

行政院國家科學委員會補助專題計畫研究成果報告

Syllable Contraction in Chinese Dialects: A Typological Study

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計畫主持人：許慧娟

計畫參與人員：葉瑞娟

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一、中文摘要

本計畫的研究焦點在於音節縮減形式理論的分析。在比較鍾榮富(1996)的夾擊模式與筆者的響度說針對台閩語的處理辦法之餘，將觸角擴展到苗栗四縣客語、國語及廣東話。本計畫以類型研究為定位，配合優選理論，從制約互動的角度解釋若干漢語方言的音節縮減現象。

關鍵詞：音節縮減、響度、優選理論、漢語方言

Abstract

This project is focused on the formal analysis of syllable contraction in Chinese dialects. It takes departure from a comparison between Chung's (1996) Edge-in model and the present author's sonority model with respect to Taiwanese Southern Min, and then explores other dialects, such as Miaoli Sixian Hakka, Peking Mandarin, and Cantonese. This study is couched within the framework of Optimality Theory (Prince and Smolensky, 1993), using the notion of constraint interaction to account for various facets of syllable contraction.

Keywords: syllable contraction, sonority, Optimality Theory, constraint interaction

2. Motivation and Goal

Syllable contraction has long attracted the attention of many linguists. For Taiwanese Southern Min, previous research, such as the descriptive model (Cheng, 1985) and the Edge-in model (Chung, 1996), open up a window through which we have a better understanding of what the sub-syllabic morphemes are and how they surface. Yet, major problems as to how the vocoids are associated with the nucleus position remain. Others include the violability of phonotactics and Recoverability (which prohibits the identity between the contracted form and either of the source syllables). The aim of this project is bipartite. On the one hand, we try to tackle the above-mentioned problems in Taiwanese Southern Min. On the other, we extend the scope of the study to other Chinese dialects, and examine various types of syllable contraction.

3. Results and Discussion

A closer inspection of the Edge-in model reveals that it manages to take care of the association of the onset and the coda, and yet leaks in how nucleus contraction proceeds. Instead, the sonority model is proposed to explain syllable contraction in Taiwanese Southern Min. The gist is shown as follows:

- (1) a. Every syllable has an XXX skeleton tier, with the nucleus in the middle (Chung, 1996).

- b. The association of segments and the skeleton tier begins with both edges, affecting onset and consonantal ending alone.
- c. Among the vocoids, the priority of association with the nucleus position is determined by the sonority hierarchy of $a > \text{ } \grave{\text{ }} > e > o > i > u$. If there is a tie, association proceeds from left to right.
- d. The realization of nucleus abides by the order of syllabification (Chung, 1996:122-123), that is, N-placement precedes rising diphthong formation, which is then followed by falling diphthong formation.
- e. On the premise that association lines do not cross and phonotactic constraints function well, maximal linking between the melodies and the skeleton tier is guaranteed to construct the largest possible syllable (Prince, 1985).

Phonotactic constraints function as a filter in syllable contraction, and yet it is sometimes violated. Recoverability is not restrictive in this dialect either.

The sonority model also accounts for syllable contraction in Miaoli Sixian Hakka (Yu, 1984). Just like the case in Taiwanese Southern Min, the output tone in Miaoli Sixian Hakka is composed of the two edge tonemes of the source syllables. Phonotactics is at play, and yet Recoverability is not a strong constraint.

In Peking Mandarin the sonority scale of $a > e > o > i, u \hat{u} > u > \text{ } \grave{\text{ }}$ is proposed to accommodate the data available. As for the

realization of tone, the output basically comes from the source syllable, which the most sonorous vowel belongs to. Again, Phonotactics and Recoverability are both violable.

Moreover, syllable contraction concerning unstressed syllables merits attention. For instance, the contracted form of *wo* 'I' and *mÁn* 'plural marker' is the ill-formed *wom* 'we', which cannot be explained by either the Edge-in model or the sonority model. That *mÁn* bears no stress makes an escape. The relevant rhyme may not be perceived, and thus does not join the contraction. Note that if this case falls within the prediction of the sonority model, the output would be *won*, which is ill-formed either.

By contrast, Cantonese exhibits a distinct picture from the other three dialects. It is assumed that every syllable exhibits a three X-slot template, with the nucleus in the middle. The association between the skeleton tier and the segmental tier begins with both edges (Edge-in). Hence emerge onset and coda in the output. By the same constraint, a vowel at the right edge takes priority to associate with the nucleus position. In other cases, nucleus contraction proceeds according to three guidelines. First, the nucleus with longer duration wins out (Length Competition). Second, if the input nuclei include a low vowel and a mid vowel, a long mid vowel surfaces (Mid Vowel First). Third, a short vowel cannot precede a voiceless stop in the output (No VS). Phonetic measurement (Lee, 1985) indicates that in Cantonese the vowel in VS has the shortest duration as compared with other rime

structures. Syllable contraction requires a lower limit of vowel length. Furthermore, Phonotactics ensures that the output observes co-occurrence restrictions. Recoverability prohibits total identity between the contracted form and either of the source syllables.

Constraint interaction reveals dominance relation. Recoverability is satisfied at the cost of Phonotactics. In addition, the ranking of Edge-in >> Mid Vowel First, Phonotactics >> Length Competition is obtained.

Unlike Cantonese, the other three dialects are characterized by the decision of the priority of association with the nucleus position by sonority. It implies that language variation cannot always appeal to different rankings of universal constraints.

4. Self-evaluation of the Results

The execution of the project basically observes the original schedule. In addition to Taiwanese Southern Min, syllable contraction in Miaoli Sixian Hakka, Peking Mandarin, and Cantonese were also discussed. Recall that Cantonese differs from the other three dialects particularly in nucleus contraction. According to Optimality Theory, language variation results from different rankings of universal constraints. The thing is: vowel

length is phonemic in Cantonese, and this property is shown essential in syllable contraction. On the other hand, sonority plays an important role in three other dialects. How to explain the intrinsic differences among languages poses a challenge to Optimality Theory. From this viewpoint, the results of this project deserve publication in an academic journal.

5. References

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