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The Geographic Distribution of the Diminutives in Yuebei Tuhua: A Compromise of the Conflict between Two Forces of Diminutive Formation in Southeastern Chinese Dialects*

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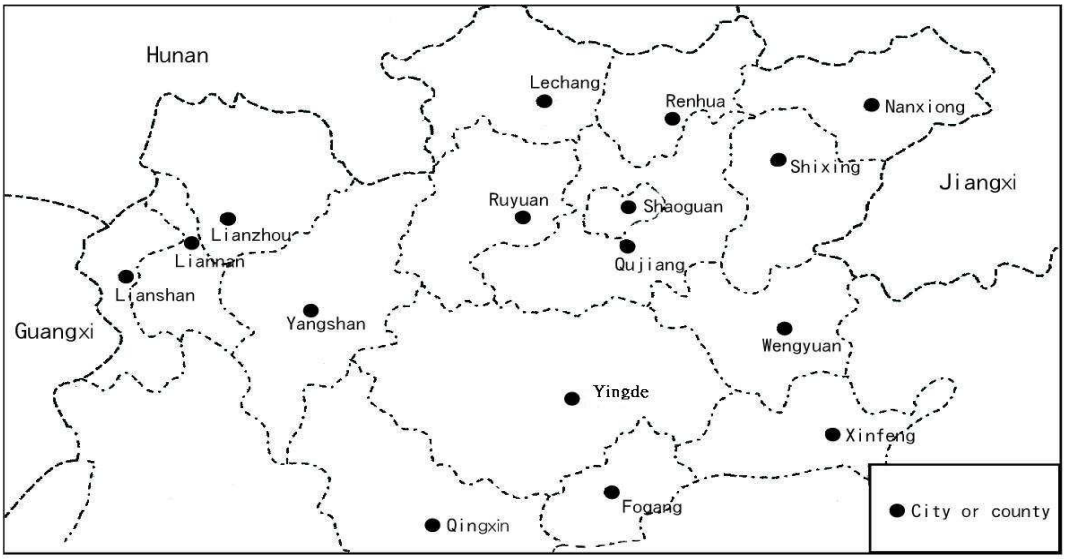
A great body of related literature has been devoted to the diminutives in Yuebei Tuhua (YBTH). Yet, little attention is directed to the fact that, in YBTH diminutives, there is a one-to-one correspondence between the temporal order and the geographic distribution. For this reason, this study aims to explore such a correspondence in terms of socio-historical and linguistic factors. It is argued that, besides the areal immigration and development in northern Guangdong, the temporal-geographic correspondence results mainly from a linguistic conflict between two forces of diminutive formation in southeastern Chinese dialects, and the geographic distribution of YBTH diminutives represents a compromise of this conflict.

Keywords: diminutive, geographic distribution, Yuebei Tuhua, Min, Yue, Hakka

1. Introduction to Yuebei and Yuebei Tuhua

Yuebei refers to northern Guangdong, a wide region adjacent to Jiangxi Province, Hunan Province and Guangxi Province. Nowadays, this area consists of sixteen cities or counties (Zhuang 2004), as geographically shown in (1).

(1) An overview of northern Guangdong



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The Yuebei area has always been a significant shelter for immigrants since the Qin Dynasty. Whenever wars or disasters happened in northern China, large numbers of refugees moved southwards to this mountainous area in search of peaceful lives. Each group of immigrants brought to this area not only their culture but also their dialect, which undoubtedly increased the linguistic complexity in the Yuebei area. Nowadays, in addition to the mainstream Yue and Hakka dialects, there is a group of less familiar dialects in this region, called Yuebei Tuhua (Wu and Zhan 2008).

Yuebei Tuhua (YBTH), previously named as Shaozhou Tuhua, is distributed over northern Guangdong. It is a group of aboriginal dialects whose linguistic affinity is still uncertain (Lin and Zhuang 2000, Zhao 2002, Zhuang 2004). On account of its particular geographic location, YBTH is linguistically influenced by different Chinese dialects. To be specific, YBTH exhibits linguistic characteristics from Hakka (Li 2000, Lin et al. 1995, Sagart 2001), from Yue (Lin et al. 1995), from Gan (Zhuang 1999b), from Southwest Mandarin (Zhuang 2004), and from Xiangnan Tuhua and Guibei Pinghua (Wang 2001, Zhan et al. 2003). In addition, YBTH also manifests many of its own distinctive linguistic characteristics, such as excessive coda simplification, loss of postvocalic glides in some rimes, and unique formation of diminutives, the last of which is the focus of this study.

The rest of this study is organized as follows. Section 2 introduces the formation of three types of YBTH diminutives and their diachronic order. Section 3 illustrates the geographic distribution of YBTH diminutives, focusing on the correspondence between types and locations. Section 4 accounts for why such a correspondence exists from socio-historical and linguistic factors. Special attention is directed to the conflict between two forces of diminutive formation in southeastern Chinese dialects (i.e. disyllabic diminutives and glottalized diminutives). Section 5 deals with a residual question about why glottalized diminutives do not surface in Yue and Hakka in Guangdong Province. Section 6 concludes this study and provides issues for further research.

2. The diminutives in Yuebei Tuhua

The diminutives in YBTH have been explored by a large number of researchers (Huang and Cui 1983, Li 2009, 2010, Li and Zhuang 2009, Mou 2002, Shao 1995, Wu 2003, Xie 2000, Yue 2002, Zhang 2000, Zhao 2002, Zhengzhang 2002, Zhuang 2004, Zhuang and Lin 2000). Similar to diminutives in other Chinese dialects, YBTH diminutives are constructed by changing the tones and/or rimes of the stems. They can be classified into three types, middle-GSI, final-GSI and no-GSI, in terms of the place of glottal stop insertion (GSI). The examples of each type are illustrated in (2)

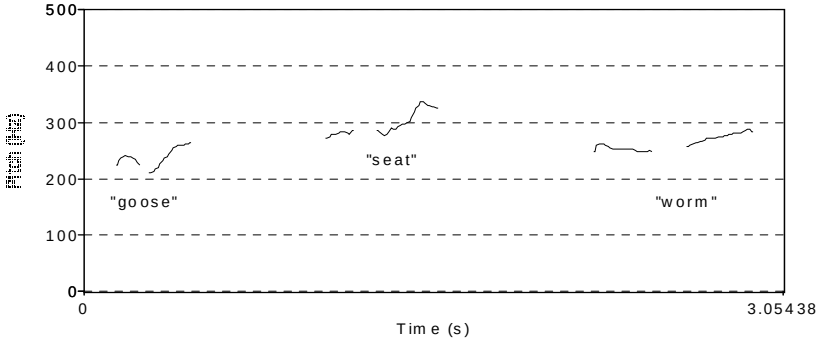
(Zhuang 2004:241-245).

(2)

	Dialect	Stem	Diminutive	Gloss
Middle-GSI	Baisha	ŋɔ:	$ŋɔ^{3}ʔɔ^{5}$	'goose'
		voe	$vo^{3}ʔe^{5}$	'seat'
		$ts^{h}ɐn$	$ts^{h}ɐ^{3}ʔn̩^{5}$	'worm'
Final-GSI	Meicun	kwɤ	$kwɤʔ^{31}$	'cover'
		$ts^{h}aŋ$	$ts^{h}aŋʔ^{31}$	'spring'
		gɔw	$gɔwʔ^{31}$	'goose'
No-GSI	Changjiang[1]	$t^{h}ɛw$	$t^{h}ɛw^{↗}$	'head'
	Wujing	kã	$kã^{31}$	'orange'
	Changlai	ʃi	$ʃi^{51}$	'filter'

As far as middle-GSI is concerned, a glottal stop is inserted into the rimes of the stems (i.e. VʔV, VʔN, VʔG).[2] Given that the maximal syllable structure for Chinese dialects is CGVX, middle-GSI is undoubtedly a marked syllable. Moreover, the diminutive tones (DTs) are broken by the inserted glottal stop. The tone after the glottal stop is higher than that before the glottal stop. This phenomenon is clearly shown in (3).[3]

(3) Three middle-GSI diminutives in Baisha



[1] The diminutive tone in Changjiang is a high-rising tone which is represented by the "↗" symbol.

[2] Zhu (2004a) argues that it is a creaky voice in middle-GSI, instead of a glottal stop. Yet, no matter whether it is a glottal stop or a creaky voice, they have the same articulatory characteristic. They both lack an overt supralaryngeal specification, and this characteristic plays an important role in the diachronic development of YBTH diminutives. For more details about this issue, please see Cheng (2009). Moreover, according to Kingston (2005), the fundamental frequency (F_0) is also beneficial to the distinction between a glottal stop and a creaky voice. The former leads to an increasing F_0, because of the tension resulting from the tight compression of the vocal folds. On the contrary, the latter decreases F_0, owing to its lack of the tight closure.

[3] For more detailed accounts on the phonetics and phonology of the glottal consonants, please refer to Pennington (2005) and Zhu (2004b, 2006).

The discontinuous parts of the pitch contours in (3) represent the location of the glottal stop (i.e. a sudden stop of vocal fold vibration). The glottal stop is produced with a complete closure of vocal folds so that it will be easy to be followed by an increasing frequency of vocal fold vibration.[4] In terms of final-GSI, a glottal stop is inserted syllable-finally. Interestingly, the DTs of the final-GSI diminutives fall unanimously because of the presence of the final glottal stop. Once the vocal folds are tightly held, vibration decreases, and then completely ceases, which naturally leads to a falling tone. As for no-GSI, as its name implies, it is formed without any glottal stop inserted. At this time, diminutives are identified by the high-rising or high-falling DTs exclusively.[5] Further, there exists a diachronic order among different types of YBTH diminutives. Zhao (2002:30-33) and Zhuang (2004:253-258) state that middle-GSI appears diachronically prior to final-GSI, and no-GSI ends the entire developmental process (middle-GSI → final-GSI → no-GSI).[6]

3. The geographic distribution of the diminutives in YBTH

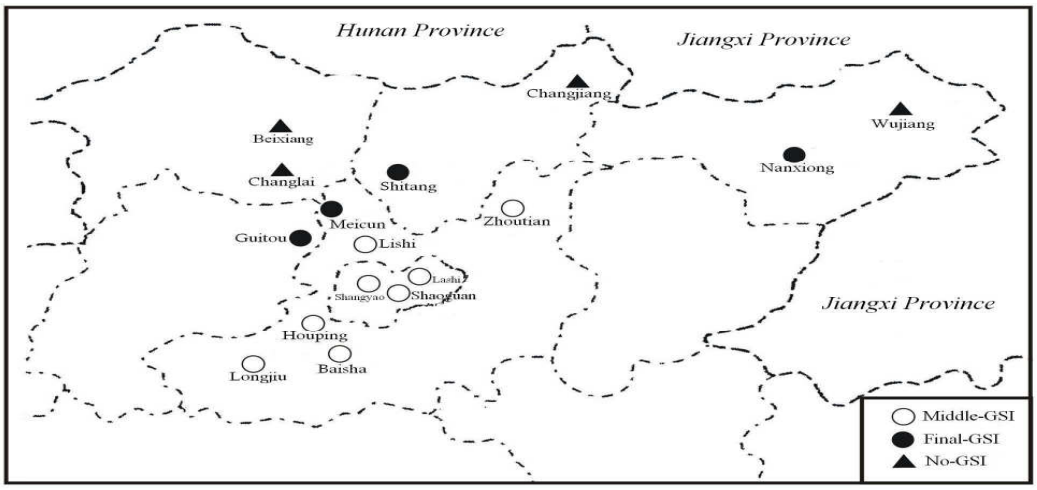
After the introduction to the formation and development of YBTH diminutives, let us see how the types of YBTH diminutives are distributed in northern Guangdong. The map in (4) shows the geographic distribution of YBTH diminutives. The attested dialects are taken from Mou (2002), Shao (1995), Wu (2003), Xie (2000), Yue (2002), Zhao (2002), Zhengzhang (2002) and Zhuang (2004).

[4] Some other Chinese dialects also exhibit (non-diminutive) middle-GSI, like Huangyan (Chao 1934), Nianbadu (Sun 2005), Yugan (Chen 1992), Yongkang (Cao 2002), Liancheng (Xiang 2002) and Mandarin Chinese (Cheng 1973). In these dialects, the glottal stop is highly correlated with the falling-rising citation tones (e.g. [31ʔ3] in Huangyan and [21ʔ4] in Mandarin Chinese). Specifically, the falling-rising pitch transition is liable to cause a short stop of vocal fold vibration which naturally results in a glottal stop.

[5] Hirata (1983) observes that DT changes are highly correlated with the glottal stop or glottalization, and that the commonest tonal shapes in these diminutives are high-rising or high-level. Due to the closure of the vocal folds when producing the glottal stop, rising tonal shapes are not hard to account for. This observation is also confirmed by Chen (1992b) who claims that the glottal stop (or glottalization) is one of the important characteristics of the diminutives in southern Chinese dialects, and suggests that the glottal stop is the early form of DT changes.

[6] One reviewer asked whether the opposite direction (i.e. no-GSI → final-GSI → middle-GSI) is possible. Two arguments can be used to rule out this hypothesis. First, this direction represents a structural change from unmarkedness to markedness, provided that middle-GSI displays a marked syllable structure. Without further supporting evidence, this developmental direction will be deviant from the cross-linguistic tendency of language change from markedness to unmarkedness. Second, the order among these types of YBTH diminutives is also empirically supported. The transitional shifts from middle-GSI to final-GSI and from final-GSI to no-GSI can be perceived by generational differences in actual use. For example, Zhuang (2004:255) investigated the diminutives in the Lisi dialect, and discovered that, among his two informants, the older, less-educated one merely used middle-GSI, whereas the younger one used middle-GSI and final-GSI interchangeably. A similar generational shift between final-GSI and no-GSI is observable in the Guitou dialect (Zhao 2002:32). All in all, the developmental order from middle-GSI to no-GSI is reasonable.

(4) The geographic distribution of the diminutives in YBTH



A scrutiny of (4) reveals an intriguing issue worthy of further exploration. The distribution of YBTH diminutives from south to north corresponds to their diachronic order. Specifically, middle-GSI is only found in the central and southern parts of the Yuebei area, roughly around Shaoguan City (Shaoguan, Lashi, Shangyao) and Qujiang County (Baisha, Longjiu, Houping, Lishi, Zhoutian).[7] No-GSI is evident only in the far northern periphery of the Yuebei area, like Wujing, Changlai, Changjiang and Beixiang.[8] Final-GSI is distributed in-between these two types (i.e. Guitou, Meicun, Shitang and Nanxiong).

The one-to-one correspondence between the temporal order and the geographic distribution is appealing. However, ahead of us are some questions that require further investigation. First, why does such a correspondence emerge? Is it just an accident? Or is there any evidence that can support the radiation from south to north and the temporal-geographic correspondence? Second, why is the marked middle-GSI able to surface as the first developmental stage? Is the diachronic order of YBTH diminutives linguistically grounded? These questions will receive a full explanation in the subsequent sections.

4. The factors for the geographic distribution of the diminutives in YBTH

In addition to self change, there must always be some linguistic or extralinguistic

[7] Three middle-GSI dialects inside Shaoguan City are not shown in the map due to space limitations. They are the Jingcun dialect, the Xilian dialect and the Xihe dialect.

[8] A more detailed account should be given to the Beixiang dialect. According to Zhuang (2004), Beixiang belongs to final-GSI. Yet, according to an earlier investigation (Zhao 2002), the final glottal stop weakened, and almost turned out to be glottalization. What is worse, there is a tendency that many diminutives in the Beixiang dialect are losing their final glottal stop (or even glottalization). It is predictable that the glottal stop (or glottalization) will disappear in the not-so-distant future. As a result, Beixiang is regarded as one member of the no-GSI group in this study.

factors (e.g. immigration or language contact) that drive languages to change (Chen 2007). If this were the case, what would trigger YBTH diminutives to geographically spread from south to north and diachronically develop from middle-GSI to no-GSI? This issue can be explored from socio-historical and linguistic factors.

4.1 The socio-historical factor: Areal immigration and development of Yuebei

Let us start our discussion from an examination of how YBTH diminutives have been spread. As previously stated, many high mountains near the northern provincial border of Yuebei functioned as geographic barriers for military campaigns and formed natural shelters for immigrants. A number of refugees from northern China constantly moved into the Yuebei area (Zhuang 1999a, 1999b).[9] This reveals that the overall direction of the large-scale immigration in Chinese history was from north to south. This north-to-south direction, obviously, is opposite to the spread of YBTH diminutives, and, consequently, cannot be used to explain how YBTH diminutives have spread across the region. As compared with the rest of China, Yuebei is relatively small, and, for a small region, areal immigration and development should play a much more significant role in regional linguistic change.

As far as the development of a small region is concerned, when people moved into this region, they would naturally gather together to form a township or a city. This place would naturally become the political, economic and cultural center of this area, and thus keep attracting more immigrants. Once the region was overdeveloped, the residents would have to move to the suburban (or rural) areas, and seek more land and food for the sake of survival. This description best matches the areal development and immigration in Yuebei. According to Zhuang (1999a), Shaoguan and its surrounding regions were the earliest developed areas in Yuebei. For this reason, Shaoguan has always been the political and economic center in Yuebei since the Tang Dynasty. During the Ming-Qing period, the area around Shaoguan was overdeveloped, and the residents started to move out to suburban or far rural areas. But why didn't they move southwards to the productive Pearl River Delta? Actually, the southern part of Guangdong Province, such as Qingyuan County, Fogang County, and other far southern fertile areas, had already been occupied by Cantonese residents. Being unable to move southwards, the residents made the opposite choice and moved northwards. This small-scale south-to-north population movement must have made a great contribution to the diffusion of the linguistic characteristics of YBTH, including its diminutives. Such cases as YBTH are not uncommon and have been widely

[9] The largest number of immigrants to this area were Hakka. This accounts for why Hakka is one of the mainstream dialects in this area, and why most of the inhabitants bear a close relation with Hakka (Zhuang 2005).

investigated in sociolinguistics and dialectology (Chamber and Trudgill 1998, Trudgill 2000). For example, people in Shanxi Province, because of population explosion and natural disasters, moved northwards and, thus, spread the Jin dialects into some parts of Inner Mongolia (Qiao 2008). Another obvious case comes from Mandarin Chinese, which spread from Hebei Province to northeastern, northwestern, and southwestern China during the Ming-Qing period (Chen 2007:192). As a result, YBTH is simply a case among them.

4.2 The linguistic factor: Two conflicting forces of diminutive formation

The spreading direction of YBTH diminutives is empirically supported by the areal immigration and regional development of Yuebei, but this factor only provides a sufficient, but not necessary, condition. How and why the temporal-geographic correspondence was established is still unknown. Below, this study attempts to argue that the distribution of YBTH diminutives results from a conflict between two forces of diminutive formation in southeastern Chinese dialects, and the correspondence represents a compromise of this conflict.

Two forces of diminutive formation are widely observed in southeastern Chinese dialects: disyllabic diminutives (DD) and glottalized diminutives (GD). The former are formed by adding syllabic diminutive suffixes to the stems, and they extensively exist in Min, Yue and Hakka. For example, Chen and Li's (1991) investigation of Northern Min indicates that diminutives are constructed by two lexical forms (i.e. a stem + a syllabic suffix). All variants of /kiaŋ/ (囝) in (5) hold the shapes as syllabic suffixes.

(5) Variants of /kiaŋ/ in the dialects of Northern Min[10]

Dialect		Dialect		Dialect	
Jianou	/kyiŋ/	Songxi	/kyŋ/	Yangdun	/kiŋ/
Shipo	/kyŋ/	Shanyang	/kiŋ/	Zhenghe	/kyiŋ/
Jianyang	/kyeiŋ/	Chongan	/kyaiŋ/	Xinqiao	/kiũ/
Yongan	/kyɛiŋ/	Sanyuan	/kyaiŋ/	Shaxian	/kyẽ/
Shaowu	/kin/	Taining	/kien/	Shunchang	/kiẽ/
Guangze	/kin/	Mingxi	/kieŋ/	Jiangle	/kiẽ/
Xiyang	/kyŋ/	Tangchuan	/kɯ/	Zhongxian	/kœŋ/

Glottalized diminutives are formed by adding a glottal stop or glottalization to

[10] For more details about [kiaŋ] in the Min dialects and its grammaticalization, please refer to Li (2007).

stems, and are widely observed in southern Wu and YBTH. Glottalized diminutives are usually regarded as unisyllabic in terms of syllable count. Yet, three comments related to glottalized diminutives need special attention. First, glottalization is highly correlated with high-rising, high-level or high-falling DTs, such as [ʔ45] in Lishui and [ʔ55] in Qingtian.[11] Next, according to Cao (2002:159), after Ru-tone syllables (i.e. checked-tone syllables) lose their coda glottal stop or glottalization (i.e. [-p, -t, -k]→[-ʔ]→ ϕ), glottalization can be a strong diminutive marker. In other words, Ru-tone glottalization and diminutive glottalization seem mutually exclusive and form a relation of "pull chain" (Wang 1999). Third, different opinions about the origin of diminutive glottalization have been proposed in the literature. The diminutive glottal stop (or glottalization) is assumed as a reduced form of /k/ from /kiaŋ/ in Min (Chen 1992b, 1999) or as a compensatory form for loss of nasal diminutive suffixes (or nasalization) in southern Wu (Cao 2002, Zhengzhang 1981).

According to the discussion above, DD and GD exhibit their principal effects on Min (i.e. Fujian Province) and Wu (i.e. Zhejiang Province) respectively.[12] Then, how do DD and GD behave in Guangdong Province? Let us start our discussion from DD. Three mainstream dialects are distributed in Guangdong. They are Yue (in central, western and northern Guangdong), Hakka (in eastern and northern Guangdong), and Min (in southeastern Guangdong). Diminutives in these mainstream dialects are all constructed by adding syllabic suffixes to stems. For example, the suffix [tsaɪ] (仔) or high DTs are used to form the diminutives in Yue (Chen 2000, Tang 2000, Yuan 1983).[13] Min and Hakka also make use of syllabic suffixes, even if the phonetic

[11] Glottalized diminutives usually involve three developmental stages (CVʔ→Cv́ʔ→Cv́). Observation of these stages reveals the relation between the glottal stop (or glottalization) and diminutive tones. The glottal stop in the first stage is a primary segmental feature without any influence on diminutive tones. As time goes by, the glottal stop weakens in the second stage and such a weakening has an impact on tone changes. It is this stage that enables Hirata (1983) and Chen (1992b) to hypothesize that the glottal stop and glottalization are greatly relevant to high DTs. In the third stage, the glottal stop disappears, and high tones turn out to be the primary distinctive feature for diminutives. The fact that loss of the glottal stop leads to high tones is widely discussed in the literature, like Dell (1977), Haudricourt (1954) and Matisoff (1970).

[12] One of the reviewers mentioned that nasalized diminutives are widely observable in Wu and Hui (Cao 2002, Fang 1986, 1993, Liu 2008, Qian 1991, Wu and Wang 2006, Zhao 1999, among others). They undergo several stages (stem + nie/ni/ŋ→(C)V:n/ŋ→(C)Vn/ŋ→Cṽ→CV), and glottalization and/or DTs sometimes accompany the last stage. Hence, nasalized diminutives (ND) seem able to be divided into DD and GD as well, but they are not well addressed. Yet, this study does not touch upon this issue, because ND and GD are different in historical origin and development. In accord with Chen (1992a, 1992b, 1999), this study assumes that GD has a close relation to the syllabic diminutive suffix /kiaŋ/ in Min. Li (2007) also states that /kiaŋ/ in Min has a different historical origin from the suffixes /tsɿ/, /tʰou/ and /ɔ/ in ancient Chinese and Mandarin, and it may come from the substratum of the Kam-Tai languages. These arguments preclude the discussion of the Wu ND. The other reviewer questioned that, if GD spreads southwards in northern Guangdong and comes into conflict with DD, middle-GSI should be the latest stage. Under my assumption, GD is pervasive in northern Guangdong, but not spread stepwise, so middle-GSI and final-GSI emerge at nearly the same time (please refer to the last section of this study for more discussion).

[13] In western Guangdong (including Maoming, Gaozhou, Xinyi, etc), diminutives are formed by vowel

shapes may sometimes differ. Take Min for example, the diminutive suffix in Haifeng is [ã], but that in Shantou is [kiã] (Lin and Xie 1995). On the whole, DD exhibits an active influence in Yue, Hakka and Min in Guangdong.

Next, GD is mainly located in northern Guangdong, for glottalized diminutives are widely observed in YBTH. According to Zhengzhang (2002), YBTH are similar to Wu in terms of the relation between glottalization and high DTs in diminutives. This relation is also observable in other dialects. For example, in Shaowu, one of the Min dialects in northwestern Fujian, some non-Ru-tone words are articulated as Ru-tone ones (with a high-falling tone, 53) in daily conversation, and this tonal change always denotes a diminutive meaning (Chen 1993).[14] Zhang and Wan (1996) make a further parallel comparison between the tonal change in Shaowu and the high-falling DT in Lichuan (one of the Gan dialects near the Shaowu dialect), finding out that the tonal change in Shaowu is a DT change in essence. Similar tonal changes are also observed in Guangze (Yinru, 41) and Taining (Yinqu, 51) (Zhang and Wan 1996), and the high-falling DTs are found in other Gan dialects, such as Yifeng and Nancheng (Li and Zhang 1992).[15] Above all, the tonal changes in these dialects, including DTs, have a high-falling pitch contour.[16] For this, Chen (1993) proposes that the high-falling diminutive tonal changes result from loss of glottalization. To be definite, glottalized diminutives lose their glottalization, and the phonetic influence of the glottalization is hence manifested in the high-falling tones.[17] This phenomenon also suggests that GD has a strong linguistic influence in Wu, Gan and YBTH.

After the account of the two forces of diminutive formation, the question at hand is what relation they have to the geographic distribution of YBTH diminutives. In fact, the latter can be viewed to result from the conflict of the former, as shown in (6).

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nasalization or adding nasal suffixes to the stems (Chen 2006, Li 1996, Shao 2002). They are similar to those in Wu, but different from those in the Guangzhou dialect (the representative dialect of Yue). In Guangzhou and its surrounding dialects, like Taishan and Shunde, diminutives are formed by diminutive suffixes or by peculiar high DTs. More details about these high DTs will be presented in section 5.

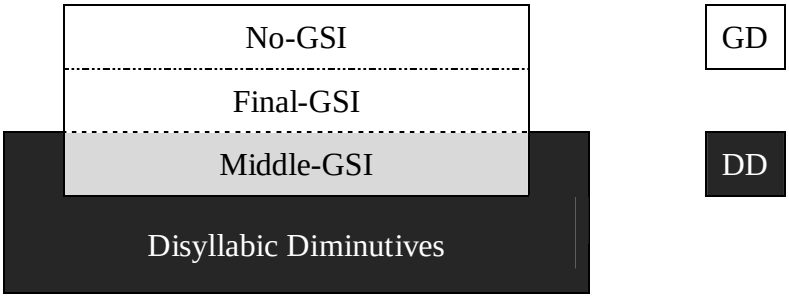
[14] Interestingly, the Shaowu dialect still forms its diminutives mainly by /kin/ suffixation to the stems, as shown in (5). Thus, the non-Ru tone change in Shaowu seems to indicate that both DD and GD exist, but the former is much stronger than the latter, so GD is forced to merge with a high-falling citation tone. Similar phenomena also occur in Guangze (/kin/) and Taining (/kien/).

[15] The non-Ru tones in Guangze and Taining are changed into Yinru (41) and Yinqu (51) respectively. What is interesting here is that, though these non-Ru tones are changed into different tonal classes (i.e. Ru in Shaowu, Yinru in Guangze, and Yinqu in Taining), all the tones unanimously have a high-falling pitch contour (i.e. 53, 41 and 51). As previously stated, glottalization is highly correlated to high tones (high-rising, high-level or high-falling), and this correlation motivates the non-Ru tones to merge with the high-falling citation tones in these dialects.

[16] About the relation between high tones and diminutives, see Zhu (2004b) for more discussion.

[17] One of the reviewers pointed out that tonal changes in the Shaowu dialect and the adjacent dialects are complicated. Some non-Ru-tone words (e.g. [pʰuŋ] 'sprinkle' and [kʰua] 'stride') are articulated as Ru-tone ones without detectable diminutive meanings. For this, it may be argued that the presence of these Ru-tone words may result from other factors in the subsequent historical development, like tonal merger or analogic change (because of the high-frequency use of the diminutives). Investigating this issue is beyond the scope of this study, and further research is invited.

(6)



In (6), DD and GD conflict with each other in the Yuebei area. The middle-GSI diminutives result directly from a compromise of the two forces (as marked in gray), because they have a disyllabic structure and an inserted glottal stop. As previously stated, middle-GSI has a marked syllable structure, but the glottal stop contributes to its maintenance. According to Cheng (2009), /ʔ/ is not specified for any place of articulation in the supralaryngeal cavity and represents only a state of phonation, so the transition between the two peaks in middle-GSI is short and rapid. After the first syllable is articulated, a phonation caused by the glottal stop is formed. During the phonation, it is possible to abruptly close the glottis, briefly hold that closure and then suddenly allow the vocal folds to vibrate again. As for final-GSI and no-GSI, they both exist in the area where GD plays an active role. The difference between them lies in whether the glottal stop or glottalization exists. In the latter, glottalization is no longer observed, and can be sensed only via the high-falling or high-rising DTs. In the former, the glottal stop or glottalization is still observable, but they tend to disappear. To be brief, the temporal-geographic correspondence of YBTH diminutives is not accidental, but linguistically grounded.

In addition, in accord with Cao (2002), the tendency that Ru-tone glottalization and diminutive glottalization are mutually exclusive is also observable in YBTH. Zhuang (2004) states that Ru-tone syllables in middle-GSI are usually ended with a glottal stop or glottalization ([-p, -t, -k]→[-ʔ]), while Ru-tone syllables in final-GSI and no-GSI have almost lost their Ru-tone glottalization ([-ʔ]→ ϕ). This tendency partially accounts for why the glottal stop is inserted into the syllable-medial position in middle-GSI, for Ru-tone glottalization in coda positions prevents diminutive glottalization from surfacing in the same position.

5. A residual question about the effects of DD and GD in Guangdong Province

If our assumption about the conflict between DD and GD is on the right track, one obvious question awaits further exploration. If GD spreads southwards, does it affect the two mainstream dialects, Yue and Hakka, in Guangdong?[18] Let us start our

[18] Though Min is the third mainstream dialect in Guangdong, it is excluded from the discussion. The

exploration from Yue in southern Guangdong.[19] As previously stated, besides the diminutive suffix [tsaɪ], two DTs (35* and 55*) exist in the Guangzhou dialect (Mai 1990, 1995).[20] The corresponding relation between DTs and citation tones (CTs) is illustrated in (7). The symbol "*" represents an ending with a super high tone.

(7) Corresponding relation between DTs and CTs in the Guangzhou dialect

	CT	DT		CT	DT
Yinping	53	55*	Yangqu	22	35*
Yangping	21	35*	Upper Yinru	55	(55*)
Yinshang	35	(35*)	Lower Yinru	33	35*
Yangshang	13	35*	Yangru	22	35*
Yinqu	33	35*			

(Chen 2000:172-173, 176)

Chen (2000) proposes that the peculiar 35* and 55* DTs in the Guangzhou dialect originate from the effect of GD (i.e. glottalization), a phenomenon similar to the creation of high-falling or high-rising DTs in Wu, Gan and YBTH. In order to support his argument, he makes a comparison between two dialects, Shunde and Taishan, near Guangzhou. As shown in (8) and (9), the corresponding relation between DTs and CTs in Shunde and Taishan is almost identical to that in the Guangzhou dialect. The Shunde dialect, in particular, can even be regarded as the earlier developmental stage of the Guangzhou dialect, as far as the patterns and the DT contours are concerned.

(8) Corresponding relation between DTs and CTs in the Shunde dialect

	CT	DT		CT	DT
Yinping	53	55*	Yangqu	21	25*
Yangping	42	25*	Upper Yinru	55	55*
Yinshang	24	25*	Lower Yinru	33	25*
Yangshang	13	25*	Yangru	22	25*
Yinqu	32	25*			

(Chen 2000:173)

reason is that the Min dialects are mainly distributed in southeastern Guangdong. In other areas of Guangdong, the Min dialects are only dispersive, and have little linguistic influence.

[19] In southern Guangdong, Yue is the strongest dialect. Thus, the influence of GD on Hakka in southern Guangdong is excluded from the ongoing discussion.

[20] Guangzhou is the political, economic and cultural center of Guangdong Province, so the Guangzhou dialect is always regarded as the representative dialect of Yue.

(9) Corresponding relation between DTs and CTs in the Taishan dialect

	CT	DT		CT	DT
Yinping	33	335	Qusheng	32	325
Yangping	22	225	Upper Yinru	55	55
Yinshang	55	55	Lower Yinru	33	335
Yangshang	21	215	Yangru	31	315

(Chen 2000:174)

On the basis of the DTs in Guangzhou, Shunde and Taishan, the effect of GD is spread into Yue (i.e. southern Guangdong), but is realized as high DTs instead of a glottal stop or glottalization. Noteworthily, 35* and 55* DTs in Guangzhou will soon disappear, because the tonal distinctions between 35 and 35* and between 55 and 55* have become blurred in recent decades. This also implies that the influence of GD is becoming weaker and weaker.

If the effect of GD indeed spreads into Yue, why can it not surface as a glottal stop or glottalization? There are two possible reasons for the prohibition of GD. First, DD is much stronger than GD. When DD and GD conflict with each other in Yue, GD is forced to parasitize the super high DTs. Second, according to Zhan (2001), the [-p, -t, -k] codas remain unreduced in Yue, which may also contribute to the prevention of GD. To be specific, the syllable-final position is default to Ru-tone glottalization. Though the [-p, -t, -k] codas are not yet reduced to the glottal stop in the Guangzhou dialect, no one dares say that Ru-tone glottalization will not occur, because such a statement will contradict the widely attested development in Chinese dialects that the [-p, -t, -k] codas are reduced to a glottal stop or glottalization. For this reason, unless the extinction of Ru-tone glottalization is ensured, diminutive glottal stops or glottalization, by inference, will be excluded from the syllable-final position.[21]

With reference to Yue and Hakka in northern Guangdong, the two reasons stated above are also able to account for why GD does not work in this area. The Yue dialects in northern Guangdong also make use of the syllabic suffix [tsaɪ] to form diminutives. What's more, patterning with the suffix [tsɿ] (子) in Mandarin, [tsaɪ] can sometimes function as a nominal marker, a pragmatic function that is not observed in

[21] One of the reviewers noticed that the unreduced codas [-p, -t, -k] have different contributions in middle-GSI and Yue. They force GD to surface as an internal glottal stop in the former, but as peculiar high tones in the latter. Obviously, the strength of DD and GD accounts for this difference. The equal strength between the two forces in middle-GSI results in an internal glottal stop. If not so, the presence of a marked syllable type in middle-GSI is hard to explain. In Yue, the strong DD prohibits GD from surfacing as a glottal stop. Moreover, the use of high tones in diminutives also follows the cross-linguistic tendency that high tones are utilized to indicate intimacy and smallness (known as "frequency code," see Ohala 1983, 1984, 1994 for details), and naturally reduces the segmental burden in Chinese dialects whose syllable structures are simple. Given this background, the occurrence of high tones in Yue is reasonable. For more discussion about the relation between intimacy and diminutive tones, please refer to Zhu (2004b).

the Yue dialects in southern Guangdong (Zhang 1995). In terms of the [-p, -t, -k] codas in the Yue dialects in northern Guangdong, the [-p] coda has been merged into [-t] or [-k], but no glottalization occurs. In Shaoguan City, the [-p] coda is maintained in some rimes, but its articulation has been simplified to a lip-closing action, so the [-p] coda is predicted to disappear soon (Zhan and Zhang 1994).

In the Hakka dialects in northern Guangdong, the syllabic suffix [e] is used to form diminutives. Further, Xiong (1987) and Zhuang (2005) observe two patterns of the [-p, -t, -k] codas in Hakka in northern Guangdong. The northern pattern is that some or all of these codas are merged together, and are reduced to glottalization. This pattern is distributed in such counties as Shixing, Nanxiong, Wengyuan, Renhua and Ruyuan. The southern pattern is observed in Shaoguan, Qujiang and Yinde, showing that the [-p, -t, -k] codas are completely retained. Obviously, no matter which pattern is considered, the preservation of Ru-tone glottalization (northern pattern) and the [-p, -t, -k] codas (southern pattern) will prevent diminutive glottalization from surfacing.[22]

6. Closing remarks

This study argues that the geographic distribution in YBTH diminutives result from a conflict between two forces of diminutive formation: disyllabic diminutives and glottalized diminutives. The correspondence between the temporal development and the geographic distribution represents a compromise of this conflict. Noteworthily, the influencing domains of GD and DD seem to accord with Li's (1999) classification of southeastern Chinese dialects into "Jinjiang dialect" and "Yuanjiang dialect". The former includes Hui, Xiang, Wu and Gan, while Min, Yue and Hakka belong to the latter. One of the important factors in his classification lies in whether the Ru-tone syllables are glottalized.

In addition, this study also gives rise to several appealing issues. First, most of the previous literature about YBTH diminutives agreed with the diachronic order from middle-GSI, via final-GSI, to no-GSI. Yet, some questions, like why middle-GSI can emerge as the first stage and why the glottal stop is inserted to break the rime, did not acquire clear expositions. This study proposes a new view about the diachronic order of YBTH diminutives. If DD and GD conflict with each other, the diachronic order should start from middle-GSI and final-GSI to no-GSI (i.e. middle-GSI and final-GSI→no-GSI). That is, middle-GSI and final-GSI should appear at nearly the same time. Additionally, this study also provides a plausible reason for the inserted

[22] Until now, this study hasn't discussed the effect of DD in YBTH. In Yuebei, GD is stronger than DD, so the effect of DD becomes weaker and weaker northwards. In fact, the strength of GD is obvious because some of the Hakka dialects in northern Guangdong, like those in Changjiang and Renhua, form their diminutives by DTs rather than syllabic suffixes (Zhuang 2005).

glottal stop. Because the glottal stop has no supralaryngeal specification, it contributes greatly to the maintenance of middle-GSI. As time goes by, middle-GSI will surely develop towards the direction of final-GSI or no-GSI, on account of the restriction of the maximal syllable structure (CGVX) in Chinese dialects.

Next, as for the inserted glottal stop, another view is worthy of our attention, that is, syllable contraction. Tsao and Shi (2009) propose that Chinese diminutives are originally formed by adding syllabic suffixes to the stems. The suffixes then become unstable and merge with the stems. Before the stem and the suffix are tightly merged, there is always a transitional stage in which the diminutives are longer and have one more toneme than normal syllables. At this time, it is easy for the diminutives to cause falling-rising (e.g. MLM or HLH) or rising-falling (e.g. MHM or LHL) DTs. The pitch transition will easily cause a glottal stop (or a creaky voice) because of the brief stop of vocal fold vibration, especially when the transition takes place in the lowest pitch concave (e.g. [31ʔ3] in Huangyan and [21ʔ4] in Mandarin Chinese).[23] Yet, on the basis of previous studies related to YBTH diminutives, middle-GSI only has two DTs, L?M and M?H, from which no obvious pitch transitions are observed. The only exception, to my knowledge, comes from Wu's (2003) investigation of the Longjiu middle-GSI which has two falling-rising DTs, 4ʔ34 and 3ʔ23. On the one hand, the difference during the pitch transition is so small (only one point in scale) that a glottal stop seems unable to be created, and, on the other hand, the pitch values of the DTs are located within the pitch range of the citation tones.[24] As a consequence, Tsao and Shi's (2009) view seems inapplicable to YBTH middle-GSI diminutives, because it is unable to explicate the origin of the glottal stop inside the diminutives.

Third, Tsao and Shi's (2009) assumption may also be reasonable in terms of the general development of Chinese diminutives. For example, the long DT in the Taishan dialect in (9) is a direct support of their assumption. As a result, if the inserted glottal stop results from the stem-suffix contraction, the development of middle-GSI should be taken into reconsideration. It can be assumed that there are two subsequent stages in middle-GSI. In the earlier stage, because the stem and the suffix are just merged together, there are still observable pitch transitions in DTs (i.e. three tonemes), and the Longjiu dialect is a relic dialect of this stage. In the later stage, the stem-suffix merger is so tight that only rising DTs are observed (i.e. two tonemes). Obviously, whether this assumption can be attested requires more fieldwork investigation in the future.

[23] In fact, the view in this study is not contradictory to Tsao and Shi's (2009). The transitional stage in Tsao and Shi (2009) represents the time period when DD and GD reach a tie in their conflict. It is also at this period that middle-GSI diminutives are created.

[24] According to Wu (2003), there are seven citation tones in the Longjiu dialect. They are Yinping [21], Yangping [42], Shangsheng [24], Yinqu [44], Yangqu [22], Yinru [5] and Yangru [2].

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粵北土話小稱詞的地理分佈：
漢語東南方言兩股小稱形成勢力妥協的結果

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粵北土話小稱詞已受到許多研究探討。然而，粵北土話小稱詞的歷時演變類型及其地理分佈具有一對一的對應關係，這種關係的存在卻鮮少受到關注。因此，本文分別從社會歷史因素及語言因素，探討粵北土話小稱詞中這種對應關係的形成。除了粵北地區的地區性移民與區域開發的影響之外，本文主張，這種歷時類型與地理分佈之間的對應關係，主要來自於漢語東南方言兩股小稱形成勢力的彼此衝突，而粵北土話小稱詞的地理分佈便是這兩股勢力衝突後妥協的結果。

關鍵詞：小稱、地理分佈、粵北土話、閩語、粵語、客語