Tonal Neutralization in Chinese: a Cross-Dialectal Perspective

Lei Liang

Department of Chinese
Nankai University, Tianjin
L.Liang@nankai.edu.cn

Abstract

The general aim of this paper is to elucidate the nature of the tonal neutralization and the relationship between the neutral tone and (weak) stress in Chinese. Although there has been increased recent interest in various prosodic aspects of this language, most of the previous studies mainly focused on the interaction of tone and intonation. Relatively little attention has been paid to stress, especially stress in different dialects. It is hypothesized that a cross-dialectal study of the neutral tone will make us have a better understanding of prosody in general and the interaction between tone and stress.

1. Introduction

1.1. Prosodic systems

As for the typologies of prosodic systems, word-prosodic systems consist of three types, namely, lexical tone (e.g. Chinese), lexical pitch accent (e.g. Japanese) and lexical stress (e.g. English). [1] However, it has long been observed that not all languages fit neatly into this classification. Van der Hulst [2] distinguishes three ways in which phonological tones and accent can interact in the polymelodic systems. It is well known that Chinese is a typical tone language. However, according to my investigation, tonal neutralization is an essential feature of Standard Chinese and of most dialects. More importantly, Chen [3] further argues that at least one dialect of Chinese, notably the New Chongming dialect of the northern Wu dialects, has evolved from a prototypically tonal language to an unmistakably accentual system because of a drastic form of tonal reduction/neutralization. Thus, the following question arises: is Chinese (or some dialects) is one of the (rare) languages that have both stress and tone, i.e. a hybrid word prosodic system?

1.2. The neutral tone and stress

In most Chinese dialects, there exist a number of lexical items that are toneless either inherently or under certain prosodic conditions. Words having neutral tones may be divided into grammatical cases, e.g. [uo35 mən] "I + plural suffix, we", and lexical cases, e.g. [tuŋ55 ɕi] "thing". The neutral tone has been observed to be related to stress. It is generally believed that every stressed syllable in Mandarin has a tone and that when a syllable is weak-stressed or 'unstressed', the tone becomes neutralized. In this way, weak stress, or nonstress, and the neutral tone are tied together. In yet another study, the neutral tone and weak stress are not even distinguished. However, there is still a great deal of controversy concerning what exactly the neutral tone is. And, it is obvious that the neutral tone and stress is related, but what exactly is this relationship? Despite the tremendous progress in Chinese tones research, these questions remain quite unresolved.

In fact there is little thorough typological research on tonal neutralization. Thus, the present paper will study the neutral tone and the related phenomena across Chinese dialects.

2. Hypothesis

My hypothesis is that there is a distinct and strong tendency for Chinese to apply tonal neutralization and for stress to play an increasingly important role in the Chinese phonology. Evidence across dialects is as follows.

2.1. Disyllabicity and grammaticalization

A common conception of Chinese is that most of its words were monosyllabic historically but became disyllabic later. That is, there is a tendency toward disyllabicity in Chinese. It is suggested that the prosodic category of foot in Chinese originates from a phonological change between Old Chinese and Middle Chinese. The dominant metrical structure is a bisyllabic unit [4]. I argue that the origin of disyllabicity in Chinese is the bisyllabic foot and tonal neutralization reflects the unstressed syllable of foot. On the other hand, grammaticalization often involves a concurrent weakening of semantic content and phonetic form. Tonal neutralization or loss is the common prosodic reduction found in Chinese.

It is very interesting that in my data, there are few neutral tones in Cantonese. The reason, I assume, is that the tendency of disyllabicity and grammaticalization in Cantonese is very weak.

2.2. Tonal neutralization

I sampled more than one hundred Chinese dialects from all seven dialect families. My preliminary study suggests that neutral tones and the phenomena associated with them in most dialects, even those dialects of the Mandarin family, are quite complicated and different from those of Beijing Mandarin. In a word, I think that the most important characteristic of the neutral tone is the

neutralization of its original tone. Other features that are drawn from the phenomena based on Beijing Mandarin are not universal. On the basis of this assumption, I argue that the neutral tone has occurred extensively in Chinese and this kind of tonal neutralization process, which varies in manner and degree across dialects, has been active for quite a long time.

Generally speaking, tone sandhi almost invariably, though in varying degrees, brings about tonal neutralization. As a result, the set of sandhi tones is smaller than that of citation tones. There is a strong overall tendency in Chinese dialects to reduce the number of combinatorial possibilities of tonal categories in sandhi contexts [5].

2.3. Tonal neutralization and Nonhead Stress rule

According to Duanmu [6], in Standard Chinese stress in compounds and phrases is determined by Nonhead Stress, which requires the syntactic nonhead to have more stress than the syntactic head. The Nonhead Stress rule is shown in (1).

(1) Non-head Stress (NHS):
In a syntactic head-nonhead relation,
the syntactic nonhead is assigned
greater stress than the syntactic head.

For the present discussion, it suffices to know that in [Modifier-Noun], M is the syntactic nonhead, so it has more stress than N, and that in [Verb-Object], O is the syntactic nonhead, so it has more stress than V. In my data, I do indeed find that neutral tones may only occur in the head positions, i.e. the less/unstressed stress positions, in some dialects. Take Loudi, a dialect of Xiang in Hunan Province. There are five citation tones in Loudi, namely, Tone1 (44), Tone2 (13), Tone3 (42), Tone4 (35) and Tone5 (11) [7]. This dialect features three types of tonal reduction. Two of them, namely, left stressed pattern and right stressed pattern, induce five citation tones to neutralize to two pitch contours. For example (italicized numbers indicate the neutralized tones),

(2) a. [tɕ^{h} iɔ tɕio] 'to drink wine'
13 + 35 >> *33* + 35
[lo y] 'to rain'
35 + 42 >> *33* + 42
b. [ts^{h}e tɤ] 'scissors'
42 + 44 >> 42 + *33*
[liɤ ɣɔŋ] 'building'
13 + 13 >> 13 + *33*

We can see that when the syntactic relationship is [Verb-Object] as in (2a), the tones of left syllables will be neutralized, whereas when the syntactic relationship is [Modifier-Noun] as in (2b), the tones of right syllables will be neutralized.

2.4. Simplification of tonal categories

From a comparative point of view, Mandarin dialects have a small number of tones. Typically, four tones are found in Mandarin dialects, as the Beijing dialect. However, there are some dialects that have only three even two citation tones. More importantly, the tonal categories continue to merge due to tonal neutralization as shown in 2.2, in some dialects.

3. Discussion

According to the four evidence above, we can conclude that there is a distinct and strong tendency for Chinese to apply tonal neutralization and for stress to play an increasingly important role in the Chinese phonology.

4. References

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