

A Preliminary Study on Teaching Korean students Chinese tones: Taking Korean High School Students as an Example

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Abstract: This paper takes the learners who have a one-year experience of learning Chinese in Korean high schools as the investigated and studied sample, concludes the teaching methods of the first, second, third, and fourth Chinese tones, and focuses on the methods of tone teaching.

Keywords: Tone teaching; Zero base; Teaching methods; Classroom teaching

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1 Introduction

1.1 Background of the research

When teaching the zero-based learners, tone teaching can not be ignored in addition to phonetic teaching and the pronunciation teaching of initials and finals. Mr. Lin Tao believes that it is hard for Chinese learners to master the authentic Chinese pronunciation, because the key doesn't lie in the initials and finals, but in the tones and phonetics. "When learning the basic structure of Chinese phonetics, tone teaching is more important and more difficult than teaching initials and finals." (Lin Tao. *Phonetic Research and Teaching a Foreign Language, Chinese*[J]. *World Chinese Teaching*, 1996)^[1]. This article only takes some zero-based Korean high school Chinese learners who have just finished learning Chinese initials and finals as the investigated and studied samples to explore the preliminary teaching of the tones, using only characters and words as the basic teaching materials, without involving changes in

tones as well as the changes of tones in sentences and interactions.

1.2 Main content and innovation of this study

Although there are many studies on phonetic errors in Korean students' Chinese learning, most of the existing researches stand on the perspective of Chinese, that is, using the model of Chinese thinking to solve the problems in learning Chinese. There are also some studies based on the comparative analysis of Chinese and Korean to get the rules in the errors, but a large number of results of language researches show that the level of difficulty when comparing language can not be used as the basis for the difficulty in language acquisition. This study intends to analyze the reasons for Korean students' language errors combined with students' psychosocial analytical bias, and uses computer analytical software for speech in phonetics to analyze Korean students' phonetic errors in detail and proposes some teaching advice. The main contents of this study are as follows. First, collect students' phonetics and analyze the samples. Second, analyze the results according to the level of the difficulty to analyze the errors. Third, apply computer analytical software for speech to analyze the collected voices by acoustic phonograph to know the aspects of students' phonetic errors. Then, apply the relevant theories to analyze the specific causes of the errors through the comparison of language knowledge and culture. And finally, propose some suggestions based on the analyzed.

1.3 Methods for investigation

Many scholars have conducted investigations on the Korean students' phonetic errors in learning Chinese,

and many scholars have analyzed the similarities and differences between the Korean and Chinese through comparative analytical theories. According to the vocabulary division of the HSK outline, the phonetic teaching isn't still quite effective. Based on the Chinese vocabulary syllabus in Korean high school, this paper mainly studies the tones, analyzes the errors in learning Chinese tones for Korean students, and collects 60 phonetic samples from three high ordinary schools for analysis.

1.4 Selection of the investigated samples and formulation of the information

The collection of the information plays a very important part in the study of Korean students' errors in Chinese acquisition, which depends whether this study is practical and valuable. The phonetic samples collected in this article come from 60 Korean high school students from Hansong High School (한솔 고등학교) and Fogu High School (볼곡 고등학교) and Pentang Central High School (분당 중앙고 등) respectively.

Errors	Yin level tone	Yang level tone	Rising and dropping tone	Dropping tone
Occurrence of the tone	1200	1080	1140	1020
Times of errors	310	302	385	243
Total times	600	450	520	500
Error rate	51%	67%	74%	48%

The table above shows that there are errors in the students' four kinds of tones, of which Yang level tone and Falling-dropping tone are the most obvious, followed by Yin level tone and Dropping tone.

Based on the predecessors' teaching of Korean-Chinese phonetics, this paper refers to the scholars' literature and academic achievements in teaching Korean students phonetics. Through statistical analysis and computer acoustic analysis, it collected 60 students from three ordinary high schools. The students' phonetic samples are used as the analyzed samples, followed by computer software to analyze to intuitively grasp the Korean students' tone errors, which provides the basis for the following analysis of word order and teaching ideas only for biased errors.

2 Analysis of Acoustic Samples

To scientifically analyze Korean students' tone errors, this paper uses Praat phonetic analytical software to analyze and visualize the acoustic samples. Computer software is also used to

Among these 60 students, there are 30 boys and 30 girls, all of whom have one-year experience of learning Chinese. The phonetic questionnaire used in this study refers to the Chinese vocabulary syllabus in Korean high school, developed by the Korean Ministry of Education for high school learners based on certain standards. According to the status of high school textbooks, this study selects "tā", "míng", "nǐ", "shì" as the collected sounds.

1.5 Statistical results and analysis

To ensure the scientific nature of the biased error analysis and statistics in this study, the computer speech analytical software mainly analyzes the sounds with less obvious sense for hearing. The number of occurrences in the table below represents the number of occurrences of tones in the voice segment, and the total number is the multiplication of the number of tones and the number of people investigated. The calculation of the error rate in this paper is: error rate = number of errors / total number of occurrences *100%.

generate an intuitive speech chart of the samples and present them on this paper.

2.1 Introduction to Phonetic Software

Praat: doing phonetics by computer, usually referred to as Praat, is a cross professional phonology software with multiple functions, which is mainly used for experiments such as analysis, annotation, processing and synthesis of digitized speech signals, as well as generating various language diagram and text reports^[1]. This paper uses Praat phonetic software to analyze the biased errors in the collected acoustic samples.

2.1.1 Overview of the functions of Praat phonetic software

Praat's main function is to collect, analyze, and label natural acoustic signals, and conduct various processing tasks including transformation and filtering. As a text report and a acoustic graph, this paper only uses the acoustic analytical function of the software. The interface of the acoustic analytical function is shown in Figure 1.

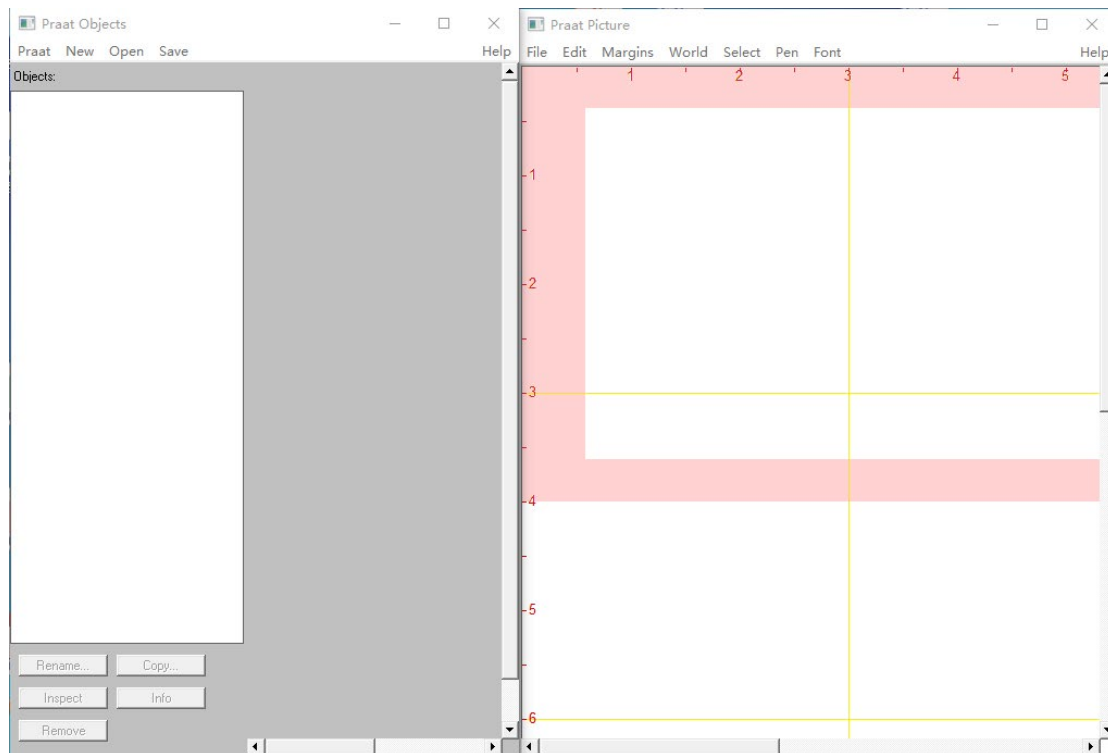


Figure 1. Object Window and Image Window in Praat Phonetic Software

2.1.2 Analytical function of Praat on Phonetics

Praat serves for analysis and annotation of acoustic signals. After recording or reading the audio files in Praat, you can create a variety of language maps, such as spectrogram, spectral slices, pitch contour, formant contour, intensity contour. For example, in the figure 2 below, the vertical axis

is the amplitude and the unit is relative, and the upper part is the acoustic wave. The lower half is the acoustic broad band spectrum, the vertical axis is frequency and the unit is hertz (Hz); and the horizontal axis is time, and the unit is seconds (s). The acoustic figure 2 indicates the strength of energy by the depth of color.

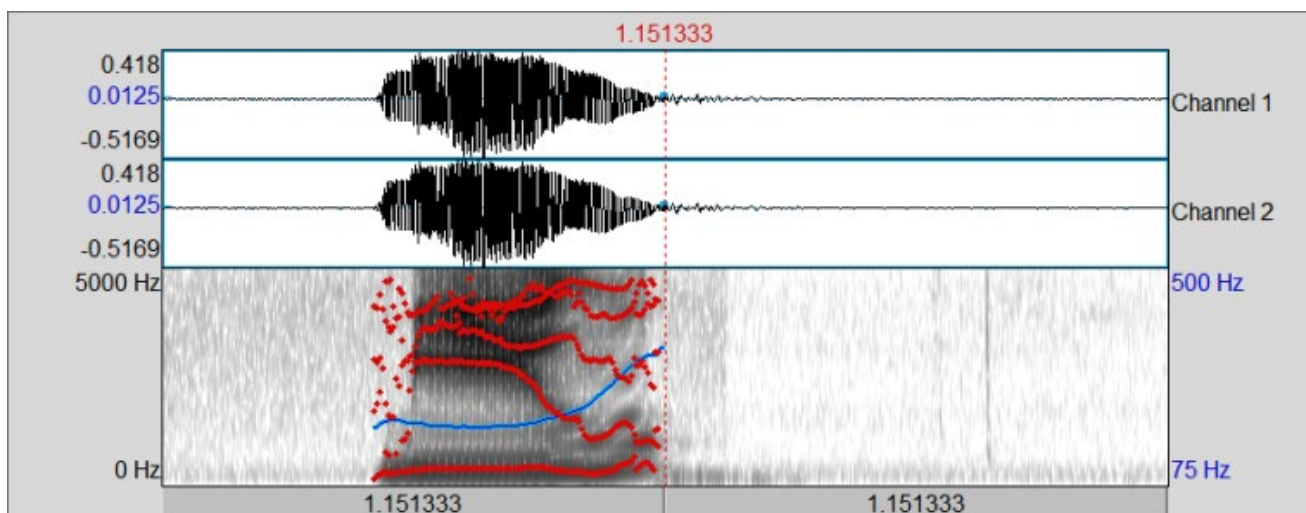


Figure 2. Acoustic wave and acoustic broad band spectrum

Through the analysis by computer software, the details of the acoustic figure will be influenced by

individual differences, but the overall trend of the acoustic figure will not change.

2.2 Description of the phonetic software of Praat

Praat's main function is to collect, analyze, and label natural acoustic signals, and conduct various processing tasks including transformation and filtering. The text report and the acoustic figure can be output not only to the disk file of the personal computer and the display of the terminal, but also to a delicate vector or bitmap. In addition, Praat can also be used to synthesize the speech or sound, statistically analyze linguistic data, assist in acoustic teaching and testing, etc. With the release of the new version, Praat's functions and usages are still increasing, but in fact most users only need to use a certain part of the functions. This paper uses only its analytical function of acoustic figures based on the collected sounds.

2.3 Acoustic analysis on tones by Praat

The tone is mainly determined by the pitch, which can

distinguish the level of the sound and its rise and drop. The pitch is determined by the frequency of intonation in a certain period of time. If the frequency is higher, the sound will be higher. During pronunciation, if the vocal cords are tighter, the number of vibrations will be more in a certain period of time. If the sound is higher, the vocal cords will be tighter. If the number of vibrations is fewer in a certain period of time, the sound will be lower. In the pronunciation, the vocal cords can be adjusted at any time, which causes various pitch changes and forms different tones. Through the analysis of the collected voice samples, this study does an acoustic analysis of the Chinese single syllables. By comparing the standard Mandarin and Yin level tone, Yang level tone, Rising-dropping tone and Dropping tone, Korean students' biased errors are compared and analyzed. The following figure shows Korean students' and Chinese pronunciation of "Ta" (Figure 3a, Figure 3b)

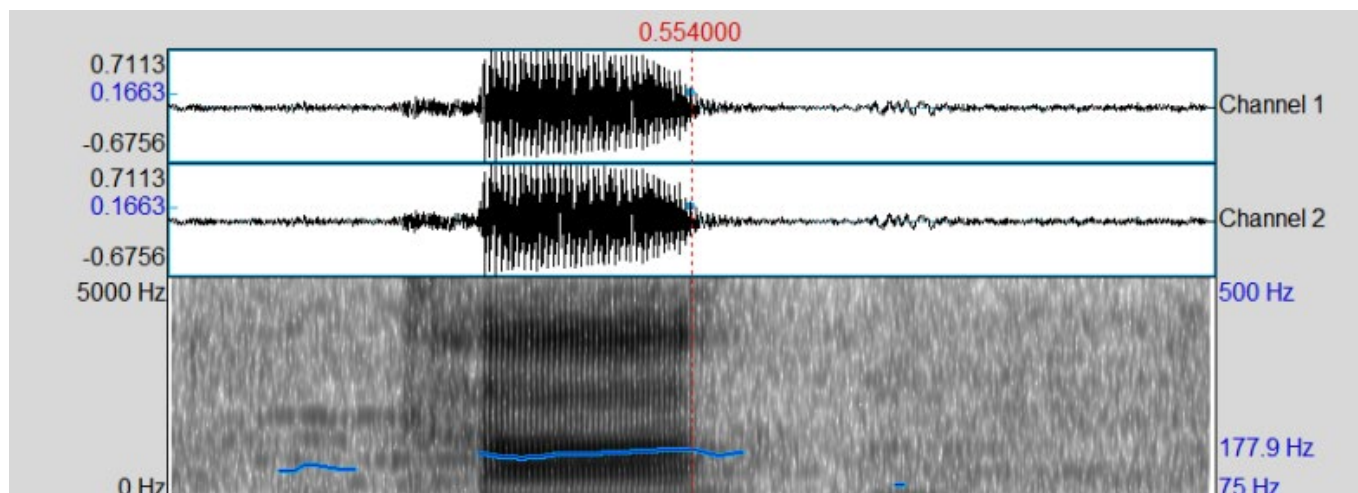


Figure 3a. Korean students' pronunciation of "Ta"

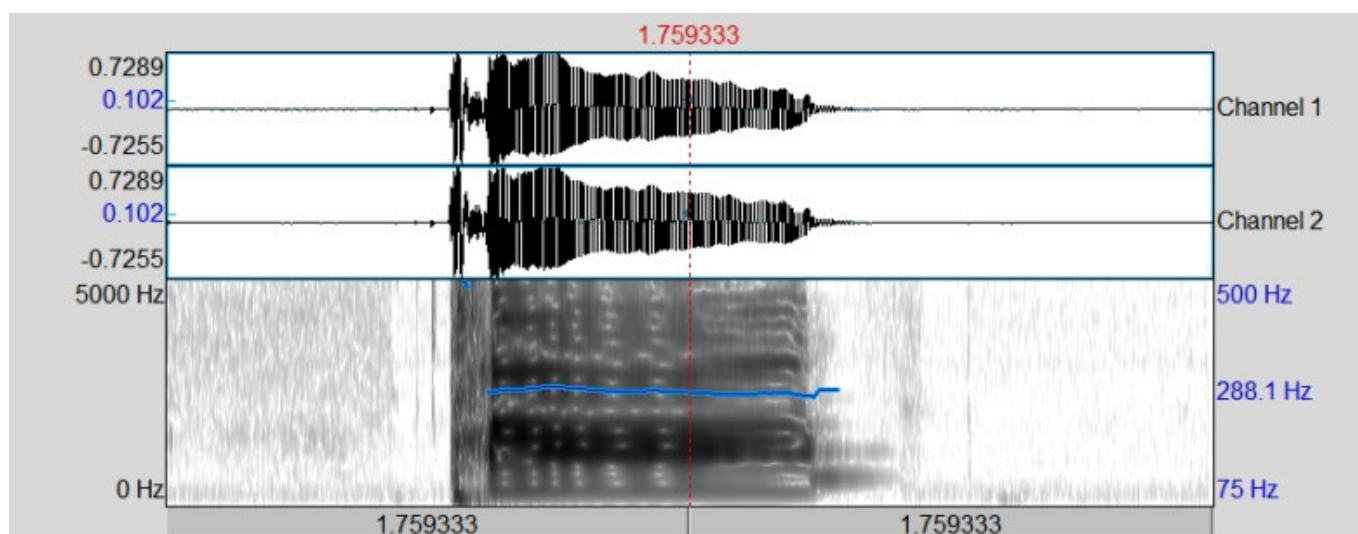


Figure 3b. Chinese pronunciation of "Ta"

The blue line represents the pitch. As can be clearly seen from the two figures above, Koreans' tones are

not high enough, long enough, and generally low. The Chinese tone are generally flat and high (Figure 4a).

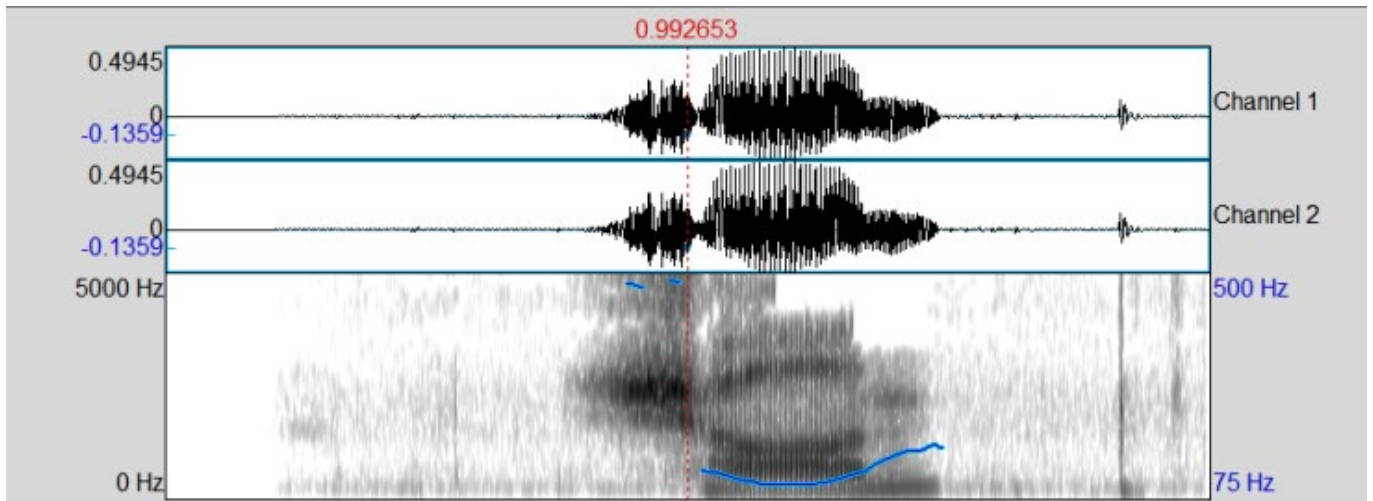


Figure 4a. Korean students' pronunciation of "Ming"

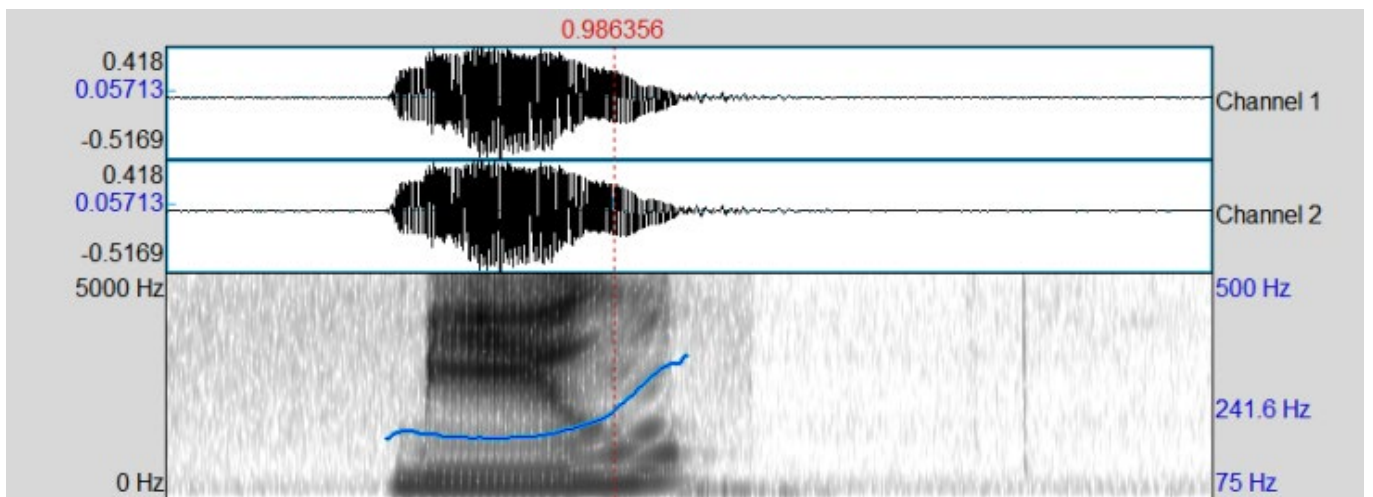


Figure 4b. Chinese pronunciation of "Ming"

As can be seen from the above figure 4b, South Koreans have a low tone with a slight falling trend when they are

pronouncing the Yang level tones. However, Chinese obviously volume up first and then volume down.

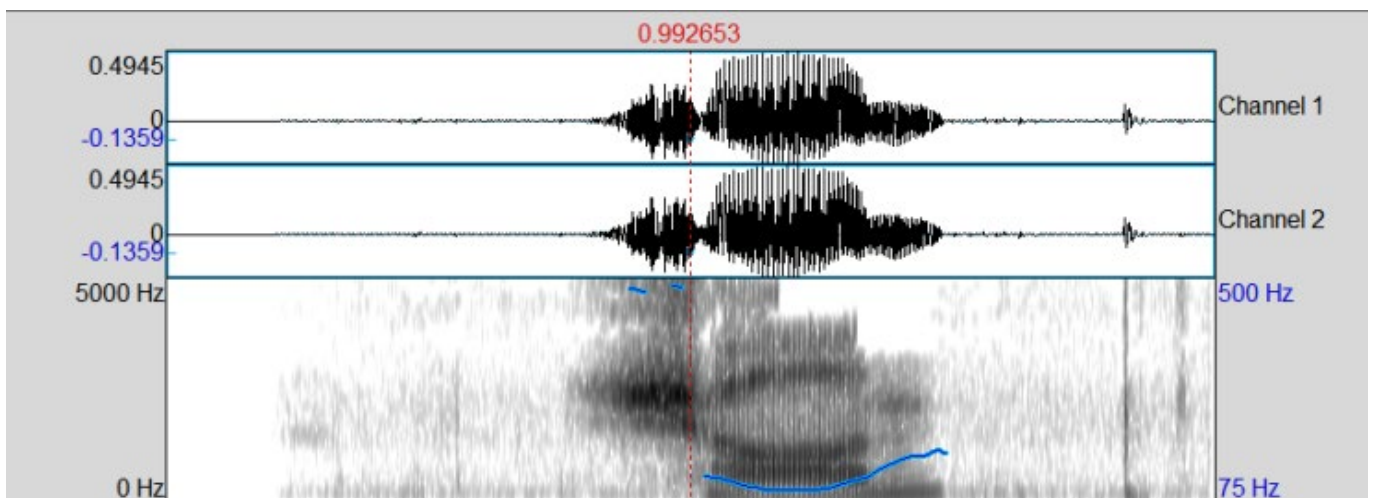


Figure 5a. Korean students' pronunciation of "Ni"

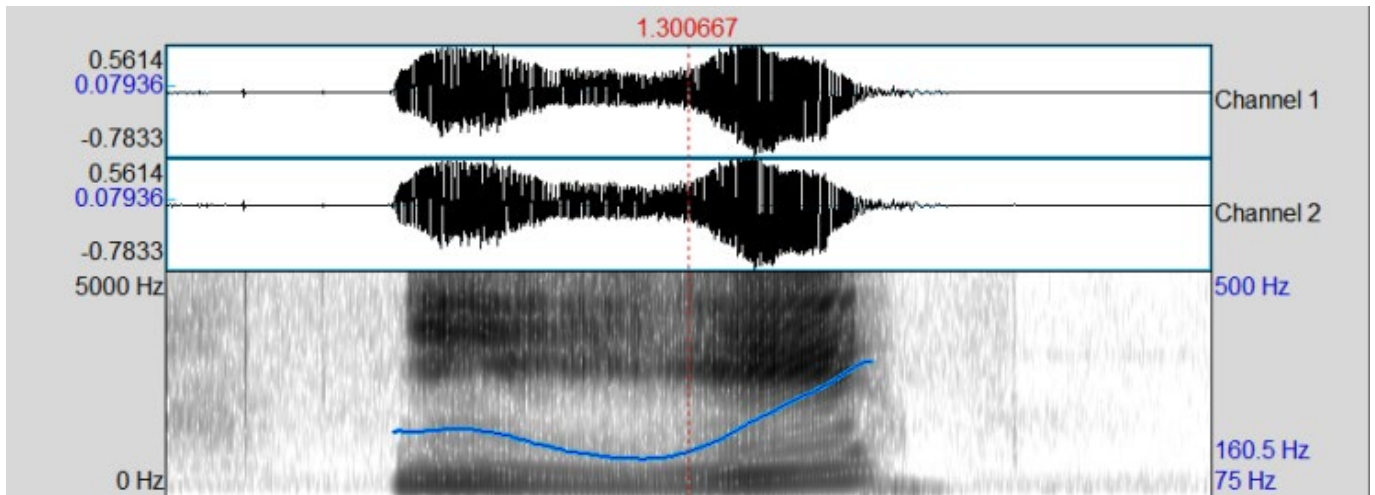


Figure 5b. Chinese pronunciation of “Niu”

Both of them showed a dropping and then rising trend. Figure 5a is generally shorter than figure 5b, and the dropping trend is not obvious.

In Figure 5b, the overall acoustic segment is long, showing a trend of dropping first and then rising.

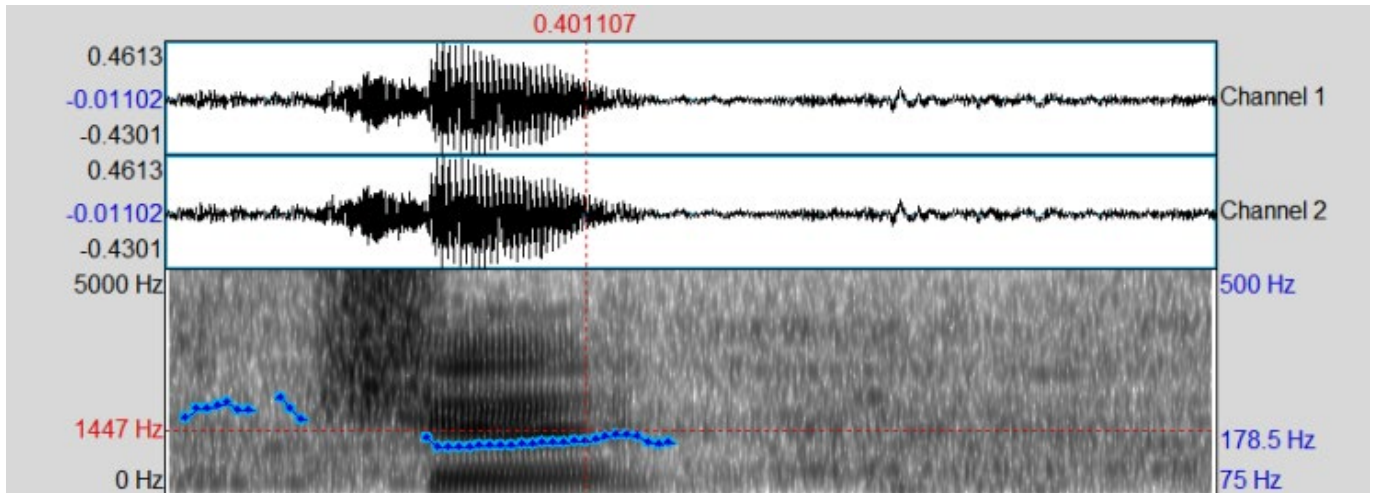


Figure 6a. Korean students' pronunciation of “Shi”

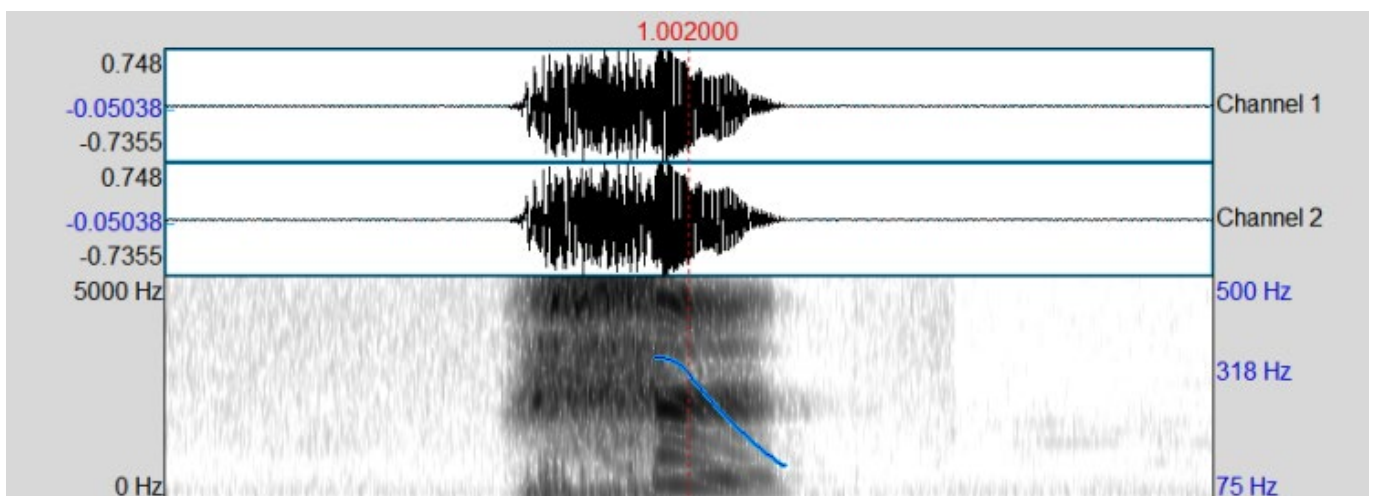


Figure 6b. Chinese pronunciation of “Shi”

Figure 6a and Figure 6b clearly show the difference. Figure 6a shows a smooth straight line with no rising and dropping trends, and Figure 6b is obviously dropping and short.

It can be seen from the linguistic analysis of Yin level tone, Yang level tone, Rising-dropping tone and Dropping tone for Koreans and Chinese. The Korean Yin level tone is relatively low and short; Yang level tone doesn't rise obviously; the rising tone is too stable; and the falling tone is not obvious.

3 Analysis and Teaching Enlightenment on Tone Errors

Phonetic errors are commonly made by learners because they do not understand the phonetic rules of the target language.

3.1 Perspective from the tones

3.1.1 The role of Chinese tones

Tones refer to the inherent sounds in Chinese syllables, which can distinguish the level of sounds and its rise and fall. The role of tones in syllables is to distinguish their meaning. However, it should be noted that the pitch of the tone is relative, and the change of the tone is sliding, not jumping like a music from one musical scale to another.

3.1.2 Five-Degree Contour Tone Marks

Modern Chinese uses the Five-Degree Contour Tone Marks. It is a method that Zhao Yuanren created to describe the relative pitch in a specific and understandable way. It is a method to mark the trend of relative pitch with the five-degree vertical scale, drawing a vertical line as coordinates, being divided into four divisions and five degrees, indicating the relative pitch of the tone, and drawing a short line or point on the left side of the vertical line to reflect the trend of pitch change, reflecting on the format of the pitch change.

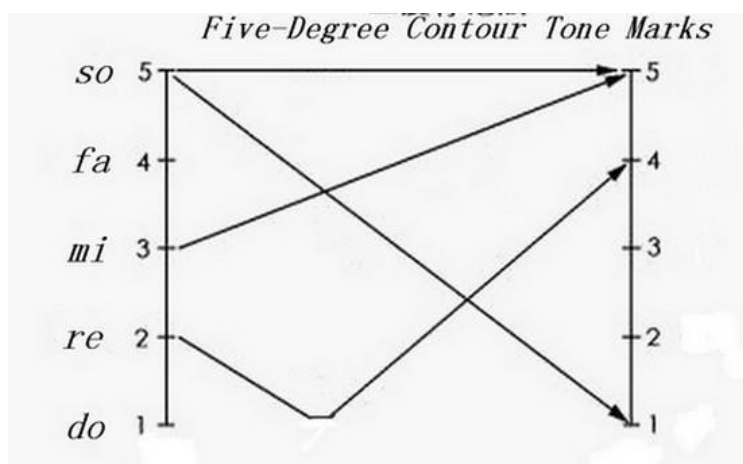


Figure 7. Five-Degree Contour Tone Marks

3.2 Comparison of Chinese phonetics and Korean phonetics

As we all know, Korean is a language without tones. In a specific context, the speaker can add an appropriate tone of cadence, but not in a single new word. How to teach elementary Korean learners better to learn the pronunciation of Chinese tones is the key to this paper.

3.3 Expectations for teaching Korean high school students tones

For zero-based Korean students, they know consciously or unconsciously that there is a tone in Chinese, but how to pronounce it is still unknown to elementary students. This paper uses students' perception of music

and teachers teach the tones through music do ri mi to guide them in learning tones.

3.3.1 Teaching of elementary Chinese tones

This paper integrates the characteristics of Korean students and the Korean pronunciation to conclude the following four aspects, which correspond to the four tones of Yin level tone, Yang level tone, Rising-dropping tone and Dropping tone in Chinese.

- (1) A friend called me: 叫 (55 pitch) (it means the first tone when calling someone)
- (2) So I asked a friend: 喂? (35 pitch) (it means puzzles, and the pronunciation just corresponds to the 35 pitch of Chinese tone)
- (3) A friend said: 啊 (214 pitch) (it means that

the pronunciation tone falls first and then rises, and it corresponds to the 214 pitch of Chinese tone)

(4) I am angry: Huh! 흥 (51 pitch) (this word means “angry”, with the fourth tone, and it corresponds to the falling 51 pitch of Chinese tone)

3.3.2 Ideas for teaching Chinese tones

A friend called me, “Ya” here represents the first Yin level tone. Korean students generally don’t pronounce the first sound highly enough. And the students are told that it corresponds to the music do re mi fa so la si, then the first sound of Chinese tone and the pitch of “so” are used as the standard, which derives the first, second, third and the fourth tones. Teachers should use the Korean word 오ㅏ to guide after pronouncing the high-level tone “Ya”.

For example, in the practice of tone pronunciation, the first tone practice: when teaching “mā”, the teacher should use “ 오ㅏ ” to guide and speak “ 오ㅏ ”, then let the students follow this tone and pronounce the first tone of “Mom”. The teacher repeated the sound of “Ya” through a gesture to draw a highly flat line, so that the learner would follow the teacher’s tone. When pronouncing the word “Shubao”, the teacher should use “Ya, ya”, and continue to draw high-level gestures to guide learners to grasp the pronunciation.

When learning the second sound, the gesture is rising, and pronounces “ 왜 ? ” (which means puzzles), pronouncing “Ya” and continuing to draw out the rising gesture by hand to guide students to pronounce correctly. For another example, when teaching the tone of the word “Hánguórén”, the teacher continues to pronounce three sounds of “e-e-e-e”, and make three movements in the same diagonal rising direction, allowing students to appreciate the pronunciation characteristics of the second sound.

When learning the third tone, considering that Korean students’ error made when pronouncing the third tone, when teaching “ shǒu”, teachers should use the pronunciation of “ 그 냥 ” and the dropping gesture and then rising gesture to guide learners. Then pronounce “ nǐ ” when it is heard, and the teacher continues to say “ 그 냥 ” and continues to use gestures to guide the students to make a tone that drops first and then rises. Of course, the third tone of Chinese is mostly half-top in actual pronunciation, which does not mean that the teaching of the complete third sound should be ignored in teaching tones.

When pronouncing the fourth tone of “dì”, the teacher will say that it starts with a “Ya” and use the dropping

gesture to guide. When teaching the pronunciation of the word “diàn huà”, the teacher will say “Ya” to guide the students to pronounce two fourth tones.

When pronouncing the word “panda”, the teacher starts with “ya” to guide the students to make the second and first tones. When teaching the pronunciation of “dì tú”, he will say “ya” to guide the students to pronounce the fourth and second sound. With this method to practice the pronunciation in the first two lessons, students can basically master the pronunciation of Chinese tones correctly.

When learning how to show the tone, many learners confuse the second sound “ ” with the fourth sound “ ”. Therefore, in the elementary teaching stage, teach students “ — M”, that is, the first sound “ ”, the second “ ” third sound “ ”, the fourth sound “ ”, pronounce like a handwritten “M”, so that students can remember the sequence of the first, second, third and fourth tones.

4 Conclusion

In this paper, through the Praat acoustic software, Korean students’ errors in pronouncing the elementary Chinese tones are studied in depth, and are found through the comparative analysis with Chinese students’ acoustic data. At the same time, the cause of the errors is analyzed through the collected data. Finally, the paper also proposes several practical teaching suggestions for teaching Korean-Chinese phonetics.

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