

On the initial assimilation in the Xianyou dialect of Chinese

CHEN,Hong

Kobe City University of Foreign Studies

Email: chenhung@protonmail.com

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Abstract: This paper mainly describes the initial assimilation in the Xianyou dialect, a sinitic dialect spoken in Xianyou County 仙遊縣, Putian Prefecture 莆田市, Fujian Province 福建省, China.

At first, a sketch of the phonology including consonants, vowels and tones is introduced. And whether this assimilation is synchronic or diachronic is discussed. By utilizing the first-hand data, an assimilation rules table is summarized. Even though there are papers on the Xianyou dialect in the 1950s and 1960s, this paper will excavate many new findings.

Outlines

1. Introduction
2. Syllable Structure
3. Is the initial assimilation synchronic or diachronic?
4. Initial Assimilation
5. Example Words Which do not Follow the Alternation Rules
6. Conclusion and the remaining problems

1. Introduction

The Xianyou dialect is genetically affiliated with the Puxian sub-group of the Min supra-group of the Sinitic branch of the Sino-Tibetan family. It is spoken by nearly all of the inhabitants of Xiānyóu County 仙遊縣, which is located in the western part of Pǔtián prefecture 莆田市¹. It is only intelligible with the dialect spoken by the people in the eastern part of the Putian prefecture. Generally, the dialect spoken by the eastern and western parts of the Putian prefecture is called as the Puxian dialect 莆仙話 because it is mainly spoken in the Putian prefecture 莆田市. Putian prefecture was called Xīnghuàfǔ 興化府 during Ming Dynasty 明朝 and Qing Dynasty 清朝. That is why the Puxian dialect is also called 興化話.

Besides the Putian prefecture, it is said that native Puxian speakers are widely spread around some towns, such as the Xīncuò Town 新厝鎮 in the Fúqīng city 福清市(Feng1993:7), and the Jièshān Town 界山鎮 in the Quánzhōu city 泉州市(Lin2007). Some migrants whose ancestors came from the Putian prefecture

¹ A small number of villages in the southern part of Xianyou County speaks Southern-min Dialect 閩南方言.

to the Southeast Asia also keep speaking the Puxian dialect. It is said that they prefer to use the term ‘Hinghuaua or Henghwawa 興化話’ to refer to the Puxian dialect².

The words of the Xianyou dialect are generally monosyllabic, but not exclusively. It has five distinctive tones. For example, the segmental string /ʔou/ shows different meanings depending on which the tone is pronounced: /ʔou55/ [ʔou54] ‘black’ 烏, /ʔou24/[ʔou24] ‘bent’ 弧, /ʔou33/ [ʔou32] ‘to dig out, to take out from bag, pocket or something alike’, /ʔou52/[ʔou52] ‘dirty’ 污, /ʔou11/[ʔou11] ‘colocasia, taro’ 芋. It has a rather simple consonant system with fifteen distinct initials and two codas. There are fairly many vowels, such as eight oral vowels and four nasal vowels. Furthermore, the initial consonants alternate when they do not occur at the the first syllable of the word. The alternation patterns of the initial consonants are the main topic of this paper.

The data presented here are from my fieldwork notes from 2016 to now. The age of the consultants ranges from forties to eighties. And they are all from Bangtou Town 榜頭鎮, Xianyou County 仙遊縣.

2. Syllable Structure

The syllable structure of the Xianyou dialect is as follows:

$$\sigma = C_1 V_1 V_2 V_3 C_2 / T$$

C_1 represents an optional class of fifteen initial consonants, and C_2 is a coda consonant which can be slotted by /ŋ/ or /ʔ/. The vocalic nucleus is usually one of eight simple vowels, but nine diphthongs and one triphthong also appear. The vocalic nucleus is not obligatory. Note that /ŋ/ can be syllabic, for example, ‘young rice plant’ /ŋ55/[ŋ54] 秧. However, T is obligatory.

2.1 Consonants

2.1.1 Initial consonants (C_1)

Table 1 shows the set of consonants which occur in the initial consonant slot:

Table 1. Initial consonants (occurring in C_1 slot)

		Bilabial	Alveolar	Velar	Glottal
Stops	Voiceless unaspirated	p-	t-	k-	ʔ-
	Voiceless aspirated	p ^h -	t ^h -	k ^h -	
Fricative					h-
Affricates	Voiceless unaspirated		ts-		
	Voiceless		ts ^h -		

² In fact, the previous researches like Zhang(1972) and Bodman(1985), did use the term Hinghua or Xinghua .

	aspirated				
Nasals		m-	n-	ŋ-	
Lateral fricative			ɬ-		
Lateral			l-		

Contrastive pairs for consonant phonemes are given below:

/ph/ vs. /p/: [p^hui52] ‘fart’屁 vs. [pui52] ‘boil’ 沸

/th/ vs. /t/: [t^hai24] ‘kill’ 治³ vs. [tai24] ‘bury’

/kh/ vs. /k/: [k^hu24] ‘to squat’ vs. [ku24] ‘cow, cattle, ox’ 牛

/ʔ/ vs. /h/: [ʔou55] ‘black’ 烏 vs. [hou55] ‘to scold, to chatter’

/tsh/ vs. /ts/: [tsh^hã33] ‘to wake up, (the animal) to be in heat’ 醒 vs. [tsã33] ‘well(n.)’ 井

/m/ vs. /ŋ/: [mãĩ11] ‘to taste’ vs. [ŋãĩ11] ‘offensive, annoyed’

/n/ vs. /l/: [nĩ11] ‘to flash, to shine’ vs. [li11] ‘inside’ 內

/ʔ/ vs. /l/: [ʔi24] ‘time’ 時 vs. [li24] ‘pear’ 梨

A few pointed should be made here to highlight the features of the initial consonants. First, there is neither [s] nor [θ], which can be found in many other languages. Instead, the /ʔ-/ a voiceless lateral fricative is found. And the /ʔ-/ will not be palatalized before high front vowels, such as /i/ and /y/. Second, /ʔ-/ sometimes is not articulated, because it is not distinctive. But, we just use /ʔ-/ as the phoneme script here. Third, the /ts-/ , /tsh-/ , /k-/ , /kh-/ , /h-/ and /ŋ-/ will be palatalized before high front vowels and mid-high front vowels:

/ts/→[tɕ]/_[-back, -low] /tsh/→[tɕ^h]/_[-back, -low] /k/→[kʲ]/_[-back, -low]

/kh/→[k^hʲ]/_[-back, -low] /h/→[ç]/_[-back, -low] /n/→[n̥]/_[-back, -low]

Further, the vowels following the nasal initials are nasalized, which may thus be schematized as follows:

/V/→[Ṽ]/N_

In the rule above, the N represents for the nasal consonants /m-/ , /n-/ and /ŋ-/. Here are some examples. The Chinese character 欖‘olive’ and 腦‘brain’ have the same pronunciation as [nã 33]. Another example is that the two words 鰻‘eel’ and 麻‘fibre, anaesthesia’ share the same pronunciation:[mũã24].

³ In Norman(1979)’s opinion, this word should be written in ‘治’.

2.2.2 final consonants (C₂)

The set of consonants which may appear in syllable-final C₂ slot in the first syllable is only two: /-ʔ/ and /-ŋ/.

Table 2. Final consonants (C₂ slot)

	Velar	Glottal
Stop		-ʔ
Nasal	-ŋ	

The final consonants are assimilated by the initial consonant of the following syllable. The rules are:



For instance, ‘eyes’ 目/mãʔ24/ is pronounced like [mãt35.tɕiu54] ‘eyes’ 目珠, [mãp35.pai24] ‘eyebrow’ 目眉 and [mãk35.kou32] ‘cheekbone’. We can note that the morpheme ‘eye’ is assimilated by [tɕ], [p] and [k].

2.2 Vowels

There are eight oral vowels and some of them have nasal counterparts.

Table 3. Oral vowels

	front		mid	back
high	i	y		u
mid	e	ø		o
				ɔ
low			a	
diphthongs	ia, ya, ua, iu, ai, au, ue, ui, ou			
triphthong	ieu			

A few notes may be added. The /o/ does not sound like the cardinal vowel [o] by most of the speakers who are under their fifties. They pronounce like [ə], which is a central mid-high vowel. Speakers over their sixties do tend to pronounce it like the cardinal vowel [o].

Table 4. Nasal vowels

	front		mid	back
high	ĩ	ỹ		
mid				
				õ
low			ã	
diphthongs	ĩã, ỹã, ûã, iũ, ũĩ, ãĩ, ãũ			
triphthong	ĩẽũ			

We have not found any description in the previous researches on the distinctive features between /ieu/ and /ĩẽũ/. In our data, however, there is one pair of word: [ieu55] ‘to be hungry’ vs. [ĩẽũ55] ‘(of playing card) an ace’. More pairs of words will be excavated in the next fieldwork. It is assumed that most of the nasal vowels descend from vowels with a nasal coda. Some of them, however, have undergone quite different nasalization processes. See below:

- A) 好 ‘good’: /h533/[h532] B)他 ‘other’: /thã55/[t^hã54] C)猴 ‘monkey’: /kaũ24/[kãũ24]
D) 柱 ‘pillar’: /thiũ11/[t^hĩũ11]

Similar examples are also found in the sister dialects of the Xianyou dialect such as the Quanzhou 泉州 dialect and the Chaoshan 潮汕 dialect (Zhang 2012). Zhang calls it ‘automatic nasalization’.

Hereafter, to put it simpler, we just add one tilde to the last vowel to show that the whole vowel part is nasal.

2.3 Tones

There are five distinctive tones. Three of them are level tones (Tone 1, Tone 3 and Tone 4), one rising tone (Tone 2) and one falling tone (Tone 5).

Different from the previous researches, in which checked tones and open tones are counted as two different categories ‘Yinru’陰入 and ‘Yangru’陽入 because the two groups have different historical origin, in this paper, we prefer to make it simpler by classifying five categories mainly depending on the pitches.

Tone 1: High level tone. It begins at a rather high pitch, but fails to keep high long enough before falling slowly and then the sound fades away. This paper marks like /55/[54].

Tone 2: Rising tone. In the open syllables, it begins at a rather low stage, and rises sharply to a rather high stage, but a bit lower than the beginning point of Tone 1. But, when in the checked syllables, it realizes as [35]. This paper just marks like /24/.

Tone 3: Middle level tone. It is keeping in a middle stage though somewhat rises a little bit in the latter half part. We mark /33/[32]. A bit more information should be added. Words like ‘I’我/kuoʔ33/, ‘you’汝/tyʔ33/ and ‘he(she,it)’iʔ33/ are pronounced with the same pitch with a glottal stop. But this kind of structure is rather rare.

Tone 4: Low level tone. It is a rather low tone, sometimes articulated with a creaky voice. This paper marks like /11/[11].

Tone 5: High falling tone. It begins at a high stage but falls abruptly. At the end of the syllable, we will hear a sharp close of the glottis. The tone does not sound exactly the same to Tone 4 去声 in Putonghua 普通話, but it sounds more like Tone 1 in Yangon Burmese. This paper marks like /52/[52].

The five tones will alternate when they are followed by other syllables, which will be analyzed in another paper.

3. Is the initial assimilation synchronic or diachronic?

Before going to the main topic, we would like to discuss an issue which has never been seriously dealt with: Is that kind of initial assimilation synchronic or diachronic? The previous literatures (Wu & Dai1961, Li2001) refer to the assimilation as ‘change’变化 without discussing the real nature of such kind of assimilation.

In a word, we think it is both synchronic and diachronic. The reasons are as follows. Firstly, a relatively number of words have completed changes. During fieldwork session, more than once, I asked the consultants what the possible form of the initial should be but always got unsatisfying answers. For such kinds of words, we can only know the former initial’s form by comparing to the sister dialects of the Xianyou dialect. For instance, the word for ‘the posteriors’ is [kɔ24.nũĩ54]. From the assimilation rules concluded later in Section 4, we will know that the initial where [n] lies can have six possible underlying forms: They may be /t/, /th/, /ts/, /tsh/, /ʔ/ or /n/.

Secondly, there are so many words in which the initial consonant can be known easily by synchronic view. Often, these words can be written in Chinese characters, or we can find their original forms by investigating the forms it occurs. For example, the word for ‘the fly’ is [hou24.liŋ24]. When it is listed with mosquito, the word form is [man44.ʔiŋ24], which means the mosquito and the fly. The syllable at last is sure to be the same morpheme in the word ‘the fly’.

4. Initial Assimilation

When two syllables are combined to form a compound or a VP, the assimilation can be observed.

Table 5 elaborates the rule of the initial assimilation.

Table5: The rules of the initial assimilation

The sound before alternation	The sound after alternation				
	(C)V? ₁ ._	(C)V._V	(C) $\tilde{V}$._V	(C)V._ $\tilde{V}$ or (C) $\tilde{V}$._ $\tilde{V}$	(C)(V)N._R
p-,ph-	(1a) no alternation	(1b) β	(1c) $\beta \sim m$	(1d)m	(1e)m
t-, th-, $\dot{t}$ -,ts-,tsh-	(2a) no alternation	(2b)l	(2c)l~n	(2d)n	(2e)n
k-,kh-,h-,ʔ-	(3a) no alternation	(3b) zero initial	(3c) zero initial	(3d) zero initial	(3e) η
m-,n-,l-, η -	(4a) no alternation	(4b) no alternation	(4c) no alternation	(4d) no alternation	(4e) no alternation

In the table above, the C represents the initial consonant and the V the vowel part, which can be a simple vowel, a diphthong or a triphthong. The N stands for a nasal stop and R the rhyme part of a syllable.

Hereafter, the rules will be explained with examples.

4.1 Bilabial Alternation

1a.No alternation

Generally speaking, the bilabial stop will not alternate only when the former segment is [ʔ]. Here are the examples:

‘a kind of local food’赤餅: ‘red’赤/tshiʔ11/+ ‘cake’餅/piã33/→[t^hip35.piã32]

‘honeybee’蜜蜂: ‘honey’蜜/piʔ24/+ ‘bee’蜂/phañ55/→[pip35.p^hañ54]

1b. The bilabial stops /p-/ and /ph-/ will be alternated by [β] when they occur intervocalically:

‘the part of head’頭部: ‘head’頭/thau24/+‘part’部/pou11/→[t^hau52. β ou11]

‘the edge of the fireplace’竈边: ‘the fireplace’竈/tsau52/+‘edge’边/piŋ55/→[tsau44. β iŋ54]

‘skin’外皮: ‘outside’外/kua11/+ ‘skin’皮/phue24/→[kua24. β ue24]

The phonetic process is rather simple. Both /p/ and /ph/ have the same feature: [+voiceless, +obstruent, +consonant], while [β] has the feature as [+voiced, +sonorant, +consonant]. The oral vowel has [+voiced, +sonorant, -consonant] features. Therefore, this assimilation can be analyzed like voicing and sonorantal assimilation.

1c. When the former syllable is ended by nasal vowel(s) but the following vowel(s) is not, the stops /p/ and /ph/ will be alternated by [β] or [m].

‘a village’s name’洋尾: ‘a flat plain’洋/iũ24/+ ‘end’尾/pue33/→[iũ24.mũẽ32]

‘three+classifier’三尾: ‘three’三/ɬ555/+ ‘a classifier’尾/pue33/→[ɬ524.βue32]

1d. When the bilabial stops are followed by nasal vowel(s), no matter whether the preceding vowel(s) is nasal ones or not, they will be always alternated by [m]. Meanwhile, the former vowel(s) will be usually assimilated to their nasal counterparts.

‘to eat breakfast’食飯: ‘eat, drink’食/hia24/+ ‘breakfast’飯/pui11/→[ɦĩã52.mũĩ11~ɦia52.mũĩ11]

‘pill’藥餅: ‘medicine’藥/ieu24/+ ‘cake, cookie’餅/pĩã33/→[ĩẽũ24.mĩã32~ieu24.mĩã32]

1e. When the bilabial stops are preceded by a nasal consonant, they will be alternated by [m].

‘table cloth’床布: ‘table’床/tshŋ24/+ ‘cloth’布/pou52/→[ts^hm44.mõũ52]

‘red nose’紅鼻: ‘red’紅/aŋ24/+ ‘nose’鼻/phi52/→[am44.mĩ52]

‘wheat flour’麵皮: ‘noodles’麵/minŋ11/+ ‘skin’皮/phue24/→[mim22.mũẽ24]

4.2 Alveolar Alternation

Unlike the Fuzhou dialect (Chen2013) and the Fuqing dialect(Feng1993), all the alveolar initials in the Xianyou dialect are alternated by [l] or [n].

2a All of the alveolar initials will remain the same when the preceding segment is [ʔ] .

‘cover for side dishes’: ‘food?’(食?)/ɦi24/+ ‘cover’罩/tau52/→[ɦit35.tau52]

‘school’学堂: ‘to learn, to study’学/ha24/+ ‘a kind of building’堂/tɔŋ24/→[hat35.tɔŋ24]

‘bone’骨頭: ‘bone’骨/kuoʔ11/+ ‘a suffix’頭/thau24/→[kuot35.t^hau24]

‘tear’: ‘eye’目/maʔ24/+ ‘water?’ /tsai33/→[mat35.tsai32]

‘father’s younger brother’阿叔: ‘a prefix’阿/aʔ24/+ ‘father’s younger brother’叔/tsyeʔ24/→[at35.tɕyøʔ35]

2b All of the alveolar initials will be alternated by [l] when they occur intervocalically.

‘thirsty’: ‘mouth’喙/tshui52/+ ‘dry, dried’/tɔ55/→[ts^hui44.lɔ54]

‘beard, mustaches’喙鬚: ‘mouth’喙/tshui52/+ ‘beard,mustaches’鬚/tshiu55/→[ts^hui44.liu54]

‘bean crumbs’豆渣: ‘bean’豆/tau11/+ ‘crumb’渣/tsɔ55/→[tau35.lɔ54]

‘snake’大蛇: ‘big’大/tua11/+ ‘snake’蛇/ɬya24/→[tua24.lya24]

‘runny nose’鼻水: ‘nose’鼻/phi52/+ ‘water’水/tsui33/→[p^hi44.lui32]

2c When the former vowel(s) is nasal one(s), the alveolar initial will be alternated by [n] or [l].

‘forehead’額頭: ‘forehead’額/hia24/+ ‘a suffix’頭/thau24/→[çĩã24.lau24~çĩã24.nãũ24]

In ‘forehead’, 額/hia24/ is pronounced with nasal vowels. It is not unusual in the dialect. See 2.2 for more details.

‘the place outside the door’門兜: ‘door, gate’門/muī24/+ ‘a suffix meaning space’兜/tau55/→[mũĩ24.lau54~mũĩ24.nãũ54]

‘get on the bus’上車: ‘to ascend’上/hiũ11/+ ‘car’車/tshia55/→[hiũ24.lia54~hiũ24.nĩã54]

‘right-hand’正手: ‘right, correct’正/tsiã52/+ ‘hand’手/tshiu33/→[tẽĩã44.liu32~tẽĩã44.nĩũ32]

2d When the vowel(s) followed is nasal one(s), the initial is always alternated to [n]. Meanwhile, the preceding vowel(s) is usually assimilated to its(their) nasal counterpart(s).

‘the husband of mother’s sister’姨丈: ‘mother’s sister’姨 /i24/+ ‘husband’丈/tiũ11/→[i52.nĩũ11~ĩ52.nĩũ11]

‘soybean milk’豆漿: ‘bean’豆/tau11/+ ‘syrup, thick liquid’漿/tsiũ55/→[tau24.nĩũ54~tãũ24.nĩũ54]

‘coloured clothes’花衫: ‘follower, colored’花/hua55/+ ‘clothe’衫/tẽ55/→[hua24.nõ54~hũã24.nõ54]

‘electric wire’電線: ‘electricity’電/ten11/+ ‘wire, string’線/tyã52/→[ten44. nỹã52]

2e When the preceding segment is /ŋ/, the alveolar initials are always alternated to [n]. In the meanwhile, the preceding coda /ŋ/ is assimilated to [n].

‘swallow’燕鳥: ‘swallow’燕/eŋ52/+ ‘bird’鳥/tsieu33/→[ɛn44.nĩẽũ32]

‘pillow’枕頭: ‘pillow’枕/tsiŋ33/+ ‘a suffix’頭/thau24/→[tẽin44.nãũ24]

‘sweet potato’番薯: ‘foreign, external’番 /hɔŋ24/+ ‘yam, potato’薯/ty24/→[hɔn24.nỹ24]

4.3 The Velar and Glottal Alternation

3a When velar consonant occurs after the glottal stop, it remains the same and no alternation will arise. Examples are given below:

‘Germany’德国: ‘high moral’德 /teʔ11/+ ‘country, nation’国/kɔʔ11/→[tɛk35.kɔʔ11]

‘glasses’目鏡: ‘eye’目/maʔ24/+ ‘mirror’鏡/kiã52/→[māk35.kĩã52]

3b When the velar initials and glottal ones occur intervocalically, the initial will drop off. Wu & Dai (1961) think that it is a fricative counterpart sound of the obstruent one [k] and [kh], and use the symbol [ɣ]. Chen (2013), however, uses another symbol [u].

The phonetic data in this paper do not attest frication and glottalic element in this condition. Hence, this paper does not agree to state that the intervocalic velar glottal stop is alternated by [ɣ] or [u]. Here are the examples:

‘America, the USA’美国: ‘beauty, beautiful’美/pi33/+‘country, nation’国/**k**oʔ11/→[pi24.ɔʔ11]

‘the lower part of leg’: ‘low’下/ɔ11/+ ‘the body parts under the bottom’/**kh**o55/→[ɔ24.ɔ55]

‘how old’幾歲: ‘how many’幾/kui33/+ ‘years’歲/**h**ue52/→[kui35.ue52]

3c When the velar and glottal initials follow a nasal vowel but precede an oral vowel, the initial will drop off. It is the same as the rule 3b.

‘salted melon with sauce’醬瓜: ‘salted with sauce’醬/tsiũ52/+ ‘melon’瓜/**k**ua55/→[tɕiũ44.ua55]

‘above the head’頭殼頂: ‘head’頭/thau24/+‘shell’殼/kha11/+ ‘above’頂/**t**en33/→[t^hau24.at35.tɛŋ32]

‘to rain’落雨: ‘to fall’落/lo24/+ ‘rain’雨/**h**ou11/→[loʔ35.hou11]⁴

3d When the velar and glottal initials are preceded by an oral vowel and followed by a nasal vowel, the initial will drop off.

‘to burn incense’燒香: ‘to burn’/ɬieu55/+ ‘incense’香/**h**iũ55/→[ɬieu24.iũ54~ɬiẽũ24.iũ54]

‘to be an officer in the government’做官: ‘to do, to be’做/tso52/+ ‘an officer’官/**k**uã55/→[tso44.ũã54~tsõ44.ũã54]

‘a village’s name’後坑: ‘back, behind’後/au11/+ ‘a ravine, a small basin’坑/**kh**ã55/→[au24.ã54~ãũ24.ã54]

3e The velar and glottal initials will be completely assimilated to [ŋ] when they directly follow the nasal coda in the previous syllable.

‘red mushroom’紅菇: ‘red’紅/aŋ24/+ ‘mushroom’菇/**k**ou55/→[aŋ24.ŋõũ54]

‘guest’儂客: ‘human’儂/naŋ24/+ ‘guest’客/**k**ha11/→[naŋ52.ŋã11]

‘to breathe’: ‘(of the smell) to spread’/tshyen52/+ ‘air, smell’氣/**kh**ui52/→[tɕ^hyøŋ44.ŋũ52]

4.4 No Alternation

For rules **4a** to **4e**, the alternation does not occur.

‘wife’: ‘old’老/lau11/+ ‘a suffix referred to adult women or goddess’/ma33/→[lau22.mã32]

‘deaf’耳聾: ‘ear’耳/hi11/+ ‘deaf’聾/laŋ24/→[çi24.laŋ24]

‘bad people’: ‘bad’/kai24/+ ‘people, human’儂/naŋ24/→[kai24.naŋ24]

‘hemp’油麻: ‘oil’油/iu24/+ ‘hemp’麻/**m**uã24/→[iu24.mũã24~iũ24.mũã24]

⁴ It is from an 80-year-old man during our fieldwork. This word sounds weird because the word ‘to fall’落 is pronounced as /lo24/ without a glottal stop but a glottal stop appeared, seemingly to be added in the word ‘to rain’落雨.

5 Example Words which do not Follow the Alternation Rules

Despite the rules introduced and concluded in Section 4, there are examples which violate the rules:

- 1) /tɔ24.ty24/: ‘to quarrel with somebody’
- 2) /tsin52.tɔʔ11/: ‘very, quite’
- 3) 頭家 /thau24.ke55/: ‘leader of a government, a shop, a company etc.’
- 4) /tan24.to33/: ‘with some problems’
- 5) 電池 /ten24.thou24/: ‘battery’

The words like 1), 2) and 4) are difficult to explore their origin. The reason why the assimilation rules are not applied to this kind of words is hard for us to explain. However, it is safe to say that 3) is a borrowing from Southern Min⁵ and 5) is a newly created word for battery. As Wu & Dai(1961) has pointed out, some borrowings from Mandarin Chinese do not alternate the initial consonant, though there are exceptions.

We have found that the assimilation rules usually are not applied to some other types of compound words with special structure, too. There are also exceptions, however. For instance:

‘insole’/e52.lou11/: The first syllable is ‘shoe’鞋/e24/ and the second one is a verb but never be used as a noun, which means ‘to pad’.

‘fried fish’: ‘fish’魚/hy24/+**phu24**→[hy24.**phu24**]. The first syllable ‘fish’魚 and the second one is not a noun but a verb, which means ‘to stir-fry’. The same word-formation is found in many words like /ou24.**phu24**/ ‘fried taro’, /hɔn24.ny24.**phu24**/ ‘fried sweet potato’ and etc..

This sort of noun formation is clear: to add a verb to a noun to create a new noun.

But, there are some examples which also alternate.

‘saliva protector worn on the breast of kids’: ‘saliva, spittle’/nuã24/+ ‘to prevent something from falling’/ɔ24/→[nũã24.nɔ24]

‘clothes’: ‘body’身/tɿŋ55/+ ‘to wear’/tyeŋ11/→[tɿn.24.n.yøŋ11]

To sum up, the reasons for exception can be 1) borrowing 2) special noun formation, which is formed by adding a verb behind a noun to create a new noun. There are, however, many exceptions which are to be investigated in more details.

⁵ Douglas(1899) documents the word 頭家 thau-ke, which means ‘the head of a firm, business, or shop’ (p.200) and ‘the master of a house or shop’ (p.543). Amoy’s /e/ corresponds to Xianyou’s /ɔ/. From this kind of irregularity, it is reasonable to assume that the Xianyou’s /thau24.ke55/ is a borrowing from Southern Min.

6. Conclusion and further issues

It is said that similar phonological and phonetic atmosphere is found from Ningde Prefecture 寧德市 to Fuzhou Prefecture 福州市(Akitani2018, Chen1998, Akitani&Chen2012, Feng1993). The dialects in the two prefectures are classified as Eastern Min Dialects 閩東方言. Since Tao(1930) created the term ‘initial assimilation’ 声母類化, it is also used to name the similar phenomenon in the Puxian dialect. And furthermore, some scholars hold the view that the Puxian dialect has been influenced by Eastern Min Dialects (Li&Yao2008).

However, the reason why it occurs widely in Eastern Min dialects has not been effectively explained. In addition to that, this is ignored, too: Why some words alternate while others do not? Based on the data listed in this paper, it is arguable that the initial assimilation is not just a kind of phonological and phonetic process but also relates to the borrowings, the word formation process, etc.

To make a clear picture of the initial alternation of the Sinitic dialects, more elaborate data and finer analyses are still needed.

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