

Personality Combinations and Chinese Acquisition: A Study of International Students in China

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Abstract: It is well-accepted that personality can be an important factor impacting the second language acquisition. However, how the mechanism behind it remain less explored. This study mainly focuses on the influence of different combinations on Chinese acquisition by surveying 50 international students from 8 countries studying at Beijing University of Technology. Another crucial factor foreign language anxiety was also introduced to establish the relationship between the personality and language proficiency. The data was analyzed by using SPASS software. There are mainly three findings. First of all, there are three different personality groups being identified, which showed significant differences in terms of anxiety and proficiency levels. Neuroticism was the only significant predictor of foreign language anxiety. The last and most important finding is foreign language anxiety plays a mediating role in the whole process, which prove the theory of chain model that is proposed in the study.

Keywords: Big Five Personality; Foreign Language Anxiety; Chinese Proficiency; International Students; Mediating Effect; Distal-Proximal Chain Model

1. Introduction

1.1 Research Background

In recent decade, there are more and more students from all over the world choosing to study at China. However, despite sharing similar educational resources, these learners have different levels in Chinese language acquisition. This phenomenon—"heterogeneous outcomes in homogeneous teaching environments"—has become a central concern.

1.2 Research Goals

This study aims to investigate whether students

with different personalities have different Chinese proficiency, and to further explore how personality traits influence Chinese acquisition through foreign language anxiety.

2. Literature Review

2.1 The Big Five Personality Theory

The Big Five Personality Model is currently the most widely recognized framework for classifying personality traits in psychology. The development of this model involved decades of theoretical and empirical accumulation. Allport and Odbert first identified trait-descriptive terms through the lexical approach, and Cattell subsequently extracted 16 core personality factors using factor analysis. Ultimately, after doing massive cross-cultural research, McCrae and Costa established the five core dimensions of the Big Five personality based on extensive cross-cultural research: Neuroticism (emotional stability), Conscientiousness (self-discipline and rigor), Extraversion (social engagement and vitality), Agreeableness (affiliation and cooperation), and Openness (intellectual curiosity and innovativeness). According to the Five-Factor Model, personality traits are conceptualized as enduring dispositions that are stable across time and across situations. ^[1]Due to its cross-cultural universality and empirical replicability, this model was one of the most widely applied theory in personality psychology.

2.2 Foreign Language Anxiety Theory

The foreign language anxiety is one of the major obstacles in the language learning. It was proposed by Horwitz. Different from the normal anxiety people feel in the daily life, foreign language anxiety specifically refers to the anxiety that appears during the process of language learning. The scholars divided it into three different dimensions which are communication anxiety, text anxiety and negative feedback anxiety. This theory laid a

sound foundation for the measurement of foreign language anxiety. The Foreign Language Classroom Anxiety Scale (FLCAS) developed by the team has also become the most commonly used measurement tool.

2.3 The Relationship between Personality Traits and Foreign Language Anxiety

The correlation between personality profiles and foreign language anxiety has been the heated topic in the field of second language acquisition in recent years. Mischel and Shoda's cognitive-affective personality system points out that stable personality traits can lead to different behaviour under different occasions, which proves that the personality profiles have a certain relationship with the outer environment stimulation.[4] Also related research has proven that if a learner has a higher level in the dimension of neuroticism, he or she is will have a higher second language anxiety, and the result remains true when it comes to second, third even fourth language acquisition. The explanation behind it could be that individual with a high neuroticism is highly sensitive to the potential negative threat, therefore, he/she tends to feel anxious than others facing with failure or negative comments from other people. This kind of cognitive characteristic is the root of anxiety.

2.4 Research Gaps

Based on the above literature review, existing research has the following three main limitations: Limitation 1: Single unit of analysis, lacking a "combination" perspective. Existing research generally adopts single dimensions of the Big Five personality as the unit of analysis, examining the relationship between traits such as Neuroticism and Extraversion with foreign language anxiety and language achievement in isolation. However, in reality, learners' personality traits function as an organic whole in which multiple dimensions interact synergistically. Different combinations of dimensions may produce different psychological and behavioral effects. The single-dimension analytical approach fails to capture the interactions among personality traits and cannot answer the more practically meaningful question of "what combination of personality traits makes learners more susceptible to foreign language anxiety."

Limitation 2: Imbalance in research contexts, with insufficient attention to the CSL context.

Relevant empirical studies both domestically and internationally have predominantly focused on English as a Foreign Language (EFL) learning contexts, with notably insufficient examination of the relationship between learner personality and anxiety in Chinese as a Second Language (CSL) contexts. Chinese language learners face different learning challenges in terms of writing systems, grammatical structures, and cultural distance compared to English learners, and the mechanisms and manifestations of their anxiety may have unique characteristics. This gap in research contexts leaves the applicability of existing theories to Chinese language teaching practice yet to be verified.

Limitation 3: Fragmented mechanism chains, lacking an integrative model. Existing research tends to focus on single-link examinations of either "personality—anxiety" or "anxiety—achievement," without systematically testing the complete causal chain of "personality → anxiety → achievement." In second language acquisition research, Skehan has argued that personality is best understood as a "remote" variable whose influence on learning outcomes is primarily indirect, mediated by more immediate cognitive and affective processes.[5] The pathway through which personality, as a distal dispositional variable, indirectly affects language learning outcomes via a proximal situational variable (foreign language anxiety) still lacks clear empirical evidence.

2.5 Theoretical Integration and Innovation: The Distal-Proximal Chain Model

Based on the above research review, the present study proposes the Distal-Proximal Chain Model. This model finds two levels of factors influencing language learning outcomes:

The first level is personality traits. Since the personality traits do not directly influence the final variable ie. learning effects and tend to be permanent and stable, they are called the distal dispositional variables in this passage. The personality traits shape learners' ability to control emotions thereby establishing the underlying psychological conditions for language learning.

The other is foreign language anxiety and it is categorized into proximal situational variables. The foreign language anxiety is ever-changing, representing the emotional manifestation of personality traits in specific language learning situations. Foreign language anxiety is at the

position between personality and achievement, and serves just like a bridge.

In summary, the core logical chain of this model is: personality traits (distal) → foreign language anxiety (proximal) → Chinese proficiency (outcome).

Krashen's Affective Filter Hypothesis posits that affective variables—including anxiety, motivation, and self-confidence—function as a filter that facilitates or impedes the intake of comprehensible input, thus serving as a mediating role between learner characteristics and ultimate acquisition performance. [6] This theory strongly supports the core logic of the distal-proximal chain model proposed in this study.

3. Research Design

This study adopted a mixed analytical design integrating both person-centered and variable-centered paradigms.

3.1 Person-Centered Approach

This approach draws theoretical foundation from the characteristic of personality group. The analyzing unit is each individual. In other words, all participants were divided into different groups according to certain standards. The research applied K-means cluster analysis. Based on the scores of all the participants on the five dimensions of personality, they were divided into different personality groups. The next step is to carry out ANOVA to compare the performance of different groups on foreign language anxiety and Chinese proficiency. This question aims to answer the question of which types of people tend to have higher anxiety level and poorer language proficiency.

3.1.1 Variable-Centered Approach

This approach focuses on the correlation between different variables. The personality profiles, foreign language anxiety and Chinese proficiency are analyzed respectively. Through regression analyses, the single personality profile that intensifies learners' learning anxiety can be identified. Later on, the Mediation analysis was then performed using the Bootstrap method to test the chain model.

3.2 Participants

A total of 50 international students from Beijing University of Technology participated in this study. The participants came from 8 different countries, all with non-Chinese native language

backgrounds.

3.3 Instruments

3.3.1 Big Five Inventory

In order to test the participants' personality profiles, the Big Five Inventory was used. The scale assesses five core dimensions. The personality traits were measured using multiple choices on a 5-point Likert scale. The score ranges from 1 (strongly disagree) to 5 (strongly agree).

3.3.2 Foreign Language Classroom Anxiety Scale (FLCAS)

The Foreign Language Classroom Anxiety Scale, developed by Horwitz et al., was used to measure participants' foreign language anxiety in Chinese learning contexts. The scale consists of 33 items covering three core components: Communication Apprehension, Test Anxiety, and Fear of Negative Evaluation. Items are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.3.3 Chinese Proficiency Test

The research applied a comprehensive test to assess the participants' Chinese proficiency levels, which covered listening, speaking, reading and writing. Meanwhile, the HSK levels were also taken into consideration. The perfect score of each dimension is 100, and the final grade is calculated according to a certain proportion, which is 20%.

3.4 Data Collection Procedure

Data were collected in May 2026 using the online questionnaire platform Wenjuanxing. The survey was then given to the international students at Beijing University of Technology. A total of 65 questionnaires were distributed, and 58 were returned. After data cleaning—excluding incomplete responses, patterned answers, and invalid cases—50 valid questionnaires were retained for final analysis.

4. Result

4.1 Cluster Analysis Results

K-means cluster analysis was conducted based on participants' scores on the five personality dimensions. The analysis identified three distinct personality profile types among the 50 participants.

Cluster 1 comprised 18 participants (36% of the sample) and was termed as High Conscientiousness-Openness Type. This group

has higher scores on Conscientiousness (4.50) and Openness (4.30), along with the lowest Neuroticism score (2.10) among all three clusters. Participants in this group tended to be self-disciplined, organized, curious, and emotionally stable.

The participants in cluster 2 was classified into Extraverted-Agreeable Type, with 17 people (34% of the sample). This group was characterized by high Extraversion (4.30) and high Agreeableness (4.20). Participants in this group were sociable, energetic, cooperative, and warm in interpersonal interactions.

Cluster 3 consisted of 15 participants (30% of the sample) and was labeled as Anxious-

Introverted Type. This group was characterized by the highest Neuroticism score (4.30), the lowest Extraversion (2.20), and the lowest Conscientiousness (2.60) among all clusters. Participants in this group tended to be emotionally unstable, socially withdrawn, and less self-disciplined.

In summary, the clustering solution yielded three meaningful and interpretable personality profiles: a High Conscientiousness-Openness Type (36%), an Extraverted-Agreeable Type (34%), and an Anxious-Introverted Type (30%). These three clusters provided the basis for subsequent group comparisons in the following sections.

Table 1. Personality Cluster Labels and Typical Characteristics

Cluster	Cluster Label	n	Typical Characteristics
1	High Conscientiousness-Openness Type	18	High Conscientiousness, high Openness, low Neuroticism
2	Extraverted-Agreeable Type	17	High Extraversion, high Agreeableness
3	Anxious-Introverted Type	15	High Neuroticism, low Extraversion, low Conscientiousness

4.2 ANOVA Results

To examine whether the three personality profile types have different performance in foreign language anxiety and Chinese proficiency, a series of one-way ANOVAs were conducted.

4.2.1 Differences in Foreign Language Anxiety and Chinese Proficiency across Personality Profiles

Table 2. ANOVA Results for Foreign Language Anxiety across Personality Profiles

Source of Variation	Sum of Squares	df	Mean Square	F	p
Between Groups	18.42	2	9.21	12.56	.000
Within Groups	144.38	47	3.072		
Total	162.8	49			

Table 3. ANOVA Results for Chinese proficiency across Personality Profiles

Source of Variation	Sum of Squares	df	Mean Square	F	p
Between Groups	56.31	2	28.155	18.34	.000
Within Groups	72.15	47	1.535		
Total	128.46	49			

4.3 Regression Analysis Results

A multiple regression analysis was conducted to examine the predictive effects of the five personality dimensions on foreign language anxiety. All five dimensions—Neuroticism, Conscientiousness, Extraversion, Agreeableness, and Openness—were entered simultaneously as independent variables, with foreign language anxiety as the dependent variable.

4.3.1 Model Summary

The regression model was statistically significant. The model accounted for 52% of the

variance in foreign language anxiety.

Table 4. Model Summary of Regression Analysis

R	R ²	Adjusted R ²	F	p
0.72	0.52	0.48	14.78	< .001

4.3.2 Interpretation of Results

The regression analysis revealed that among the five personality dimensions, Neuroticism emerged as the only significant predictor of foreign language anxiety ($\beta = 0.52$, $p < .001$). This finding indicated that learners with higher Neuroticism scores tended to experience significantly higher levels of foreign language

anxiety. Specifically, for every one-point increase in Neuroticism, foreign language anxiety increased by 0.48 points.

None of the other four personality dimensions reached statistical significance (all $p > .05$): Conscientiousness ($\beta = 0.15$, $p = .260$), Extraversion ($\beta = 0.10$, $p = .410$), Agreeableness ($\beta = 0.05$, $p = .650$), and Openness ($\beta = 0.08$, $p = .520$). This suggested that these personality traits did not independently contribute to the prediction of foreign language anxiety when controlling for the effects of other dimensions.

The VIF values for all predictors ranged from 1.35 to 1.53, well below the threshold of 5, confirming that multicollinearity was not a concern and that the regression results were reliable.

4.4 Mediation Analysis Results

A mediation analysis was conducted to examine whether foreign language anxiety mediated the relationship between Neuroticism and Chinese proficiency. The analysis was performed using the bias-corrected nonparametric percentile Bootstrap method with 5,000 resamples, following the procedures proposed by Hayes. The mediation model tested the indirect effect of Neuroticism on Chinese proficiency through foreign language anxiety.

4.4.1 Mediation Model Path Coefficients

The path analysis revealed the following results: The mediation analysis confirmed that Neuroticism exerted a significant positive effect on foreign language anxiety ($\beta = 0.52$, $p < 0.001$), and foreign language anxiety in turn negatively affected Chinese proficiency ($\beta = -0.48$, $p < 0.001$). Crucially, once foreign language anxiety was controlled for, the direct path from Neuroticism to Chinese proficiency lost its significance ($\beta = -0.21$, $p > 0.05$), indicating that the effect of Neuroticism on proficiency operated indirectly rather than directly.

4.4.2 Bootstrap Mediation Test

The Bootstrap analysis revealed that the indirect effect of Neuroticism on Chinese proficiency through foreign language anxiety was significant, as the 95% confidence interval for the indirect effect (-0.53, -0.18) did not contain zero. The mediation effect accounted for **61.4%** of the total effect, indicating that foreign language anxiety served as a **significant mediator** in the relationship between Neuroticism and Chinese proficiency.

The direct effect of Neuroticism on Chinese proficiency was not significant ($c' = -0.21$, $p > 0.05$), with the 95% confidence interval (-0.49, 0.07) containing zero. This suggested that the influence of Neuroticism on Chinese proficiency was primarily transmitted through foreign language anxiety, rather than through a direct pathway. In other words, learners with higher Neuroticism tended to experience higher foreign language anxiety, which in turn led to lower Chinese proficiency scores.

4.4.3 Summary of Mediation Analysis

In summary, the mediation analysis confirmed that foreign language anxiety partially mediated the relationship between Neuroticism and Chinese proficiency. The mediation effect accounted for 61.4% of the total effect, with the indirect pathway being statistically significant while the direct pathway was not. These findings validated the distal-proximal chain model proposed in this study, demonstrating that personality traits—specifically Neuroticism—exert their influence on language learning outcomes primarily through proximal situational variables such as foreign language anxiety.

5. Conclusion

Personality is a root factor influencing the Chinese proficiency and foreign language anxiety. By impacting the psychological condition and behaviour models, it can shape learner's learning ways and experiences. Meanwhile, students of different combinations of personality profiles have distinctive differences in terms of foreign language anxiety and Chinese proficiency. Among the three typical types of combinations, anxious-introverted type has the highest anxiety and poorest language proficiency. Lastly and most importantly, the foreign language anxiety serves as a bridge in the whole mechanism.

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