A Study of Variations in Address Forms in the Tinghu Dialect of Yancheng City

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Abstract: This study explores the variations in address forms within the Tinghu dialect of Yancheng city. The findings reveal that the ways individuals address one another in this region deviate from the established principles of tone sandhi theory. In Chinese phonology, it is generally assumed that individual characters serve as fundamental forms based on their standard pronunciations, with real-time pronunciations adapting to phonetic conditions. However, the study of address forms has not traditionally been integrated into this framework. Observations indicate that a wide range of addressing methods is employed in social interactions, reflecting the complexity of regional cultural traits and social dynamics. This research highlights the distinctive features of address forms in the Tinghu dialect, particularly in terms of tone sandhi, vocative expressions, and indirect address. By examining these unique characteristics, the study enhances our understanding of the principles governing tonal changes in Chinese. Furthermore, it offers valuable insights into the preservation and inheritance of regional dialects.

Keywords: Tone sandhi; Address form; Vocative; Indirect address

1. Introduction

One basic assumption in Chinese phonology is that individual words, based on their pronunciation, form the fundamental forms and make real-time pronunciation according to phonetic conditions.

However, there are also different viewpoints. Observations indicate that the same address forms in dialects show different phonetic forms in different contexts. It was introduced that "In Jiangxi Shanggao dialect, phonetic variations are used to express address forms for family members. The preceding syllable always has a tone change." Thus, we need to learn more about address forms. There are various definitions of address forms, which are generally defined as discourses that draw the listener's attention and convey emotions, often used in the form of noun phrases.

Vocative and indirect addresses are two different ways people use to address others in their daily lives. Vocative refers to the discourse when speaking directly to someone, while indirect address is used when

reporting someone's words. The difference between the two lies in the distance between the speakers, which is the focus of our research in this paper.

The current theory of tone sandhi cannot explain the phonetic variation of the address form, so the study of tone variation of address words is of complementary significance to the current theory. Overall, the study of address forms in the Tinghu District of Yancheng has important theoretical and practical significance. It can promote the current tone sandhi theory and study more about the pronunciation theory based on this research because context is often ignored.

2. Literature review

2.1. Previous studies about tone sandi

Yuen Ren Chao, one of the pioneers in modern Chinese intonation theory, proposed the theory of tone sandhi in his work *Studies in the Modern Wu Dialects*. This theory suggests that "when two or more syllables are combined, the tone of the syllables may differ from their individual pronunciations." In other words, the pronunciation of Chinese is influenced by the preceding and following sounds and it has nothing to do with the context.

Li [1] thought that "most previous studies are confined to inquire into the two issues: (1) there are tough problems with the mode of application; (2) the rule has complicated morphosyntactic and prosodic conditions on its application."

Qin [2] investigated that "entering tone is involved in a phonological alternation with falling tone when it precedes another entering tone."

Gu [3] said "Sandhi is a collective term used for a variety of sound changes that occur in many languages. Sandhi can be either internal, meaning that it occurs within a morpheme, or external, meaning it occurs at word boundaries."

Wu [4] said "Tone sandhi is a common phenomenon of phonetic variation when two or more tones go together in a word or a phrase cross-dialectally in Chinese."

Tone sandhi in longyou tones were studied, and the duration and changes were compared [5].

2.2. Previous studies about phonetic variation

In our country, scholars argued that the tone changes in the dialects of Shandong Province were different. For example, single-tone verbs, adjectives, nouns, and lightly stressed syllables have phonetic variations. For instance, in the sentence "I sweep one house," the verb "sao" changes tone to indicate the meaning of "have swept." The continuous tone and soft voice in Wenzhou dialect introduced that "Dialect research begins with phonetic studies." Scholars said, "As for the research on Chinese dialect change, there is more research on linking change, and relatively few research on grammatical change that represents certain vocabulary and grammatical meaning." A paper [6] studied the formal contexts in English by Trinidadian professionals, "the analysis shows that exonormative influences do not play a role."

The phonetic realizations were analyzed in 21 speakers in previous studies. "Traditional Irish English weakened fricative realization in lexical words" [7]. Speech variation is often viewed as a trade-off between the needs of the listener and the speaker. Edona [8] said that "women played a leading role in innovative variants." Scarborough [9] said that "speech variation is often viewed as a real-time trade-off." Schulte [10] said that "there are differences in vowels in Dublin English."

The basic rules of pronunciation tone in Tokyo Japanese are studied [11], "This paper examines the phonetic

and phonological structure of vocative intonation in Tokyo Japanese." A study [12] talks about "The aim of the present study is to delve further into the topic of tone changes by examining the networked communicative practices of a group of transnational work colleagues." These achievements have an important guiding role in understanding research methods related to phonetics.

2.3. Previous studies about Yancheng dialect

Research on the tones of the Yancheng dialect is conducted, "providing a specific definition of the tones of individual words in Yancheng dialect and demonstrating the influence of Standard Mandarin on the rising tones in Yancheng dialect." The rules of entering tones in Yancheng, Yangzhou, and Nanjing were also studied, providing a paradigm for the entering tone in the Yancheng dialect. The paper studies the pitch and duration of the entering tone on the mono-syllable intonation systems, the pitch, and the duration.

3. Methodology

3.1. Research questions

This study aims to investigate factors that affect the phonetic variation of address forms, which cannot be explained by the theory of tone sandhi. For the same call, such as "mama (mother)," the phonetic condition is constant for both words, so the aim of this paper is to answer the following question: What is the relationship between the address forms in the indirect address context and vocative context, and what factors change their intonation?

3.2. Research subjects

The experimental subjects involved two individuals who have been living in Yancheng. The experimental design consisted of two sets of different distance recordings of address words, each consisting of two subjects (one man and one woman). The male speaker is 22 years old, and the female speaker is 51 years old. Both speakers are capable of speaking the standard Yancheng dialect. The recordings were conducted within a fixed period of time, and four sets of words with different tones were selected for the experiment. The experimental words are "mama (mother)" (even tone), "ye (grandpa)ye (grandpa)" (rising tone, pronounced as "die die" in Yancheng dialect), "nainai (grandma)" (entering tone), and "baba (father)" (falling tone).

3.3. Recording procedure

In the course of the recording, every subject was allowed to finish the whole task from the beginning to the end, each sharing two minutes. The recording was performed using Praat software with a sample rate of 22400Hz. Excel and Praat software were used to observe and analyze speech changes by data of pitch and duration. Step 1: The subjects look at the words and then orally transport the four experimental words with the dialect of Tinghu District. Step 2: The subjects memorize the experimental words "mama (mother)," "yeye (grandpa), read as 'diedie' in the dialect," "nainai (grandma)," and "baba (father)," and speak to the listener face to face. The distance between the speaker and the subject should be constant and the speaker should be calm.

4. Data collection and analysis

4.1. Data processing

The results of the three recordings were saved separately. The effective pitch parts of "ba (dad)," "ma (mother),"

"ye (grandpa)," and "nai (grandma)" were extracted, while avoiding noise, and the corresponding pitch values were recorded at equal time intervals. Praat was used to record the data, separating vowels and consonants in the words and extracting time and corresponding pitch data. The duration was also recorded. The data was then filled into an Excel and a line graph was drawn.

4.2. Pitch data

In individual character addressing, the maximum and minimum pitch values of the "a" sound in the word for male subjects in vocative are equivalent in the indirect addressing context. The pitch range decreases gradually. In the vocative context, the pitch range first decreases slowly and then decreases significantly. The pitch of the "ie" sound in the word "die" is also generally the same. In the indirect addressing context, the pitch range decreases slowly and then decreases significantly. In the vocative context, it first decreases and then increases.

For the "ai" sound in the word "nai," the pitch value in the vocative context is higher than in the indirect addressing context, at 173Hz. In terms of pitch range, in the indirect addressing context, it decreases first, then increases, and then decreases again, while in the vocative context, it increases first and then decreases (**Figures 1** and **2**).

For the "a" sound in the word "ba," the pitch in the vocative context is 171Hz, which is also higher than the indirect addressing context at 150Hz. In terms of pitch range, in the indirect addressing context, it increases first, then decreases, and then increases again, while in the vocative context, it increases (**Figures 1** and **2**).

In the case of female subjects, the pitch of the "a" sound in the word "ma" in the vocative context is lower compared to the indirect addressing context, at 269.52Hz; while the highest value for the back addressing "a" sound is 278.7Hz, and the lowest value is equivalent to the vocative context. In terms of pitch range, both the back addressing and vocative contexts show a decrease (**Figures 3** and **4**).

For the "ai" sound in the word "nai," the pitch in the vocative context is also lower, at 248.8Hz, compared to 261.5Hz in the indirect addressing context. In terms of pitch range, in the indirect addressing context, it decreases slowly, while in the vocative context, it decreases slowly at first and then decreases rapidly (**Figures 3** and **4**).
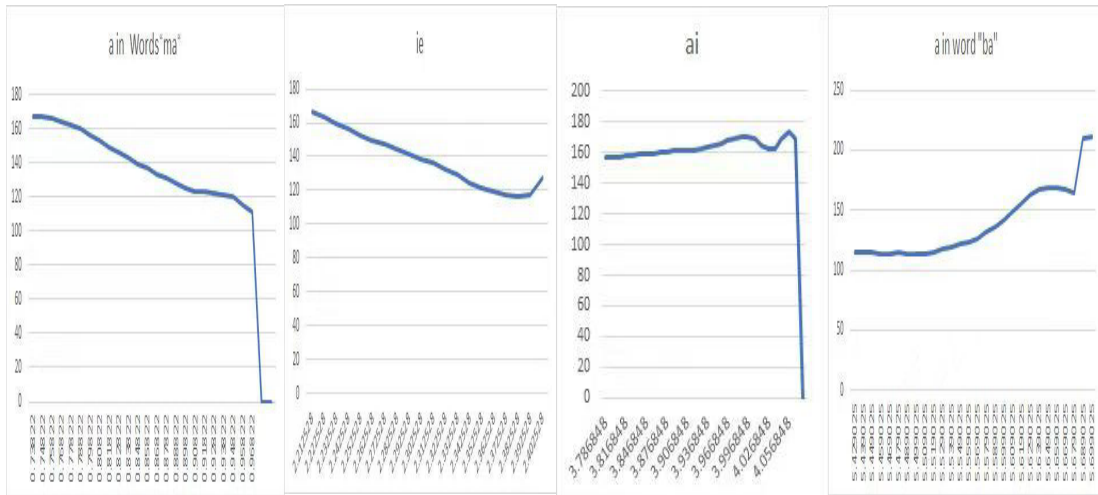

Figure 1. Vowel sounds in indirect address for male

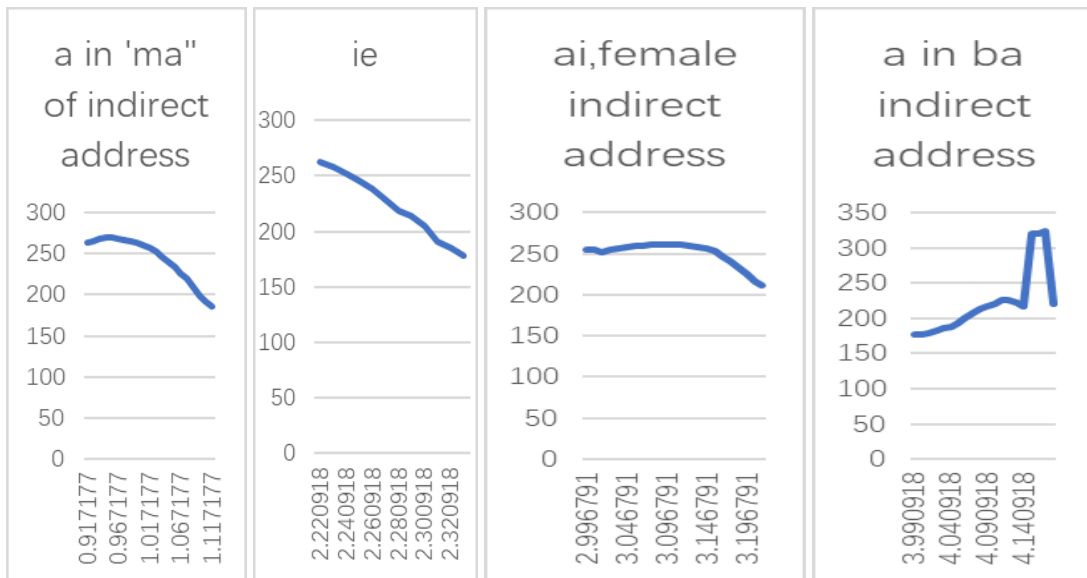**Figure 2.** Vowel sounds in vocative contexts for male

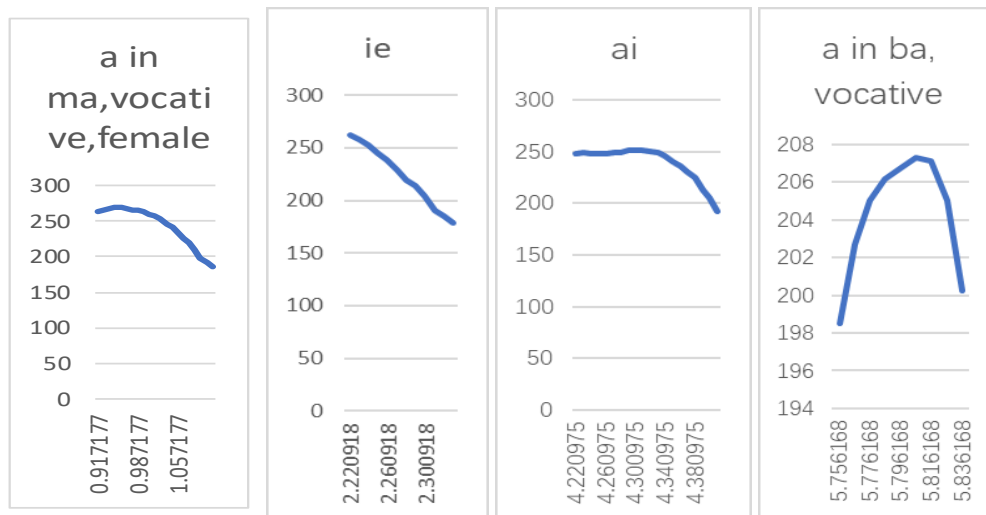**Figure 3.** Vowel sounds in indirect address for female

Figure 4. Vowel sounds in vocative contexts for female

4.3. Results and discussion

For the limitations of sample size and experimental conditions, these conclusions may only apply to the specific circumstances of this study.

In the experiment, the vowel pronunciation varied in different contexts, with varying lengths and difficulty in segmentation, especially when the boundary between vowels and consonants was not clear. Therefore, there may be errors in the data for consonants. The conclusions of this study mainly rely on vowel analysis.

The relationship between vocative and indirect addresses is that people speak with different perspectives, while other elements are the same. When people talk with others face to face, they have a different perspective than in the indirect address. This is because, in the indirect address, the subject is not looking directly at the listener. The relationship between summoning and seeking context is that people speak with different emotions, while other elements are the same. When people talk for seeking, they have a different emotion. This is because, in the seeking context, people get more emotional because they do not know where the listener is.

Based on the data, there is a significant difference in pitch for vowels in different contexts. In the two contexts of the two participants, the pitch difference between seeking and summoning contexts is pronounced. For example, in the seeking context, the highest pitch for the vowel "a" in males reaches 195.1Hz, much higher than the 161.4Hz in the summoning context. On the other hand, in the seeking context, the highest pitch for the vowel "a" in females is 321Hz, lower than the 336Hz in the summoning context. There is a significant pitch variation between the summoning and seeking contexts for both male and female participants, which may be due to the lack of clarification regarding the distance to the imaginary person in the summoning context. As mentioned before, the perspective to the listener is different between indirect address and vocative, and emotions are different in the seeking and summoning contexts.

5. Conclusion

The relationship between vocative and indirect addresses is that people speak with different perspectives, while other elements are the same. When people talk with others face to face, they have a different perspective than in the indirect address. The relationship between summoning and seeking context is that people speak with different emotions, while other elements are the same. When people talk for seeking, they have a different emotion.

Through the above experiment, it is observed that there are differences in pitch and pitch range for individual characters in both vocative and indirect address situations, which contradicts the theory of tone sandhi. Similar observations are made in the contexts of summoning and seeking. Therefore, it can be reasonably inferred that the phonetic variations in terms of addressing and tone sandhi are parallel phenomena, rather than the previously widely believed inclusive relationship. The phonetic changes of address in Yancheng dialect are affected by distance and emotion.

The research on addressing in the Yancheng dialect also has significant academic and social significance. By delving into the linguistic features and social functions of addressing in the Yancheng dialect, we can enrich our understanding of dialects, promoting the inheritance and development of dialectal culture.

Future experiments should expand the number of participants, conduct further research on sociolinguistic factors such as gender, and create a better experimental environment to further eliminate interfering factors.

Disclosure statement

The authors declare no conflict of interest.

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