994; Gardner et al., 1992; Tóth, 2007). However, scholars’ opinions vary greatly in the interpretation of this finding. Does low motivation lead to high anxiety, or does high anxiety cause low motivation? Gardner and MacIntyre (1993b) suggest a reciprocal relationship between the two affective variables. Tóth (2007) pointed out that the relationship between anxiety and motivation may not be so straightforward, as we may encounter highly motivated FL students who have a high level of anxiety.

**CONCLUSION AND IMPLICATIONS**

Chinese heritage learners in the present study were found to experience lower levels of anxiety in Chinese classes compared to FL learners in previous studies. However, frequency analyses of anxiety items showed that many heritage learners did experience a high level of anxiety in learning Chinese. In general, Chinese heritage learners were more anxious about literacy than about speaking and listening to Chinese. The three sub-groups of Chinese heritage learners' anxiety experiences in Chinese classes were rather different. Heritage learners without a Chinese language background were the most anxious, followed by heritage learners with a non-Mandarin variety background, with the Mandarin group being the least anxious. The Mandarin group was significantly less anxious about speaking and listening in Chinese classes than the other two groups. The three sub-groups of Chinese heritage learners' anxiety experiences associated with reading and writing tended to be more similar. However, the Mandarin group reported a slightly higher level of writing anxiety than the non-Mandarin variety group. Though the difference was not significant, writing was the only modality that caused more anxiety for the Mandarin group than for the non-Mandarin variety group.

As reported by Wong and Xiao (2010) and Wu and Leung (2014), Chinese heritage learners with exposure to a non-Mandarin variety at home experience unique struggles and challenges at school due to linguistic and identity issues. In order to make learning Chinese a comfortable experience for heritage learners, it is important for Chinese teachers to acknowledge the differences among the three sub-groups of heritage learners and, if possible, to instruct heritage learners in three separate groups. At the very least, Chinese heritage learners without a Chinese language background should not be in the same class with heritage learners who speak Mandarin at home.

Chinese heritage learners’ anxiety in Chinese classes was positively correlated with perceived difficulty level of Chinese and negatively correlated with motivation, perceived language learning ability, and self-perceived achievement in Chinese classes. These four variables were significant predictors of anxiety. Since students who perceive Chinese to be less intimidating tend to be less anxious in Chinese classes, an orientation workshop demystifying the Chinese language at the beginning of Chinese classes may help students be mentally and emotionally prepared for the learning task ahead. As motivation and anxiety were found to have a negative correlation, activities or practices that could enhance students’ motivation may also help foster a
more comfortable learning experience for heritage students. For example, Chinese teachers could introduce aspects of Chinese culture such as calligraphy, songs, poems and movies into Chinese classes, or they could take advantage of technologies such as Internet, Skype, Facebook, etc. to bring Chinese more to life. As Chinese heritage learners’ self-perceptions of language learning ability and achievement were reported to be negatively correlated with their anxiety levels, it may be important for Chinese teachers to provide sufficient encouragement and positive reinforcement to alleviate heritage learners’ anxiety.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE STUDIES
Although scholars have identified numerous sources of FL anxiety (see Luo, 2012 for a detailed review), no studies to date have examined the causes of Chinese language learning anxiety among heritage learners. Are the causes of anxiety within particular subgroups of Chinese heritage learners, such as the three identified in this study, similar or different? Compared to non-heritage learners, do heritage learners have unique reasons for being anxious in Chinese classes? Future studies should conduct in-depth interviews with Chinese language teachers and highly anxious Chinese heritage learners to gain insights into the sources of their anxiety. An inventory of sources of anxiety among Chinese language learners, both non-heritage and subgroups of heritage learners, could help Chinese language teachers identify anxious learners, adopt appropriate teaching methods, and design proper curriculum for reducing anxiety.

Another limitation of the present study lies in the definition of HL learners. The present research defined Chinese HL learners as those who had at least one parent whose native language was a variety of Chinese. This definition excludes those learners whose parents do not speak Chinese as a native language but whose grandparents or relatives do. Future studies should include this group of learners.

The question of “dialect”, or Chinese varieties other than Mandarin, must be also given special consideration in future research (cf. Wu & Leung, 2014). As ‘the Chinese language’ is an umbrella term for a wide range of linguistic varieties, future studies may also work on better ways to divide Chinese heritage learners into subgroups. In the present study, learners who spoke only Mandarin and those who spoke Mandarin plus other varieties were placed in the same group. The rationale for this classification is based on the belief that learners’ anxiety levels are related to their Mandarin proficiency levels, considering Mandarin is the Chinese variety taught at most universities. However, questions remain as to whether it is necessary to separate Chinese heritage learners exclusively with a Mandarin Background from those who have exposure to both Mandarin and other varieties. It would also be worthwhile to investigate whether Chinese heritage learners’ anxiety experiences are related to placement practices in various Chinese language programs.

ACKNOWLEDGEMENTS
I would like to extend my sincere thanks to the anonymous reviewers and the editors, especially Dr. Andrew Lynch, for their insightful comments. Without their help, the paper in the present form would not have been possible.
REFERENCES


APPENDIX A
Background Questionnaire

Gender: [ ] Female [ ] Male Age: __________

Major: __________ Minor: __________

I am _______. [ ] White [ ] Hispanic [ ] African-American [ ] Chinese American
[ ] Asian American but not Chinese American [ ] Asian international students ____ (specify)
[ ] other ___________________ (specify)

I’m taking Chinese as a(n) [ ] required [ ] elective course.

What year are you in? [ ] Freshman [ ] Sophomore [ ] Junior [ ] Senior [ ] Graduate [ ] Other

On a scale of 1 (low) to 5 (high), please rate your anxiety about learning Chinese.

Low 1 2 3 4 5 High

Compared to other languages, Chinese is an (Easy 1 2 3 4 5 Difficult) language.

How motivated are you to learn to

speak Chinese? Low 1 2 3 4 5 High

understand Chinese? Low 1 2 3 4 5 High

read Chinese? Low 1 2 3 4 5 High

write Chinese? Low 1 2 3 4 5 High

For each item, indicate whether you (1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree or (5) strongly agree.

I’m good at learning foreign languages. 1 2 3 4 5

I have a high expectation of myself in terms of learning Chinese. 1 2 3 4 5

Chinese is very important to me. 1 2 3 4 5

What grade do you expect to get in this Chinese class?
A  A- B+ B B- C+ C C- D F

What is your native language(s)? (check all those that apply)
[ ] English [ ] Mandarin [ ] Cantonese [ ] Taiwanese
[ ] another variety of Chinese other than Mandarin, Cantonese or Taiwanese ____ (please specify)
[ ] other languages ___________ (please specify)
Are your parents native Chinese speakers (including all varieties of Chinese Language such as Mandarin, Cantonese, Taiwanese, etc.)? If yes, please list the variety(ies) of Chinese your mother or father speaks.

☑ mother______________________________________
☑ father_____________________________________

Did you speak or understand any variety of Chinese (e.g. Mandarin, Cantonese, Taiwanese) before you started to take Chinese classes?

☑ Yes  ☐ No

If yes, which variety (ies)__________________________________________________________

Did you previously study Chinese before coming to CU (e.g. in Chinese community schools, after-school programs, secondary or high school)?  ☐ Yes  ☐ No

If yes, for how long?  ☐ less than 1 year  ☐ 1 year  ☐ 2 years  ☐ 3 years  ☐ 4 years  ☐ more than 4 years

In the next few years, I expect to use Chinese (check all those that apply)

☐ with family members  ☐ with friends  ☐ during study abroad  ☐ for my research  ☐ during travel abroad  ☐ on a job  ☐ for other purposes________________________________(please specify)

What other foreign languages have you studied?________________________________________

Is there anything you would like to add about your experience studying Chinese? (Use the space below)
APPENDIX B

The 16 Items in the Chinese Language Learning Anxiety Scale

1. When I’m reading Chinese, I get so confused I can’t remember what I’m reading.
2. Writing Chinese characters makes me forget what I’m trying to convey.
3. It embarrasses me to volunteer answers in my Chinese class.
4. I get frustrated when I cannot distinguish among the Chinese tones even after I have worked hard to learn them.
5. I’m usually at ease when I’m writing in Chinese.
6. I can feel my heart pounding when I’m going to be called on in my Chinese class.
7. I get nervous when all the Chinese tones sound the same to me.
8. I feel intimidated whenever I see a whole page of Chinese in front of me.
9. I have difficulty distinguishing among the Chinese characters when reading Chinese.
10. I get anxious when I don’t understand what my classmates are saying in Chinese.
11. I feel confident when I am reading in Chinese.
12. I freeze up when I am unexpectedly asked to write Chinese characters during my Chinese class.
13. It frightens me when I don't understand what the teacher is saying in Chinese.
15. I feel unsure of myself when I’m writing in Chinese.
16. I feel very self-conscious about speaking Chinese in front of other students.

Note: Items 3, 6, 14, 16 reflective of Speaking Anxiety; items 4, 7, 10, 13 indicative of Listening Anxiety; Items 1, 8, 9, 11 reflective of Reading Anxiety; items 2, 5, 12, 15 indicative of Writing Anxiety.
NOTES
1. Hereafter *Chinese* refers to all varieties of Chinese.

2. It should be noted that students whose parents do not speak Chinese but grandparents and relatives speak Chinese language are learners “with a heritage motivation” (Van Deusen-Scholl, 2003, p. 222), but they are not included in the present study. The absence of this group indicates a limitation of this study, and future studies need to take these learners into consideration.

3. The present study does not further examine where these participants studied Chinese before coming to the university. Future studies may need to investigate whether they studied Chinese in Chinese speaking countries, in high schools, or in Chinese heritage schools in the U.S.

4. As students’ understanding of “native language” varies from person to person, these numbers do not seem to correspond to the numbers for the three subgroups of Chinese heritage learners exactly.

5. Zhao and Whitchurch (2011) did not report the mean item response of anxiety directly. The mean item response of 2.69 is a result of calculation based on the data reported in their study.

6. Note that percentages may not total 100 due to rounding.