Asian Journal of English Language Teaching, 14, 89–104
© 2004 The Chinese University Press

An Empirical Study on Anxiety and Motivation in English as a Foreign Language

Mei HAO
Taiyuan University of Technology, PRC

Meihua LIU
The Chinese University of Hong Kong, HKSAR

Ruoping HAO
Taiyuan Teachers' University, PRC

Perceived to be two important affective variables, anxiety and motivation have been found to be highly correlated with second/foreign language acquisition. In order to examine the relationship between achievement motivation, test anxiety and students' English proficiency, the present study investigated 131 graduate students of science at a university in Mainland China. It was found that test anxiety was significantly correlated with the students' English proficiency and the cloze test. A positive relationship was also found between the students' English proficiency and achievement motivation in terms of both motivation to approach success (Ms) and motivation to avoid failure (Mf). Again, these two motivations were significantly related to the cloze test. In addition, differences in test anxiety and achievement motivation between male and female students were identified. Female students reported to be more test-anxious than their male counterparts. Male students were high in Ms whereas females were high in Mf. Finally, suggestions for minimizing students' test anxiety and enhancing motivation for achievement in foreign language learning were provided, and some pedagogical implications were discussed.

Introduction

Anxiety, one of the most prominent and pervasive emotions, defined as a feeling of uneasy suspense (Rachman, 1998), has been a focus of

research in a number of disciplines such as psychology and education. Early in the 1970s, Spielberger (1972) made a distinction between two kinds of anxiety: state anxiety, which was transitory and fluctuated over time, and situation and trait anxiety, which was relatively stable all the time. Based on this distinction, Spielberger constructed the State-Trait Anxiety Inventory (STAI) to measure these two forms of anxiety and the Test Anxiety Inventory (TAI) to measure anxiety in testing situations (1978, 1980, cited in Anderson & Sauser, 1995). Since then, state anxiety, trait anxiety and situation-specific anxiety have become three mainstream approaches to anxiety research (MacIntyre & Gardner, 1991).

Together with the other two commonly used measures — Achievement Anxiety Test (AAT) designed by Alpert and Haber (1960, cited in Zeidner, 1998) and Reactions to Test constructed by Sarason (1984, cited in Zeidner, 1998), the STAI and the TAI have been employed in a multitude of research studies, and anxiety has been found to play an important role in determining achievement levels (Anderson & Sauser, 1995; Hancock, 2001). Meanwhile, test anxiety, one of the most frequently researched situation-specific types of anxiety, has also been found to interfere with students' achievement in educational settings to varying degrees and mainly to be a debilitator in test performance (Anderson & Sauser, 1995; Wolf & Smith, 1995; Zeidner, 1998). In addition to causing poor performance, test anxiety also relates directly to students' fear of negative evaluation and inversely to their self-esteem, self-efficacy, achievement motivation, and gender difference (Wolf & Smith, 1995; Zeidner, 1998).

As a result of the use of different anxiety measure scales, mixed findings — negative, neutral and positive relationships — have been found between anxiety and second language achievement (Scovel, 1978). Thus, Scovel suggested that language researchers should be specific about the type of anxiety to be measured. Since then, second/foreign language researchers have identified various types of anxiety such as state anxiety, trait anxiety, test anxiety, communication anxiety and foreign language anxiety (Hilleson, 1996).

Horwitz, Horwitz, and Cope (1986) proposed that foreign language anxiety was a situation-specific construct and was responsible for students' negative emotional reactions to language learning. They identified three components of foreign language anxiety: communication apprehension, fear of negative evaluation, and test anxiety. They also designed an

instrument, the Foreign Language Classroom Anxiety Scale (FLCAS), to measure this anxiety. Gardner (1985) had also acknowledged that second/foreign language anxiety was situation-specific and claimed that individual differences in anxiety contributed to differences in achievement. To measure this anxiety, the French Use Anxiety Scale and French Class Anxiety Scale was proposed (Gardner, 1985; MacIntyre & Gardner, 1991, 1994).

With the help of these second/foreign language anxiety measures and other research methods, a huge body of empirical studies has revealed that anxiety, though sometimes facilitating (Oxford, 1999; Scovel, 1978), is predominantly debilitating in second/foreign language learning (Hilleson, 1996; Horwitz, 2001; Horwitz et al., 1986; MacIntyre & Gardner, 1991, 1994; Young, 1991). Horwitz (2001) found that language anxiety was experienced by learners in all four language skills and associated with various levels of second language proficiency. Young (1991) concluded that anxiety was negatively correlated to students' oral performance in an informal examination, which was supported by later studies (see Saito, Horwitz, & Garza, 1999, for instance). In addition, all types of second/foreign language anxiety have been revealed to be correlated to confidence and self-esteem, attitude, motivation, and gender and cultural differences, etc. (Hilleson, 1996; MacIntyre & Gardner, 1991).

Like anxiety, motivation has also been ranked high among the affective variables influencing second/foreign language learning (Dörnyei, 1998, 2001; Gardner, 1985). Throughout the years, several motivation theories on language learning have been proffered, the most widely recognized being the social-educational model, the process-oriented model, the self-determination theory, and the achievement motivation theory (see Dörnyei, 1998, 2001). Distinguishing between integrative and instrumental motivations, the social-educational model (Gardner, 1985; Tremblay & Gardner, 1995) related motivation mainly to such variables as language attitudes, individual differences, learning contexts, self-efficacy, goal salience, attributions and anxiety. The process-oriented approach developed by Dörnyei (1994, 1998, 2001) claimed that L2 motivation construct involved three levels — language level, learner level, and learning situation level, which embraced the need for achievement, self-confidence, language anxiety, self-efficacy, causal attributions, L2 competence and other variables. Advanced by Deci and Ryan (1985, 1995, cited in Dörnyei, 1994), the self-determination

theory maintained that there were broadly three types of motivation: extrinsic and intrinsic motivations and amotivation. The achievement motivation theory proposed that motivation involved three main variables — motive, expectancy and incentive — and addressed motivations toward achievement and away from failure (Atkinson, 1964, 1966).

Adopting concepts from mainstream psychological research, these frameworks have provided guidelines for empirical studies (see, for instance, Gardner & MacIntyre, 1991; Ramage, 1990; Tremblay & Gardner, 1995). It was found that motivation had a direct effect on anxiety, self-efficacy, self-confidence and second language achievement (Ehrman, 1996), that integrative motivation was closely related to persistence, language attrition and retention (Gardner, Moorcroft, & Metford, 1989), and that intrinsic motivation contributed more to achievements in learning a second language (Ramage, 1990). In addition, achievement motivation was revealed to be positively correlated to risk-taking, persistence and competence while negatively correlated to test anxiety (Atkinson & Litwin, 1966; Litwin, 1966). Learners who were not oriented towards achievement were more likely to avoid ability assessment, have lower performance expectations and experience test anxiety (Elliot & McGregor, 1999).

The Need for This Study

As discussed above, anxiety and motivation not only have profound effects on learning but are closely related to each other in second/foreign language acquisition. However, studies involving language achievement, achievement motivation and test anxiety seem to be relatively scant. Furthermore, though research suggests that gender is related to achievement motivation and also makes a difference in test anxiety, the pattern in foreign language learning is hardly known. All these call for further exploration of these issues with regard to the large number of second/foreign language learners in various contexts.

In the light of existing theories, the present study attempted to investigate the relationship among achievement motivation, test anxiety and Chinese non-English major graduate students' English proficiency and English test types. Because many Chinese universities require graduate students to pass an English proficiency test after one year of general English learning before moving on to their academic English study, this

may constitute sources of worry and fear of failure for a considerable number of students. Thus, the present study hypothesized that students' performance in English was related to their achievement motivation and test anxiety and that there might be gender differences in test anxiety and achievement motivation. Therefore, this study attempted to explain the following relationships:

(1) test anxiety, achievement motivation and students' English proficiency;
(2) test anxiety, achievement motivation and test types; and
(3) gender differences in test anxiety and achievement motivation.

Methodology

Participants

The participants of the study were 131 (70 males and 61 females) first-year non-English major graduate students with an age range from 21 to 36 at a university in China. Majoring in different disciplines, these students had been studying English for about 10 years and were therefore expected to have reached a fairly high English proficiency level.

Instruments

State-trait Anxiety Inventory (STAI)

To measure students' anxiety in testing situations, the 20-item STAI A-State scale was used in the present research. This 4-point Likert scale has four alternatives ranked from "Not at all" to "Very much so" with values of 1-4 assigned to each of them respectively.

The Achievement Motive Scale (AMS)

Developed by Gjesme and Nygaard (1970, cited in Sun, 1992) and translated into Chinese by Ye and Hagtvet in 1988 (cited in Sun, 1992). The 30-item AMS covers both positive and negative effects of achievement motivation: the motivation to achieve success is designated as Ms signifying positive effects and the motive to avoid failure is abbreviated as Mf implying anticipation of a negative evaluation. Using a four-point

Likert scale ranging from very true, fairly true, partly true and not at all true with values of 4-1 assigned to each of them, the AMS has 15 items for Ms and Mf each.

English Proficiency Test

To test the participants' English proficiency, a test was specifically designed as a simulated English Qualifying Test for non-English Major graduate students, which took into account such evaluation factors as task content, complexity and difficulty. This proficiency test consisted of six parts arranged from easy to difficult, from objective to subjective in complexity: listening comprehension (15 items, 15 points, 15 minutes); vocabulary (20 items, 10 points, 10 minutes); cloze (15 items, 15 points, 10 minutes); reading comprehension (30 items, 30 points, 45 minutes); translation from Chinese to English and vice versa (2 items, 20 points, 40 minutes); and writing (10 points, 30 minutes).

Procedure

In order to ensure reliability, the self-designed proficiency test was piloted to 65 science and arts students of the same English proficiency level in three other universities before it was finally administered to the subjects a week before the upcoming formal examination. Although it was the third time that the participants were exposed to the same testing situation,[1] they might have still felt nervous because they were told to submit their test papers for teacher evaluation in 150 minutes. Prior to the English test, the Chinese version of the STAI A-State scale was distributed and 101 (54 males and 47 females) valid questionnaires were finally obtained. Three weeks before the test, the same subjects were asked to fill in the Chinese version of the AMS and 108 (58 males and 50 females) of the surveys were considered valid for statistical analysis.

Data Analysis

All the data were processed for chi-squared (X^2) test under Fox-pro 2.5 B version to see if the distribution of one variable (English proficiency) was related to the other two variables (test anxiety and achievement motivation). The result was compared and explained at the 5% significance level.

Results and Discussion

English Proficiency Test

To avoid bias, only the scores of multiple-choice objective measures — vocabulary, cloze and reading comprehension — were used in the present research to examine the relationship among English proficiency, test anxiety and achievement motivation. Listening comprehension, though an objective measure, was not used as it was administered via a tape-recorder with poor acoustic quality and thus lacked both reliability and validity. Thus, the total score for both the pilot test and the present one was 55.

To verify the reliability and difficulty level of the English proficiency test, both the pilot test and the present one were statistically analyzed. The results are presented in Table 1.

Table 1. Results of the English Proficiency Test

	Pilot test		Present test		Pilot test	Present test	Pilot test	Present test
	Mean	*SD*	Mean	*SD*	Range	Range	Mode	Mode
Reading	18.60	3.74	18.30	4.30	16	20	21	18
Vocabulary	5.38	1.99	6.04	1.37	9	6.5	5.5	6
Cloze	9.49	2.17	9.97	2.08	13	12	8	10
Total	33.47	6.53	34.30	5.60	34	24	35.5	37.50

Note: Pilot test — Participants: N = 65; highest score: 46; lowest score: 12; reliability: .68; level of difficulty: .53

Present test — Participants: N = 131; highest score: 44; lowest score: 20; reliability: .79; level of difficulty: .59

Table 1 shows that the test was reliable in that all the important scores in the present test were quite similar to those in the pilot test. And since most of the scores fell into the range from 20 to 44 (mean score ± 2*SD*), the students in this study were not too far apart in terms of the tested proficiency.

Test Anxiety and English Proficiency

When computing the mean score and standard deviation of the STAI A-State for the Chi-Squared test, the researchers reversed the values assigned to the alternatives of the items which expressed the absence of anxiety. For

Table 2. Test Anxiety and English Proficiency

English test / Test anxiety	Pass		Fail		*N* = 101	Gender	
	n	%	*n*	%		Male	Female
Relaxed	7	7.30	4	3.70	11	6	5
Anxious	60	59.70	30	30.30	90	48	42
X^2				4.40*			

*$p < 0.05$; $df = 1$

Note: *n* = number of students; 'pass' and 'fail' refer to students who passed or failed in the test.

example, a value of 1 instead of 4 was assigned to the alternative *Very much so* for the statement *I feel calm*. The results are displayed in Table 2.

Table 2 demonstrates that anxiety was experienced by a considerable number of students in the testing situation, which confirms the findings of previous studies discussed above. Among the students who failed the test, only 4 had felt relaxed or not anxious and 30 had felt anxious. Even among the students who passed the test, only 7 reported being relaxed and 60 had reported being anxious. In addition, statistical results reveal a correlation between test anxiety and English proficiency ($X^2 = 4.40$). According to the chi-squared table, the X^2 value of 4.40 with 1 *df* was greater than the tabulated 5% value 3.84, and thus the correlation was significant. This is somewhat surprising as the test was just a simulated one and was supposed to provoke little or less anxiety. However the results indicate that the students still dreaded the test and feared negative evaluation, as proposed by Horwitz and her colleagues (Horwitz, 2001; Horwitz et al., 1986).

Of the two differentiated components of test anxiety, worry (cognitive concern about the consequences of failure) and emotionality (the affective arousal in the test situation) (Liebert & Morris, 1967), worry appears to be salient in the present study probably because most subjects had experienced failure in the previous exam. Further, their current anxiety was typically accompanied by their worry over failure in this simulated test and especially the worry of potential failure in the upcoming formal examination a week later. This lends further support to the idea that past success/failure experience is an important determinant in producing anxiety in testing situations (Wolf & Smith, 1995; Zeidner, 1998).

One intriguing aspect of the relationship between test anxiety and students' English proficiency is that, though highly anxious, most subjects performed moderately well on the test. It might be plausible to assume that anxiety enhanced students' test performance to a certain degree in the

present study although other factors such as high intelligence and past failures had worked together to contribute to their good performance. However, this needs further exploration. In addition, it might also be due to students' high achievement motivation, which will be discussed in the following paragraphs.

Achievement Motivation and English Proficiency

The responses to the AMS were computed in terms of frequency and percentage, the results of which are presented in Table 3.

Table 3. Achievement Motivation and English Proficiency

Achievement motivation / Test score	Ms High		Ms Mid		Ms Low		Mf High		Mf Mid		Mid Low		Total (*N* = 107)
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Pass	1	1.99	64	61.69	2	3.32	9	7.30	52	54.40	6	5.31	67
Fail	2	1.01	29	31.31	3	1.68	2	3.70	30	27.60	2	2.69	34
X^2			8.27*						6.76*				

*$p < 0.05$; $df = 2$

Note: Ms/Mf high, Ms/Mf mid, Ms/Mf low refer to the subjects who have high, medium and low level of motivation to approach success/ motivation to avoid failure.

As can be seen from the table, both the motivation to approach success (Ms) and the motivation to avoid failure (Mf) yielded statistically significant results. Both of the X^2 values of 8.27 (Ms) and 6.76 (Mf) with 2 *df* exceeded the tabulated 5% value 5.99. This partially corroborates Jegede (1994), who claimed that English language performance could be reliably inferred from students' level of achievement motivation. It indicates that most graduate students in our study considered English learning important and, therefore, were motivated to learn it well.

Table 3 shows that students high in Ms seemed to direct their behavior towards achieving success. They were more likely to be self-confident and favor risks and challenges as well as difficult tasks, and they might also be more willing to display their abilities. In contrast, students high in Mf were more likely to be anxious about failure and might also be more prone to uneasiness, worry and apprehension. It appears that the students' English proficiency was affected by their positive and negative motivations and also varied with test anxiety. As seen in Table 2, most students exhibited a high level of anxiety, yet many of them gained passing scores. The

students' high anxiety along with high achievement motivation and better English test scores may support the notion that individuals high in need of achievement and high in test anxiety are predicted to score better in cognitive tasks (Onwuegbuzie, Bailey, & Daley, 1999).

Test Anxiety, Achievement Motivation and Test Type

In addition to the significant correlation between the two measured variables and the students' English proficiency, both test anxiety and achievement motivation were found to correlate significantly with test types, as shown in Table 4.

Table 4. Test Anxiety, Achievement Motivation and Test Type (X^2)

	Test anxiety	Achievement motivation	
		Ms	Mf
Vocabulary	2.31	1.34	6.65*
Cloze	4.32*	8.42*	5.999*
Reading	1.15	2.69	1.39
df	1	2	

* $p < 0.05$

Among the various objective test types, vocabulary and reading comprehension produced a non-significant X^2 value, suggesting no evidence of any association between test anxiety and these two test types. However, test anxiety was significantly correlated to the cloze test with a X^2 value of 4.32, which supported the findings of some earlier studies (Oh, 1992). The stronger relationship between cloze and test anxiety might result from the complexity and abstractness of the reading material. As Benjamin, McKeachie, Lin, and Hollinges (1981) indicated, highly anxious students had deficits in picking out important points of reading assignments, in information encoding and synthesis which led to poor test performance. Hence, the characteristics of cloze tests, such as information restoration, processing and decoding are more likely to provoke anxiety in students. In such an integrated test as cloze, what is required of examinees is knowledge of vocabulary, grammatical structure, knowledge of cultural background, information-processing ability, reading comprehension and prediction ability as well as inference skills. Consequently, as MacIntyre and Gardner (1994) stated, this "difficulty compounds the effects of

anxiety" (p. 299). Moreover, it is also likely that difficult tasks like cloze tests, which demand more working memory capacity, are more prone to failure and thus more anxiety-provoking to test-takers (Zeidner, 1998).

Similar to the relationship between test anxiety and test types, both Ms and Mf of achievement motivation were significantly related to the cloze test (X^2 = 8.42 and 5.999 respectively), as demonstrated in Table 4. This may indicate that those students who did well in the cloze test had a strong motivation to infer missing information and thus succeeded in figuring out the language segments in the chain of information and constructing a meaningful and coherent discourse. However, it should be pointed out that these students had had repeated failures in cloze tests, so they tended to regard cloze tests as difficult. Yet, this also signifies the interaction of achievement motivation and task difficulty. Namely, the greater the probability of failure there is in a task, the greater incentive value of success in that task (Atkinson, 1966).

In addition, according to Table 4, Mf was also correlated with the vocabulary test (X^2 = 6.65). This might be because some students tried to avoid vocabulary deficits, especially when the deficits had caused problems in comprehension at the sentence level (vocabulary) and at the discourse level (cloze).

Gender Differences in Test Anxiety and Achievement Motivation

As evident in Table 2, 48 male and 42 female students were anxious about the test. However, female students' test anxiety was revealed by the chi-squared test to be significantly correlated to their English proficiency (X^2 = 6.03) while the males' was not statistically significant (X^2 = 3.15), as demonstrated in Table 5. Although this differs from Aida's (1994) study which found no significant gender differences in language anxiety, it is consistent with a bulk of other empirical studies which concluded that female students experienced higher test anxiety than their male counterparts (see Hagtvet, 1985; Wolf & Smith, 1995, for instance).

Table 5. Gender Difference in Test Anxiety and Achievement Motivation (X^2)

	Test anxiety		Achievement motivation			
	Male	Female	Ms male	Ms female	Mf male	Mf female
English proficiency	3.15	6.04*	6.91*	2.90	0.80	6.66*

*p < 0.05; df = 2

Hagtvet (1985) posited that both worry and emotionality affected girls in an evaluative achievement setting while for boys only worry seemed to interfere with their performance. Accordingly, the female students' greater test anxiety in the present study probably resulted from their worry about future failure in the graduate English proficiency exam, sensitivity to evaluative stimuli and fear of being negatively evaluated by the teacher and other students. They probably perceived this informal test more threatening, which caused an increase in arousal, worry, lowered self-esteem and test performance (Zeidner, 1998).

A pronounced difference is also evident in Ms and Mf motivation: male students were significantly higher in Ms ($X^2 = 6.91$) than females, whereas females reported significantly higher Mf ($X^2 = 6.66$) than males. This indicates that, in this study, male students higher in achievement motivation tended to seek success, while females higher in achievement motivation tended to avoid failure. This might support Stein and Bailey's (1973) position that, though both men and women cared about achievement, their concerns occurred in different motivation areas. Men's achievement drive was motivated by an "internalized desire to meet a standard for excellence" (p. 363) while women's incentives for achievement manifested a need to please others or gain social approval (Stein & Bailey, 1973). It seems true that the need for social approval exerted greater influence on female students' achievement strivings whereas competition exercised greater impact on males' in the present study. However, future research should be directed to causal attributions of success and failure in language achievement, especially in an attempt to pinpoint gender differences in perceptions of causal attribution: whether students ascribe their success or failure to lack of ability, task difficulty, lack of effort, or simply bad luck.

Conclusion and Implications

Targeting the relationship among students' English proficiency, test anxiety and achievement motivation, the present research also hopes to provide some pedagogical implications for the teaching and learning of English, especially to and by graduate students, in Mainland China.

First, as discussed above, graduate students' test anxiety was significantly correlated with their English proficiency and was closely related to the cloze test. This was mainly attributed to their worry about potential failure in future examinations and experience of past failure.

Since China's educational system mainly relies on examinations for the purpose of evaluating students, it may need changing, as suggested by the findings. To provoke less psychological and affective drawbacks in students, other forms of evaluation such as portfolios can be integrated into the evaluation system. Meanwhile, efforts should be made to prevent students from experiencing repeated failures in examinations as such occurrences may result in learner helplessness, low self-confidence and even abandonment. In addition, foreign language teachers can help students prepare psychologically for language tests so as to minimize the achievement-impairing effects of anxiety by encouragement and feedback. Simulating test situations may also be helpful. Teachers should familiarize students with test formats and testing situations before real exams so that they do not feel so pressured and anxious. On the part of learners, they should be aware that test anxiety is transitory and be careful not to develop it into part of their trait anxiety.

Moreover, students' English proficiency was found to have a strong relationship with their achievement motivation. Both motivation to approach success (X^2 = 8.27) and motivation to avoid failure (X^2 = 6.76) were statistically significant and both were significantly correlated to the cloze test. Thus, in order to promote students' motivation for success, it is better for language teachers to minimize students' uncertainty about success and thereby enhance their self-confidence. Since both instrumental/integrative and extrinsic/intrinsic motivations are beneficial to second/foreign language learning (Dörnyei, 1994, 2001), Chinese students should be encouraged to learn English for whatever purposes. However, it may be more important to foster students' intrinsic motivation and maintain their sustained effort and commitment in foreign language learning even when the external pressure for achievement in exams is removed.

In conclusion, for the purpose of enhancing students' achievement motivation and alleviating the debilitating effects of language anxiety, it is necessary for language teachers as well as learners to pay more attention to affective factors like self-confidence, self-esteem and language attitudes. It is especially indispensable for female students who may have generally been neglected in comparison with males in Chinese learning contexts. Language teachers should also set appropriate and achievable goals for students so as to discourage students from attributing their failures to intelligence and aptitude, and thereby promote their sense of achievement, self-esteem and self-efficacy, which may finally lead to improved English proficiency.

References

Aida, Y. (1994). Examination of Horwitz, Horwitz, and Cope's construct of foreign language anxiety: The case of students of Japanese. *The Modern Language Journal, 78,* 155–168.

Anderson, S. B., & Sauser, Jr., W. I. (1995). Measurement of test anxiety: An overview. In C. D. Spielberger & P. R. Vagg (Eds.), *Test anxiety theory, assessment, and treatment* (pp. 15–33). London: Taylor & Francis.

Atkinson, J. W. (1964). *An Introduction to motivation*. Princeton, NJ: Van Nostrand.

Atkinson, J. W. (1966). Motivational determinants of risk-taking behavior. In J. W. Atkinson & N. T. Feather (Eds.), *A theory of achievement motivation* (pp. 11–29). New York: John Wiley & Sons, Inc.

Atkinson, J. W., & Litwin, G. H. (1966). Achievement motive and test anxiety conceived as motive to approach success and motive to avoid failure. In J. W. Atkinson & N. T. Feather (Eds.), *A theory of achievement motivation* (pp. 75–91). New York: John Wiley & Sons, Inc.

Benjamin, M., McKeachie, M., Lin, Y. G., & Hollinges, D. (1981). Test anxiety: Deficits in information processing. *Journal of Educational Psychology, 73,* 816–824.

Dörnyei, Z. (1994). Motivation and motivating in the foreign language classroom. *The Modern Language Journal, 78,* 273–274.

Dörnyei, Z. (1998). Motivation in second and foreign language learning. *Language Teaching, 31,* 117–135.

Dörnyei, Z. (2001). New themes and approaches in second language motivation research. *Annual Review of Applied Linguistics, 21,* 43–59.

Ehrman, M. E. (1996). An exploration of adult language learner motivation, self-efficacy, and anxiety. In R. Oxford (Ed.), *Language learning motivation: Pathways to the new century* (pp. 81–103). Honolulu, HI: Second Language Teaching & Curriculum Center, University of Hawai'i at Manoa.

Elliot, A., & McGregor, H. (1999). Test anxiety and hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 76,* 628–644.

Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation.* London: Edward Arnold.

Gardner, R. C., & MacIntyre, P. D. (1991). An instrumental motivation in language study. *Studies in Second Language Acquisition, 13,* 57–72.

Gardner, R. C., Moorcroft, R., & Metford, J. (1989). Second language learning in an immersion program: Factors influencing acquisition and retention. *Journal of Language and Social Psychology, 8,* 287–305.

Hagtvet, K. A. (1985). Sex difference in test anxiety in terms of the worry-emotionality distinction. *School Psychology International, 6,* 195–203.

Hancock, D. R. (2001). Effects of test anxiety and evaluative threat on students' achievement and motivation. *Journal of Educational Research, 94,* 284–290.

Hilleson, M. (1996). I want to talk with them, but I don't want them to hear: An introspective study of second language anxiety in an English-medium school. In K. M. Bailey & D. Nunan (Eds.), *Voices from the language classroom* (pp. 248–282). New York: Cambridge University Press.

Horwitz, K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics, 21,* 112–126.

Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal, 70,* 125–132.

Jegede, J. (1994). Influence of motivation and gender on secondary school students' academic performance in Nigeria. *The Journal of Social Psychology 134,* 695–697.

Liebert, R. M., & Morris, L. W. (1967). Cognitive and emotional components of test anxiety: A distinction and some initial data. *Psychological Reports, 20,* 975–978.

Litwin, G. H. (1966). Achievement motivation, expectancy of success, and risk-taking behavior. In J. W. Atkinson & N. T. Feather (Eds.), *A theory of achievement motivation* (pp. 103–115). New York: John Wiley & Sons, Inc.

MacIntyre, P. D., & Gardner, R. (1991). Methods and results in the study of anxiety and language learning: A review of the literature. *Language Learning, 41,* 85–117.

MacIntyre, P. D., & Gardner, R. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning, 44,* 283–305.

Oh, J. (1992). The effects of L2 reading assessment methods on anxiety level. *TESOL Quarterly, 26,* 172–176.

Onwuegbuzie, A. J., Bailey, P., & Daley, C. E. (1999). Facts associated with foreign language anxiety. *Applied Psycholinguistics, 20,* 217–239.

Oxford, R. (1999). Anxiety and language learner: New insights. In J. Arnold (Ed.), *Affect in language learning* (pp. 260–278). Cambridge, England: Cambridge University Press.

Rachman, S. (1998). *Anxiety*. Hove, East Sussex, UK: Psychology Press.

Ramage, K. (1990). Motivational factors and persistence in foreign language study. *Language Learning, 40,* 189–219.

Saito, Y., Horwitz, E. K., & Garza, T. (1999). Foreign language reading anxiety. *The Modern Language Journal, 83,* 202–218.

Scovel, T. (1978). Effect of affect in foreign language learning: A review of the anxiety research. *Language Learning, 28,* 129–142.

Spielberger, C. D. (1972). Anxiety as an emotional state. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research: Vol. 1* (pp. 3–19). New York: Academic Press.

Stein, A. H., & Bailey, M. M. (1973). The socialization of achievement orientation in females. *Psychological Bulletin, 80*, 345–366.

Sun, Y. M. (1992). *Motivational psychology*. Nanjing: Nanjing Normal University Press.

Tremblay, P. F., & Gardner, R. (1995). Expanding the motivational construct in language learning. *The Modern Language Journal, 79*, 505–518.

Wolf, L. F., & Smith, J. K. (1995). The consequence of consequence: Motivation, anxiety, and test performance. *Applied Measurement in Education, 8*, 227–242.

Young, D. J. (1991). The relationship between anxiety and foreign language oral proficiency ratings. In E. K. Horwitz & D. J. Young (Eds.), *Language anxiety: From theory to classroom implications* (pp. 57–63). Englewood Cliffs, NJ: Prentice-Hall.

Zeidner, M. (1998). *Test anxiety: The state of art*. New York: Plenum Press.

Note

1. The first was a formal and graded exam administered five months earlier and about 90% of the students failed. The second one was given a day before the study.

Mei HAO is a professor at Taiyuan University of Technology in Shanxi, China, and is interested in EFL teaching and learning as well as second language acquisition. She was a visiting scholar at San Francisco State University in 2000–2001.

Meihua LIU, a lecturer at Tsinghua University, China, is currently a Ph.D. student in the English Department at The Chinese University of Hong Kong. She is mainly interested in EFL teaching and learning as well as second language writing in Chinese contexts.

Ruoping HAO is a professor at Taiyuan Teacher's University and the Institute of Measurement and Evaluation in Taiyuan in Shanxi, China. She is now a Ph.D. student in the Psychology Department at Beijing Normal University. She is mainly interested in applied psychology, educational psychology, and psychological counseling.