閩南語的兩條次要變調規律

TWO LOWER-LEVEL TONE SANDHI RULES IN ONE VARIETY OF SOUTH MIN

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1. **INTRODUCTION.** This paper discusses two kinds of exceptions to the South Min tone sandhi rule that has been proposed by Wang (1967). The rule, which we shall call TCR (for Tone Circle Rule), has this form:

$$\begin{bmatrix} \alpha \text{ HIGH} \\ \beta \text{ FALLING} \end{bmatrix} \longrightarrow \begin{bmatrix} \beta \text{ HIGH} \\ -\alpha \text{ FALLING} \end{bmatrix}$$

Although TCR has been proposed for the variety of South Min spoken in Singapore as described by Bodman (1955), it is actually relevant to many varieties of South Min, including the variety considered in this paper, namely, Taiwanese as widely spoken in southern Taiwan. We shall first see how TCR operates, then what are the exceptions, finally how the exceptions can be accounted for by positing two lower-level rules which apply after TCR and which involve exactly the same tone features as it does. In other words, it will be seen that what appear to be exceptions are actually nothing but the indirect results of the general rule, that the two kinds of exceptions actually seem to strengthen, rather than weaken, both TCR and the tone features on which it is based.

2. **TONE SANDHI AND TONE FEATURES.** In South Min, each tone class in the traditional sense [1] is defined by two characteristic pitch shapes. Roughly stated, one (pitch shape 1) occurs phrase-finally, the other (pitch shape 2) elsewhere.[2] Table 1 shows the situation prevailing in much of southern Thiwan, with each tone class labeled by its traditional Chinese name and by the designation we shall use for convenience.[3] From this table, two significant facts can be gathered. First, the alternation between

pitch shape 1 and pitch shape 2 is morphophonemic, not allophonic, because pitch shape 2 of a given tone class is always indentical with pitch shape 1 of some other tone class. Secondly, the alternation, if considered as a change from pitch shape 1 to pitch shape 2, follows a pattern such as shown in Figure 1, which is essentially circular. It is the truly circular part of this pattern (the 'tone circle'), involving exactly four tone classes, that TCR is intended to cover. The point made is that, if we posit tone features such as shown in Table 2, then the tone circle, involving only those tone classes whose pitch shape 1 is +LONG, −RISING, can be represented as something like Figure 2, where we see all the facts that are neatly capsuled in TCR—that each change involves the value of just one featuse, that the changes involve only the two features HIGH and FALLING, and that the value of HIGH after sandhi always agrees with that of FALLING before sandhi.

3. **EXCEPTIONS.** But in Taiwanese as widely spoken in southern Taiwan, and presumably in many other varieties of South Min, there are at least two kinds of exceptions to TCR. They are:

Exception 1. When immediately followed by the diminutive suffix *-á*, instead of exhibiting pitch shape 2 as predicted by TCR, a Class IIIa morpheme exhibits /55/ and a Class IIIb morpheme retains pitch shape 1 (/33/).[4]

Examples:

tiàm-bīn /51-33/ 'store front' *tiàm-á* /55-51/ 'small store'
BUT
tiàm-khâo /51-51/ 'store outside'

hī^{n}-kao /21-55/ 'earring' *hī^{n}-á* /33-51/ 'ear'
BUT
hī^{n}-sâi /21-51/ 'earwax'

Exception 2. In what we may call 'emphatic reduplication', in which an identical monosyllabic adjective (or adverb) occurs three times consecutively, if the morpheme is of Class Ia or Class IIIb,[5] then the first syllable, instead of exhibiting pitch shape 2 as predicted by TCR, exhibits an extraordinary pitch shape representable as either /35/ or /351/, the latter being probably more emphatic. (The pitch shapes exhibited are extraordinary in the sense that neither can be identified with any of the pitch shapes shown

in Table 1.)

Examples:

Class Ia *kim-kim-kim* /35-33-55/ or /351-33-55/ 'very very shiny'
koai-koai-koai /35-33-55/ or /351-33-55/ 'very very obedient'

Class IIIb *gōng-gōng-gōng* /35-21-33/ or /351-21-33/ 'very very stupid'
siān-siān-siān /35-21-33/ or /351-21-33/ 'very very weary'

4. **TWO LOWER-LEVEL RULES.** Apparently one way to treat these exceptions is to treat them as exceptions. That means doing two things. First, we need to add to the contextual restrictions of TCR so that it does not apply to the exceptions. Then, in addition, we need to add the rules required to correctly derive the exceptions. The decrease in generality that TCR would suffer then is obvious, not to mention the difficulty of deriving the extraordinary pitch shapes exhibited in the case of Exception 2. There seems to be less difficulty, however, if we consider the exceptions as derived in the following manner:

Exception 1. The root morpheme has pitch shape 1 changed to pitch shape 2 first via TCR. If pitch shape 2 thus derived is −FALLING, nothing happens. However, if it is +FALLING (i.e. if it is /51/ or /21/), then it comes under the effect of the following rule (Falling-Tone Leveling):

$$[+\text{FALLING}] \longrightarrow [-\text{FALLING}] \;/\; \underline{\quad} \text{-}\acute{a}$$

Thus /51/ (+HIGH, +FALLING) becomes /55/ (+HIGH, −FALLING) and /21/ (−HIGH, +FALLING) becomes /33/ (−HIGH, −FALLING). Hence *tiàm-á* 'small store' is /55-51/ instead of /51-51/, and *hī^{n}-á* 'ear' is /33-51/ instead of /21-51/.

Exception 2. We need to assume that an emphatic reduplication has four syllables in the phonological representation, and that it is shortened to three syllables through Syllable Fusion, which appears needed on independent grounds.[6] Thus pitch shape 1 of the first three syllables is first changed to pitch shape 2 via TCR. No furtner change in pitch shape takes place if

pitch shape 2 is +HIGH (i.e. if it is /55/ or /51/). However, if it is −HIGH (i.e. if it is /33/ or /21/), then the second syllable undergoes the following rule (Low-Tone Raising):

$$[-\text{HIGH}] \longrightarrow \left\{ \begin{bmatrix} +\text{HIGH} \\ -\text{FALLING} \end{bmatrix}, \begin{bmatrix} +\text{HIGH} \\ +\text{FALLING} \end{bmatrix} \right\} / \text{If syllable is 2nd from left in emphatic reduplication}$$

Thus /33/ and /21/ (−HIGH) both become either /55/ (+HIGH, −FALLING) or /51/ (+HIGH, +FALLING). Then Syllable Fusion applies to merge the first two syllables, whether Low-Tone Raising has applied or not. To illustrate, *gōng-gōng-gōng* 'very very stupid' is derived as follows:

/33-33-33-33/	(Phonological Representation)
/21-21-21-33/	(via TCR)
/21-55-21-33/ or /21-51-21-33/	(via Low-Tone Raising)
/35-21-33/ or /351-21-33/	(via Syllable Fusion)

The claim, in short, is that the extraordinary pitch shapes exhibited in the case of Exception 2 is jointly brought about by Low-Tone Raising and Syllable Fusion.

5. **CONCLUSION.** Of the two lower-level tone sandhi rules proposed in this paper, the first, Falling-Tone Leveling, is quite straightforward and there appears to be little problem about it. The second, Low-Tone Raising, is more complicated because it disjunctively applies, and because it has to be supplemented by Syllable Fusion to produce the correct phonetic representation. In particular, the question of whether an emphatic reduplication has four or three syllables in the phonological representation is sure to be debated even if Syllable Fusion is a well motivated rule on independent grounds. Nevertheless, the two additional sandhi rules do take care of the two kinds of exceptions without in any way decreasing the generality of TCR. In fact, they may be said to increase its generality because, in addition to involving exactly the same tone features as TCR does, they both have to apply to the output of TCR and are thus dependent upon TCR.[7] Since these are indeed important facts that can add to the strength of TCR

and the tone features it assumes, they make the proposed rules attractive regardless of the problems the rules may involve.

Table 1 **Tone Classes and Pitch Shapes**

Ia 陰平	II 上	IIIa 陰去	IVa 陰入
55		21	3
33	51	51	5(1)
Ib 陽平	55	**IIIb 陽去**	**IVb 陽入**
13		33	5
33		21	21

Table 2 **Pitch Shapes and Tone Features**

	55	51	21	33	13	3	5
LONG	+	+	+	+	+	−	−
RISING	−	−	−	−	+	−	−
HIGH	+	+	−	−	−	−	+
FALLING	−	+	+	−	−	−	+

Figure 1 **Changes of Pitch Shapes in Tone Sandhi**

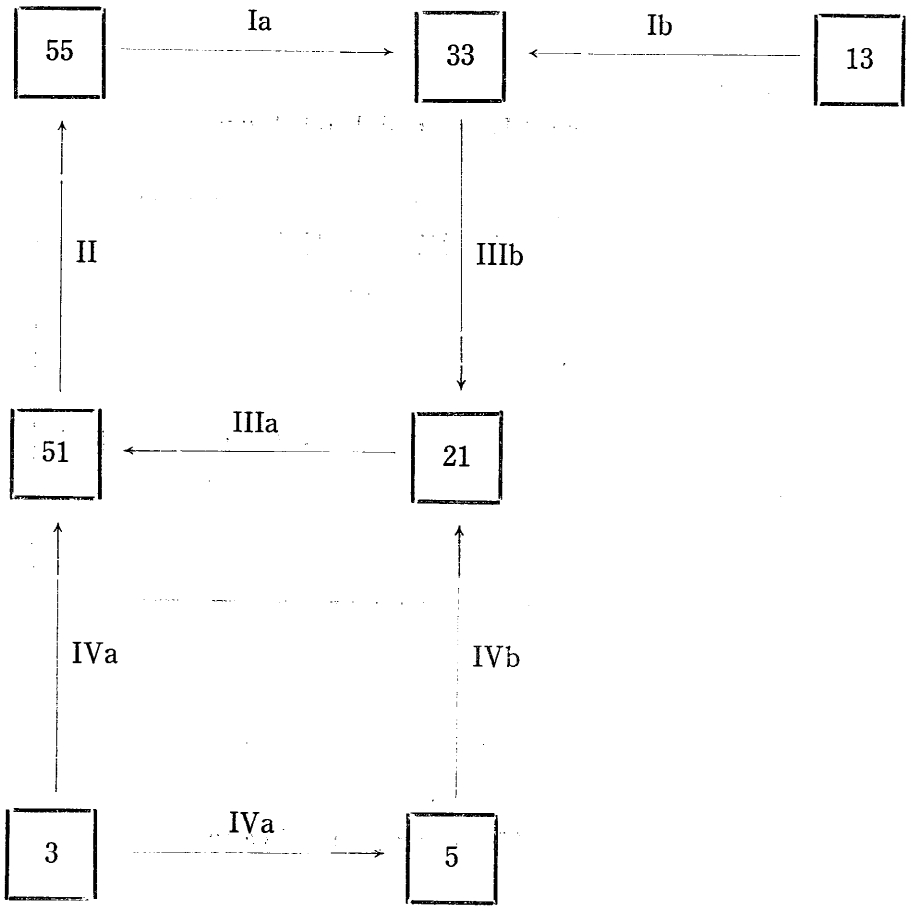
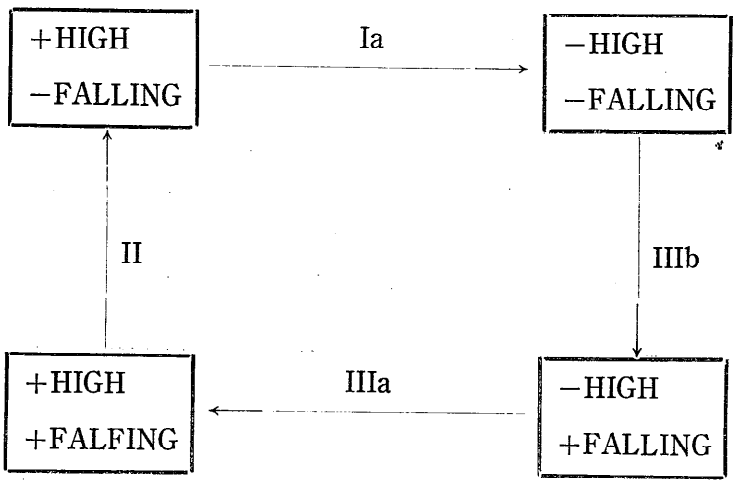


Figure 2 **Changes of Feature Specifications in Tone Circle**



NOTES

1. Which relates morphemes to the four categories of Middle Chinese (ca. 600 A.D.) and their subdivisions.

2. To be more exact, we must say that one occurs 'finally', the other 'elsewhere', in the nonenclitic part of a phrase.

3. In this table, and in the rest of the paper, pitch shapes are represented by numerals corresponding to the 'tone letter' notation proposed by Y. R. Chao (A System of Tone Letters, Le Maitre Phonetique 45.24-7). Of the two pitch shapes given for each tone class, the upper one is pitch shape 1 and the lower one pitch shape 2. The number of digits stands for length, a two-digit pitch shape being longer than a one-digit pitch shape. The notation 5(1) for Class IVa means that it is either /5/ or /51/.

4. Actually the anomaly is observed also in Classes IVa and IVb, which are outside the tone circle.

5. Again the anomaly is observed also in tone classes outside the tone circle, namely, Classes Ib and IVb.

6. Syllable Fusion happens, for example, in *kang-pah* 'to beat someone', which comes from *ka-lang-pah*, in *hong-me* 'to be scolded by someone', which comes from *ho-lang-me*, in *khia-khiai* 'to stand up', which comes from *khia-khi-lai*, etc. In each such case, the pitch shapes of the original syllables are retained but shortened in the newly formed syllable, so tnat sometimes an extraordinary pitch shape results. For example, the pitch shape of *chang* 'yesterday', which comes from *cha-ng* (/33-55/), is /35/.

7. Besides, both rules apply also to pitch shape 2 of Classes Ib, IVa and IVb, which are outside the tone circle but show the anomaly in question, as mentioned in Notes 4 and 5.

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