

## Historical Change of Diminutives in Southern Wu Dialects

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In many languages, diminutives are formed by adding affixes to the roots, while in different Southern Wu dialects, diminutives take various forms such as suffixation, nasal coda attachment, nasalization and purely tonal change. This paper argues that all these diminutive forms are derived from one single derivational process and the tonal change can be explained in terms of the tonal stability in autosegmental phonology from a historical development perspective. Data from different Southern Wu dialects show that all the diminutive forms presented above are actually derived from one historical changing process. This changing process can be explained with autosegmental representations. Also, geographic distribution of dialects may provide insights for the interactions of phonological features in these dialects.

### 0. Introduction

Autosegmental phonology as a non-linear theory is developed on the discussion of tonal languages in Africa (Kenstowicz 1994). The independent behaviors of tones, such as floating tones and contour tones, provide abundant evidence for a non-linear relationship between tones and the tone bearing units (Clements, 1976. Goldsmith 1976; McCarthy, 1981, 1986; Kenstowicz, 1994; Ogden & Local 1994). Take contour tones as an example, they are best explained by the many-to-one relation between tonal features and TBUs. In a linear theory, this type of phenomenon violates the one-to-one relation between a feature and a segment.

Besides African languages, many Asian languages are also tonal. Their systems are seemingly different from the African systems. They have a large inventory of tone levels and a wide distribution of contour tones (Bao 1990; Yip 1990; Chen 2000). Nonetheless, Yip (1980) illustrates many aspects of Asian languages, such as Chinese dialects, providing similar evidence for autosegmental theory. Following her argument, this paper reviews the diminutive tone sandhi in Wu dialects and presents some data in southern Wu dialect, such as Longyou dialect, from an autosegmental perspective<sup>1</sup>.

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<sup>1</sup> The contour tones of Chinese behave differently than those in African languages. Generally, they are believed to act as a unit grouped under a single tonal node. See Kenstowicz (1994:380) and Bao (1990) for discussion.

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In many languages, diminutives are formed by adding affixes to the roots. In different Southern Wu dialects, diminutives take various forms such as suffixation, nasal coda attachment, nasalization and purely tonal change (i.e. Longyou dialect). Looking at the diminutive tonal change in one dialect in isolation, it is hard to find a corresponding relationship between the citation tone and the diminutive tone. The environment that causes the sound change is unclear in the dialect itself. From a different perspective, this change could be viewed as the result of a historical changing process. After analyzing the synchronic data from other Southern Wu dialects, I argue that these different forms of diminutives evolved from historical change, with each form representing one step of the change. Diminutives in Longyou dialect reflect the last step of the change.

### 1. Diminutives in Southern Wu dialects

#### 1.1 Wu dialect

Wu dialect is one of the seven major divisions of the Chinese languages. It is mainly spoken in the Yangtze delta including Zhejiang, Shanghai and Jiangsu provinces. It is also spoken in some smaller areas of adjacent Anhui, Jiangxi and Fujian provinces. The total population of Wu speakers is more than 79 million (2007 consensus). The basic phonological features of Wu dialect are as follows: there are voiced stops, fricatives and affricates in this language, which means it maintains the three-way contrast of Middle Chinese stops consonants and affricates: [t], [t<sup>h</sup>], [d] (Chao 1928). There is only one nasal coda: [ŋ]. And there are normally seven or eight tones. Codas such as -p, -t, -k in Middle Chinese changed to glottal stop in Wu. This dialect can be categorized into six dialect areas (sub dialect groups) based on its geographical distribution and phonological features: Taihu area: southern Jiangsu (Suzhou and Changzhou), Shanghai, northern Zhejiang (Hangzhou, Shaoxing, Ningbo, Huzhou and Jiaxing); Taizhou area Taizhou and Zhejiang; Oujiang area: Wenzhou, Zhejiang; Wuzhou area: Jinhua and Zhejiang; Chu-Qu area: Lishui and Quzhou, Zhejiang and Xuanzhou; Xuancheng and Anhui (Language Atlas of China 1987). The first area has the biggest population and distribution. It's usually called Northern Wu dialect. And the dialects spoken in the rest of the five areas are called Southern Wu dialects. The longyou dialect discussed in this paper belongs to the last subgroup: Chu-Qu area.

#### 1.2 Diminutives

A diminutive form is a derived form that indicates a slight degree of the root meaning, a decrease in size, force, or intensity as compared to the base word, the smallness of the object or quality named, encapsulation, intimacy, or endearment (Aronoff & Funeman 2005: 60). In many languages, diminutives are formed by adding affixes to the roots. This type of suffixation is also a common morphophonological phenomenon in Chinese. For example, the use of morpheme *-er*, meaning 'child' or 'son' is diminutive marker. The exact phonological property of the diminutive suffix varies from dialect to dialect. The diminutive suffix in mandarin is realized as a retroflex feature

on the rhyme (Chao 1968). In other dialects, this suffix may be represented as an independent syllable such as a nasal or a nasalized vowel<sup>2</sup>. In many Southern Wu dialects, the diminutive is marked by the tonal change (also called changed tone), with or without the above mentioned syllabic suffix as the last segment of the syllable. It is named as diminutive tonal change in Cao (2002). The diminutive tonal change is a type of semantic tone change, which uses tone change to achieve a particular semantic goal. This kind of tonal change also appears in monosyllabic words, but originally it comes from the interaction of disyllabic words tone. In some other dialects, the formation of diminutives is no longer a suffixation process. The diminutive meaning is expressed by the juxtaposition of two words, not morphemes. Namely, adding a word *xiao* meaning ‘small, little’ to a noun to denote the diminutive meaning.

## 2. A Review of Literature on Diminutives in Wu dialect

Zhao (1956) brings up the diminutives in Dongyang, a Southern Wu dialect, “In Dongyang dialect, there’s neither rhoticization nor [r] as an independent syllable. All the characters ended with a rhoticized [r] in mandarin are realized as [ŋ], thus producing a nasalized vowel. This kind of phenomenon only occurs at the end of the syllable of a noun with a low register tone” For instance, *tao* ‘peach’ by itself is [dau]. When it’s used in its diminutive sense, it becomes [daun]. The author names it “n-nasalization” and claims that the *-er* ‘son, small’ character in mandarin is realized as a nasal [ŋ]. However, no explanation has been provided on the origin of the nasal coda in Dongyang dialect or the association between the “n-nasalization” in this dialect and the suffix *-er* in mandarin.

Li (1957: 139) in his field work manual discusses a few examples of *-er* (or *-zi* ‘son’) in Wu dialects. In Hangzhou dialect, *-er* is read as an independent syllable [l] and it doesn’t affect the original final. For example, *deng er* ‘a small bench’ is [təŋ<sup>44</sup> l<sup>213</sup>]; *piao geng er* ‘a little spoon’ is [biə<sup>213</sup> kəŋ<sup>44</sup> l<sup>213</sup>]. In Yiwu dialect, the *-er* suffixation is realized by adding a nasal coda [-n] at the end, such as: *ji* ‘chicken’ [tɕi<sup>33</sup>] and *xiao ji er* ‘little chicken’ [sur<sup>42</sup> tɕi:n<sup>33</sup>]; *xie* ‘shoe’ [fi<sup>11</sup>] and *xiao xie er* ‘little shoe’ [sur<sup>42</sup> fi:n<sup>11</sup>]. And there are some words produced with a *-er* suffix in natural speech, such as *bu er* ‘notebook’ [bu:n<sup>35</sup>] and *lu er* ‘deer’ [lo:n<sup>1</sup>]. In Pingyang dialect, *-er* suffixation is realized by either adding an independent syllable [ŋ] or geminating the vowel and adding a [ŋ] coda, plus a tonal change. In addition, in Wenling dialect, the *-er* suffixation is only reflected in the tonal change, in which a level tone changes to a high rising tone [45] and an oblique tone (other than the level tone) changes to a high falling tone [53]. For example: *dao* ‘knife’ [tɔ<sup>33</sup>] changes to *xiao dao er* ‘small knife’ [ɕiə<sup>42</sup> tɔ<sup>45</sup>]. As early as in 1957, Li has noticed that there’s a special tonal change (or tone sandhi) behavior in diminutive forms and their functions are close to those of the *-er* suffixation.

<sup>2</sup> The data will be presented in the following pages. There are also other types of diminutives in Southern Wu dialects, such as a glottal stop or lengthening of vowels as a result of complementary lengthening. See Cao (2002) for more data.

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Yue (1958) believes the nasalized vowel at the end of the syllable in Jinhua dialect reflects the relationship between the nasal [n] in Wu dialect and [r] in mandarin. Zhengzhang (1981) is against this opinion, arguing that the above proposal can't explain the origin of this type of nasalization. Both Yuan (1961) and Fu (1961) support Li (1957)'s argument. Yuan (1961) proposes this term "diminutive tone sandhi" to describe this phenomenon.

Li (1978)'s *Tonal Change in Wenling Dialect* is the first one solely focused on this topic. The diminutive form in Wenling dialect is mainly reflected by a special tonal change. If it's originally a level tone, the tone of the diminutive form becomes [15]. For all other tones, the tone of the diminutive forms becomes [51]. He proposes a new term "changed sound/tone" instead of tone sandhi. He believes that the tone sandhi form is the tonal change that occurs in certain phonological environment, while the changed sound/tone of diminutive form is derivative form of the base form with certain meanings. The tonal categories of the base form can distinguish meaning, but they don't have meanings attached to themselves. The changed sound/tone can not only distinguish meaning, but also holds a meaning such as diminutive meaning to itself. The categories of the base form is a phonological unit, nonetheless, the changed sound/tone is not only a phonological unit, but also a semantic unit. From the semantics perspective, the changed tone in Wenling dialect is the same type of change reflected by *-er* suffixation in Mandarin.

Zhengzhang (1979, 1980, 1981) exhaustively investigates nearly 2,000 diminutive forms in Wenzhou dialect. Out of the 13 tone sandhi types in disyllabic words in this dialect, there are two occurring in the environment where the second character is an *er* 'son' [ŋ<sup>31</sup>]. 1. C type [11 13], when preceded by level tones or some low falling tones/entering tones. I type [235 5], when preceded by entering tones or some high falling/high leveling tones. The I type derives from the C type. 2. F type [42 1]. The tone of the preceding character changes to [42] and the tone of the following *er* changes to [1]. The data shows that the independent tonal categories of the diminutive forms are not associated with other tone sandhi categories. However, he fails to explain where the glottal stop [ʔ] in the preceding character in the I type comes from.

Chen (1992) compares the diminutive tone sandhi between Wu and Min dialects. There are diminutive forms in Wu: [n-nasalization] and [ʔ] glottalization. There are also two similar diminutive forms in Min: nasalized diminutive form and glottalized diminutive form. He tries to find some commonalities cross languages by comparing these forms to those in the Austro-Tai family. He believes that nasalized form comes from the *-er* suffixation:

$$CV(C) + er [\eta je] \longrightarrow CVN(\eta) \longrightarrow C\tilde{V}$$

And the glottalization form comes from a different character *nan* 'little kid' [kian] in Wu and Min dialects:

$$CV(C) + nan [kian] \quad \quad \quad CVK \quad \quad \quad CV?$$

In recent years, there are many comparative studies done on this topic on the diachronic level. Synchronically there are discussions on the origin, formation and development of the diminutive form and its function in phonological change and grammatical/semantic use. Cao (2002) systematically describes the categories, distribution and development of diminutives in Southern Wu dialects. He also proposes a changing process of the diminutive tonal change from *er* as a suffix to purely tonal change, as shown in the later discussion. All in all, most of the above discussions are still descriptions of the existing data and phenomena. It requires phonological analyses to fully explain them.

### 3. Discussion

#### 3.1 Different Forms of Diminutives

Southern Wu Dialects have varied diminutive forms. Below I list five dialects that are geographically close to one another, but with different diminutive forms. The tonal categories are also provided.

##### A. Longyou dialect

Yin (high register)      Yang (low register)

Ping (level)	434	21
Shang (oblique)	55	213
Qu (falling)	52	31
Ru (entering)	5	2

In this dialect, diminutive meanings are expressed by a tonal change plus a word *xiao* with a ‘smallness’ meaning. No matter what the citation tone of the monosyllabic or disyllabic word is, it is changed to one or two uniformed diminutive tone when another word is added to denote the diminutive meaning. And this type of diminutive tone forms a special category of tone in this dialect.<sup>3</sup>

(1). [cia <sup>52</sup> ]+[tei <sup>434</sup> ]	→	[cia <sup>33</sup> tei <sup>45</sup> ] (Cao 2002:143)
小      鸡		小鸡
<i>xiao</i> <i>ji</i>		<i>xiao ji</i>
‘small’ ‘chick’		‘chicken’

<sup>3</sup> In Chinese, tones are represented on a five-step scale, a notation based on Chao (1930). The one to five scale is not a description of phonetic values, but rather as a phonological categorization. Register also plays an important role in Chinese languages. However, I choose not to discuss it because of the limited number of data gathered from this dialect.

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- (2). [ɕia<sup>52</sup>]+[dao<sup>434</sup>] → [ɕia<sup>33</sup> dao<sup>45</sup>]<sup>4</sup>  
 小 桃 小桃  
*xiao tao*  
 ‘small’ ‘peach’ ‘small peach’
- (3). [ɕia<sup>52</sup>]+[mao<sup>434</sup>] → [ɕia<sup>33</sup> mao<sup>45</sup>] (Cao 2002:143)  
 小 猫 小猫  
*xiao mao*  
 ‘small’ ‘cat’ ‘kitty’
- (4). [ɕia<sup>52</sup>]+[dua<sup>434</sup>] → [ɕia<sup>33</sup> dua<sup>45</sup>]  
 小 猪 小猪  
*xiao zhu*  
 ‘small’ ‘pig’ ‘piglet’
- (5). [ɕia<sup>52</sup>]+[nəŋ<sup>21</sup>] → [ɕia<sup>33</sup> nəŋ<sup>213</sup>] (Cao 2002:144)  
 小 人 小人  
*xiao ren*  
 ‘small’ ‘person’ ‘child’
- (6). [ɕia<sup>52</sup>]+[guei<sup>45</sup> dəɤ<sup>21</sup>] → [ɕia<sup>33</sup> guei<sup>21</sup> dəɤ<sup>213</sup>] (Cao 2002:144)  
 小 鬼头 小鬼头  
*xiao guitou*  
 ‘small’ ‘ghost head’ ‘boy’
- (7). [ɕia<sup>52</sup>]+[tu<sup>45</sup> dəɤ<sup>21</sup>] → [ɕia<sup>33</sup> tu<sup>21</sup> dəɤ<sup>213</sup>]  
 小 土豆 小土豆  
*xiao tudou*  
 ‘small’ ‘potato’ ‘small potato’

**B. Yunhe dialect:**

	Yin (high register)	Yang (low register)
Ping (level)	324	423
Shang (oblique)	53	21
Qu (falling)	55	223
Ru (entering)	5	24

<sup>4</sup> The data that are not given references are collected from Jiuqing Du, a native speaker of Longyou dialect.

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- (8) /mao<sup>423</sup> + ji<sup>324</sup>/ → [mao<sup>423</sup>ji<sup>324</sup>] (Cao 2002)
- |            |           |            |           |
|------------|-----------|------------|-----------|
| 猫          | 儿         | 猫          | 儿         |
| <i>mao</i> | <i>er</i> | <i>mao</i> | <i>er</i> |
| ‘cat’      | ‘son’     | ‘kitty’    |           |

**C. Wenzhou dialect:**

	Yin (high register)	Yang (low register)
Ping (level)	33	31
Shang (oblique)	35	24
Qu (falling)	42	11
Ru (entering)	313	212

The following two forms are used interchangeably:

- (9). a. /lə<sup>24</sup> + o<sup>33</sup> + ŋ<sup>31</sup>/ → [lə<sup>53</sup>o<sup>11</sup>ŋ<sup>13</sup>] (Zhengzhang 1981)
- |            |           |           |            |           |           |
|------------|-----------|-----------|------------|-----------|-----------|
| 老          | 鸦         | 儿         | 老          | 鸦         | 儿         |
| <i>lao</i> | <i>wo</i> | <i>er</i> | <i>lao</i> | <i>wo</i> | <i>er</i> |
| ‘old’      | ‘crow’    | ‘son’     | ‘old man’  |           |           |

- b. /lə<sup>24</sup> + o<sup>33</sup> ŋ<sup>31</sup>/ → [lə<sup>53</sup>oŋ<sup>313</sup>]
- |            |             |            |             |
|------------|-------------|------------|-------------|
| 老          | 翁           | 老          | 翁           |
| <i>lao</i> | <i>wong</i> | <i>lao</i> | <i>wong</i> |
| old’       | ‘man’       | ‘old man’  |             |

**D. Yiwu dialect:**

	Yin (high register)	Yang (low register)
Ping (level)	33	213
Shang (oblique)	53	31
Qu (falling)	55	13
Ru (entering)	1A	1B

- (10). /tei<sup>3</sup> + n<sup>3</sup>/ → [tein<sup>33</sup>] (Chao 1956)
- |           |           |           |           |
|-----------|-----------|-----------|-----------|
| 鸡         | 儿         | 鸡         | 儿         |
| <i>ji</i> | <i>er</i> | <i>ji</i> | <i>er</i> |
| ‘chicken’ | ‘son’     | ‘chick’   |           |

**E. Jinhua dialect:**

	Yin (high register)	Yang (low register)
Ping (level)	334	213
Shang (oblique)	535	312
Qu (falling)	55	14

Ru (entering) 4 2

Older speakers use this form:

(11). a. [kux-uəŋ<sup>334</sup>] (Cao 2002)

歌 儿  
*ge er*  
 ‘song’

Younger speakers use the following form:

b. [kux-uẽ<sup>334</sup>]

歌 儿  
*ge er*  
 ‘song’

### 3.2 An autosegmental analysis of the changing process of the 儿 *-er* morpheme

Tracing the diminutive form back to its origin, I find the *er* ‘son’ morpheme<sup>5</sup> is the original source of the diminutive form. According to Zhengzhang (1981), the morpheme *er* in Chinese took on a diminutive meaning in as early as the third century. At first, it only referred to a baby animal. Later, it developed to be a suffix with a broad denotation of ‘smallness’. Some Southern Wu dialects still bear such kind of evidence. For instance, the *-er* in Jinyun dialect can only be added to a noun indicating human or animal, indicating a ‘baby’ meaning (Cao 2002:149).

#### F. Jinyun dialect:

	Yin (high register)	Yang (low register)
Ping (level)	334	213
Shang (oblique)	53	31
Qu (falling)	554	213
Ru (entering)	423	35

(8) /a<sup>50</sup>/ + /ni324/ → [a<sup>50</sup>ni324]  
 鸭 儿                      鸭儿  
*ya er*                      *ya'er*  
 ‘duck’ ‘son’              ‘baby duck’

When the *er* morpheme functions more and more like a special diminutive suffix, it starts to change from a content word to a function morpheme, thus affecting its

<sup>5</sup> Chinese is not an inflectional language. Morphemes and words are not distinctively separated in Chinese. Most of the morphemes function as single words.

phonological stability. Because *er* in Southern Wu dialects is usually pronounced as [ni], [nie], [ni] or other nasal syllables, it naturally becomes a nasal coda and attaches to the previous syllable, if the previous syllable doesn't have a nasal coda itself. More evidence can be found in Wenzhou dialect. According to Zhengzhang (1981:41), some words in Wenzhou dialect have two diminutive forms, one is with the *-er* suffixation, the other is with a nasal coda:

- (10)=(4). [lə<sup>53</sup>o<sup>11</sup>ŋ<sup>13</sup>] == [lə<sup>53</sup>oŋ<sup>313</sup>] (Zhengzhang 1981)
- |           |           |
|-----------|-----------|
| 老鸦儿       | 老翁        |
| lao wo er | lao wong  |
| ‘old man’ | ‘old man’ |

In Southern Wu dialects, nasal codas are in the process of losing their nasal features and nasalizing the vowels. In Jinhua dialect, it's common to have alternations between nasalized vowels and vowels with nasal codas:

- (11). kuŋ-uəŋ<sup>334</sup> === kuŋ-ue<sup>334</sup> (Cao 2002:150)
- |        |        |
|--------|--------|
| 歌儿     | 歌      |
| ge er  | ge     |
| ‘song’ | ‘song’ |

In a later process of the development, the nasal feature is completely lost, but its tone is kept and becomes a floating tone. Because *er* itself in Southern Wu dialects is often a high tone<sup>6</sup>, the high feature is left floating when the segment carrying this tone is deleted. It then re-associates to the closest segment and changes the tone of that segment. That explains why the falling tones in Longyou dialect change to a rising tone. And the falling tone of *xiao* ‘small’ is in turn affected and assimilates to the adjacent tone. It becomes a mid-high even tone.

### 4.3 An example in Longyou dialect: purely tonal change

- (12) /eia<sup>52</sup> + dao<sup>434</sup> + ni<sup>5</sup>/ > [eia<sup>33</sup> dao<sup>45</sup>]
- |             |            |           |   |                 |
|-------------|------------|-----------|---|-----------------|
| 小           | 桃          | 儿         | > | 小桃              |
| <i>xiao</i> | <i>tao</i> | <i>er</i> |   | <i>xiao tao</i> |
| ‘small’     | ‘peach’    | ‘son’     |   | ‘small peach’   |

The changing process:

- I. /dao<sup>434</sup> + ni<sup>5</sup>/ > /dao<sup>434</sup> + ni<sup>5</sup>/ >
- |   |   |   |   |
|---|---|---|---|
| 桃 | 儿 | 桃 | 儿 |
|---|---|---|---|

<sup>6</sup> The high tone contour for the morpheme *er* varies across the Southern Wu dialects. For illustration purpose, I just define it as a high tone contour and use one case in Longyou dialect to exemplify the process.

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<i>tao</i>	<i>er</i>	<i>tao</i>	<i>er</i>
‘peach’	‘son’	‘little	peach’

/dao<sup>434</sup> + n<sup>5</sup>/ > /dao<sup>434</sup> + [+nas] + <sup>5</sup>/ > [dao<sup>45</sup>]

桃	儿	桃	儿	桃儿
<i>tao</i> ’r		<i>tao</i> ’r		<i>tao</i> ’r
‘little peach’		‘little peach’		‘little peach’

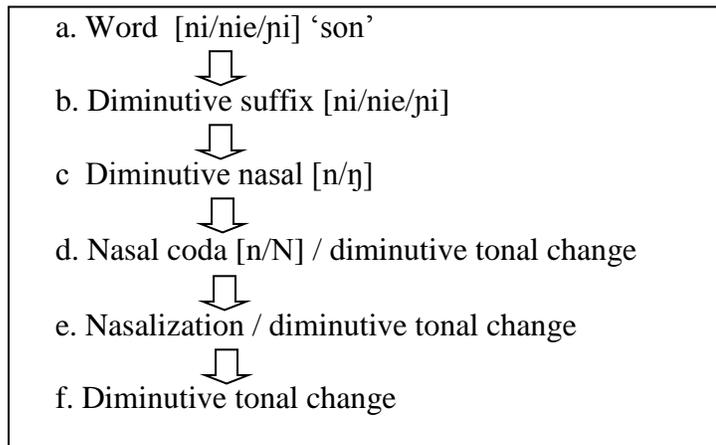
II. / $\epsilon$ ia<sup>52</sup> + dao<sup>45</sup> /  $\longrightarrow$  [ $\epsilon$ ia<sup>33</sup> dao<sup>45</sup>]

小	桃儿	小桃儿
<i>xiao</i>	<i>tao</i> ’r	<i>xiao tao</i> ’r
‘small’	‘little peach’	‘little peach’

Diminutive meanings are then realized by a tonal change plus a preceding word *xiao* ‘small’. Many other Southern Wu dialects share the same high even or high rising diminutive tone (Cao 2002: 158). It shows that a high tone is the main feature of the diminutive tonal change in Southern Wu dialects. Once this tone is formed, it becomes a semantic unit that carries the diminutive meaning. The tone itself is widely used to express the diminutive. In this step, no suffixation is necessary.

### 4. Conclusion

In summary, the changing process of the diminutive tonal change in Southern Wu dialect can be drawn as follows:



The diminutive tonal change in Longyou dialect itself presents no corresponding relationship between the citation tone and the diminutive tone. It is hard to decide which word/morpheme is the trigger of the sound change and why both of them change. Arbitrary rules cannot explain the motivation for this type of change.

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From looking at similar diminutives in other Southern Wu dialects, I find that they are closely related. All the diminutive forms presented above are actually derived from one historical changing process. The diminutive forms found in Longyou dialect can be seen as an evidence of one of the last steps of the change, in which the tonal change is triggered by a specific local tonal context that creates a floating tone, reattaches it to the base form and changes the citation tone to a diminutive tone. Thus, from a different perspective, this changing process can be explained with autosegmental representations. Also, geographic distribution of dialects may provide insights for the interactions of phonological features in these dialects.

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