TETRASYLLABIC IDEOPHONES IN NORTHEASTERN MANDARIN

AN ABSTRACT

SUBMITTED ON THE TWENTY-NINTH DAY OF NOVEMBER, 2020

TO THE PROGRAM OF LINGUISTICS

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
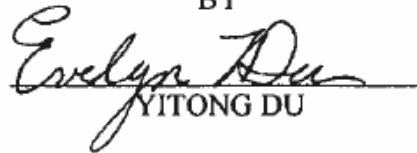
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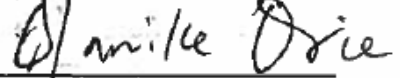
FOR THE DEGREE

OF

DOCTOR OF PHILOSOPHY

BY

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ABSTRACT

Northeastern Mandarin (NEM), a subgroup of Chinese varieties that is spoken in Northeastern China, is an ideophonically rich dialect. Its tetrasyllabic ideophones (T-Ideos) show particular markedness at the phonological, morphological, syntactic, semantic and pragmatic level. This dissertation provides a complete phonological treatment of NEM. In Chapter 3, phoneme inventory of NEM was explored with detailed comparisons between NEM and Standard Chinese. In Chapter 4, NEM T-Ideos were closely examined in terms of their phonological markedness and typology. Following previous research on the classification of Standard Chinese, four major types of ideophones AABB, ABAB and ABCD are analyzed; ABA'B' type is hypothesized in this dissertation. ABCD type ideophones display less phonological duplication yet share a common structure of combining a morpheme unit which represents the 'theme' meaning plus an ideophonic unit that depicts the sensory imagery of the word. In Chapter 5 and 6, syntactic, semantic and pragmatic functions of NEM T-Ideos are examined through examples, with the aim of demonstrating the syntactic flexibility that is peculiar to these ideophones, and special pragmatic usage of ideophones in real-life NEM contexts. At the end of this dissertation, 248 T-Ideos were documented from the field and massive archived documentations including skits and sitcoms, and compiled into a dictionary that is attached as an appendix.

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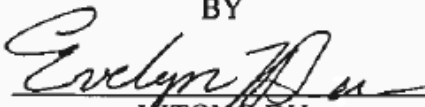IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

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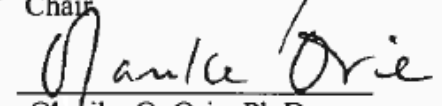*Evelyn Du*
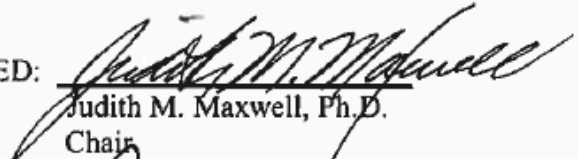
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CHAPTER 1. INTRODUCTION

Ideophones are important elements that constitute a major lexical class in many languages, although they are claimed to be relatively 'uncommon' in Western languages (Childs, 1994). Chinese uses these elements in a variety of ways. Northeastern Mandarin has an especially rich and underdocumented set of these expressives, including four-syllable constructions which set this variant apart. Attempts have been made to document and analyze ideophones cross-linguistically and inter-dialectally due to regained attention in linguistics and anthropology. This dissertation: (1) provides a complete phonological treatment of Northeastern Mandarin (NEM); (2) documents ideophonic tetrasyllabic words that were gathered from massive archived language corpora and documentary collections, including skits and sitcoms; (3) describes their phonology, morphology, syntax, semantics and pragmatics. (4) *The Tetrasyllabic Ideophone Dictionary* is also compiled and attached to the end of this dissertation, which will be useful for the language learners and instructors in Teaching Chinese to Speakers of Other Languages (TCSOL). This research aims to provide ample evidence for further prosodic analysis on the peculiar rhythmic patterns of these forms, and offer additional insights into syllable reduction, syntactic as well as pragmatic functions in the language.

1.1 The Term of *Ideophone*

Ideophones, also known as *onomatopoeia* (Aston 1894; Urtel 1919; Magnus, 2001; Moore, 2015), *mimetic* (Iwasaki, Sells & Akita 2017), or *expressive* (Grammont 1901; Blench, 2011; Williams, 2013) are found in many of the world's languages. *Ideophones* as a group of words that evoke an idea in sound or a vivid impression of certain sensations or

sensory perceptions, have gained renewed attention in recent linguistic talks and journal articles, despite the fact that they used to be mistreated and marginalized as "step-child of modern linguistic science" (Voeltz & Kilian-Hatz, 2001).

Ideophones have proven easy to identify, but difficult to define (Dingemanse, 2012). Clement M. Doke (1935) first contributed to the notion of *ideophone* which was defined as "a vivid representation of an idea in sound…a word, often onomatopoeia, which describes a predicate, qualificative or adverb in respect to manner, color, sound, smell, action, state or intensity" (Doke, 1935: 118; Voeltz & Kilian-Hatz, 2001). Fordyce (1983) described *ideophone* as "a form that conveys an idea or impression, as in certain African languages, by means of a sound, often reduplicated, that suggests an action, quality, manner, etc." (263). Having more than 250 years of research history, it wasn't until 1999 at the International Symposium of Ideophones that linguists have reached a consensus to adopt Doke's definition for this group of words. Dingemanse (2011: 654) defined *ideophones* as "marked words that depict sensory imagery found in many of the world's languages".

Most ideophones, regardless of which language-specific case is being investigated, often tend to be marked by prosodic features at the level of phonology, which makes them stand out from other words in the language. At the semantic level, ideophones are depictive rather than descriptive (Dingemanse, 2013); they are "vocal gestures" (Westermann, 1907: 83); they act out rather than describe (Kunene, 2001: 183), and they perform rather than merely inform (Nuckolls, 1993; 2001). At the morph-syntactic level, ideophones seem to have "little in the way of morpho-syntax" (Childs, 1994:179), although this simple statement may have obscured an interesting puzzle. By the end of 2020, linguists have attempted to categorize and describe ideophones as an intriguing linguistic phenomenon

across all languages in the world. Although documentation of ideophones in a wide variety of human languages has provided some insight for the understanding of these words, a generalized definition for ideophones cross-linguistically has yet to come.

1.2 Ideophones and Idioms in Chinese Languages

In Chinese linguistics, the notion of *ideophone* was referred to via different terms, typically known as *nǐshēngcí* (Meng, 1983; Ma, 1987, 2002; Masuda, 2002; Li, 2006; Wang, 2007), *xiàngshēngcí* (Lü & Zhu, 1951), *zhuàngmàocí* (Yang, 2007), *móshēngcí* (Dan & Liu, 1988), etc. Among these above-mentioned terms, *nǐshēngcí* is the widely acknowledged one that is used when referring to Chinese onomatopoeia in literature (Meng, 1983; Ma, 1987; Liu, 1988; Li, 2006; Liu, 2012).

Based on Dingemanse's definition of ideophone, data being investigated in this dissertation are not limited to onomatopoeia, since the former evoke sensory imagery that involves one or more of the five senses---touch, sight, taste, smell and sound, whereas the latter is generally understood to be words that mimic sounds (Dingemanse, 2011). For example, *pū lēng pū lēng* is used to depict the scene of 'winged or feathered animals struggling against death by desperately flapping their wings'. This is a frequently heard ideophone in Chinese northern dialects that is used to evoke the imagery of a desperate animal struggling for survival. It doesn't only involve the auditory sensory but also arouse the sense of sight. *pū tōng pū tōng* 'stomping sound or heartbeats', on the other hand, is an onomatopoeia that has limited usage to mimicking the sound of heartbeats or falling into water.

The quadrisyllabic ideophones investigated in this thesis are called tetrasyllabic ideophones (T-Ideos) to stand in contrast to four-syllable idioms (Pinyin: *chéngyǔ*). Chinese Mandarin 'idioms' are constructed with meaning-bearing morphemes and formed into compounds that are usually endowed with new semantic meanings. For example, the idiom '*fēng fēng huǒ huǒ*' is constructed by copied morphemes *fēng* which means 'wind' and *huǒ* which means 'fire'. When formed into a four-syllabled compound, its semantic meaning shifts to 'be constantly rushing and getting things done like fire in the wind'.

Standardized four-syllable idioms in Chinese Mandarin are usually composed of four meaning-bearing characters. Unlike four-syllable idioms, each T-Ideo in NEM is comprised of one or more ideophonic units, which may or may not stand alone as a meaning-carrying morepheme, but when constructed to form an ideophone, the resulting word is usually endowed with a semantic meaning to depict sensual scenes with an intensity that cannot be conveyed by other words outside of the class. For example, Northeastern Mandarin ideophone '*cī lā cī lā*' is used to evoke sensations of burning pain on the outer layer of skin. Monosyllable *cī* standing alone can be an onomatopoeia which is used to depict the sound of lighting a match, slow burning fuses or sliding on slippery surface. When *cī lā* formed a disyllabic compound, it is used as an ideophone to arouse the burning sensation while evoking the sizzling and hissing in sound.

1.3 Previous Studies on Chinese Ideophones

Chinese research on Chinese ideophones is mostly concentrated on onomatopoeia, a sub-category of ideophone which depict sounds (Voeltz & Kilian-Hatz, 2001; Akita & Kimi, 2009; Dingemanse, 2012; Van Hoey, 2019). *nǐshēngcí* 'onomatopoeia' has attracted

the attention of Chinese linguists since the 1950s. The earliest description of Chinese onomatopoeia (Pinyin: *xiàngshēngcí*) was in *Modern Chinese Grammar* (Wang, 1943), in which the term *xiàngshēngcí* was introduced and categorized as a new word class in the grammar for the first time. The term *xiàngshēngcí* was later brought forward by Lü and Zhu in *Grammar Rhetoric and Speech* (1951). In mid 1980s, Chinese onomatopoeia was under heated discussion with regard to typology of word classes, whether they carry content meaning or grammatical meaning; whether they form a separate word class that is independent from other word classes including prepositions, pronouns, conjunctions, etc. Different terms were used to refer to this group of words considering their word class typology, such as *xiàngshēng xíngróngcí* (Zhang, 1982), which was brought up based on their resemblance in syntactic functions to adjectives; and *zhuàngmàocí* (Yang, 2007; Li, 2015), which was suggested with the aim of encapsulating not only onomatopoeias but all ideophones in Cantonese.

Research reports on *nǐshēngcí* in Standard Chinese (SC) and regional dialects are numerous, yet mostly descriptive of their morphological structures and canonical typology. Liu (1988) claimed *nǐshēngcí* in SC to be content words, and that their constructions are a process of either affixation or reduplication. Li (2006) in her doctoral dissertation analyzed modern SC *nǐshēngcí* by delving into their canonical typology, grammatical functions, structural types and phonemic features. Wang (2007) made cross-dialectal comparisons on morphological constructions of *nǐshēngcí* in Chinese dialects. Liu (2012) conducted research on SC ideophonic content words and introduced the concept of "ideophonicization" in the process of reduplicating content words to produce derived lexicons. Meng (2012) in

her master's thesis discussed the phonological patterns, syntactic and semantic properties of *nǐshēngcí* in Putonghua[1].

Cross-linguistic and trans-dialectal comparisons of onomatopoeia in world languages were made on the level of interlingual translation, such as Chinese Mandarin versus English (Zhang, 2006), Chinese Mandarin versus Spanish (Casas-Tost, 2014), Chinese Mandarin versus Shanghai dialect (Duanmu, 1999), Hakka and Cantonese (Mok, 2001), etc. Based on previous research on Chinese onomatopoeia, Chinese linguists reached agreement that SC multi-syllable words are compound words; and that although categories may vary, they can be grouped into several different structural classifications as follows, AA, AAB, ABB, AABB, ABAB, ABCD, ABBB, AABC, ABAC, ABCC, AAAA, etc. (Meng, 1983; Ma, 2002; Li, 2006; Wei, 2011; Meng, 2012; Liu 2012), in which letter A, B, C, and D each represents a different character of the multisyllabic word and repeated letters are used to represent the reduplicated character and/or monosyllable (if there is no representative written form for the syllable). Under these categories, AABB, ABAB and ABCD are the three major types of T-Ideos in SC, with only very few examples of ABBB and AAAA type.

Some often cited examples of AABB onomatopoeia can be *pīng pīng pāng pāng* 乒乒乓乓 (bang, sound of striking forcefully) and *dū dū nāng nāng* 嘟嘟囔囔 (sound of murmuring, mubbling), in which A and B each represents a different character in the word, and AA and BB represents two different reduplicated disyllables/characters in the word. Likewise, one typical example of ABAB onomatopoeia is guāng dāng guāng dāng 咣当咣

当 (bang, sound of striking forcefully), in which Aand B each represents a different character and AB represents the unit being repeated. In ABCD onomatopoeia *dīng līng dāng lāng* 叮呤当啷 (sounds of windchimes, percussion instruments, etc.), the four letters each represents a different character and the corresponding sound. In ABBB type onomatopoeia *huā la la la* 哗啦啦啦 (sounds of pouring water, waterfalls, etc.), the two letters each represents a different character 哗 and 啦, 啦 is reduplicated in the third and fourth syllable of the word.

Existing academic literature on relevant topics shows that there has been a dramatic increase over the past 40 years in broader discussions of Chinese ideophones, mostly concentrated on Chinese onomatopoeia, which is subsumed under ideophones that depict sounds, aiming at understanding their morphological structures and canonical typology. In addition, there is a lack of literature about Northeastern Mandarin (NEM) ideophones due to their apparent absence in written texts. Although NEM bears striking resemblance to Beijing dialect in general (Li, 2004), majority of NEM ideophones do not exist in standardized written work therefore are not well-documented. Although the hows and whys are still unclear, only a small amount of NEM ideophones were selected, documented and recognized with standardized Chinese characters in several best-selling and/or most-popular reference books to be shared with both SC and other Chinese dialects, such as '*Xinhua Dictionary*', firstly published in 1953 by the Commercial Press, which includes more than 13,000 words but has only 58 onomatopoeia that vary in length from one to four syllables. Other reference books such as '*Jindai Hanyu Da Cidian*' *[Comtemporary Chinese Dictionary]*, published in 1992 by the Knowledge Press, includes more than 13,000 words as

well but has 148 onomatopoeia that vary in span from one to five syllables. Existed descriptions of NEM ideophones barely touched their linguistic fore-groundings.

Given this research gap, this dissertation tries to encompass as many as possible of the undocumented and documented tetrasyllabic ideophones in NEM, making contributions to not only Chinese linguistics but the wider academic community, notably the phonological study of cross-linguistic texts, analysis of reduplicative patterns, phono-semantics, historical linguistics, sociolinguistics and arguably to cognitive linguistics. *The Tetrasyllabic Ideophone Dictionary* compiled in this research will also be useful in Teaching Chinese to Speakers of Other Languages (TCSOL), considering the increasing popularity of ideophones in interpersonal communications among native speakers and Chinese language learners.

1.4 Methodology

This research includes both qualitative and quantitative methods. Other than the data collected from secondary sources including dialect dictionaries, audiovisual recordings, published articles and papers, archived documents, ideophone tokens were amassed by the author through a number of field observations between fall 2017 to Jan 2020 in Northeastern China with the exception of Liaodong Peninsula. Due to the fact that majority of these ideophones do not have correspondence in the writing system as standardized four syllable idioms do in Standard Chinese, data was recorded and documented in both *Pinyin* and *International Phonetic Alphabet (IPA),* and compiled into *The Northeastern Mandarin Tetrasyllabic Ideophone Dictionary* that will be attached to this thesis as an appendix, which

also sheds some light on the primary syntactic and semantic functions of these ideophone tokens.

This dissertation also addresses the issue of syllable reduction and vowel change in the second syllable by comparing rates of syllable reduction in NEM in two speaking styles: real-life spontaneous speech and read aloud articulation. Three native speakers of NEM (2 females and 1 male) participated anonymously in NEM data-recording. Recorded and documented NEM tetrasyllabic ideophones are grouped, compared and analyzed through Praat acoustic analysis software to determine the vowel qualities of the reduced second syllable. Statistics of vowel length, pitch, formant frequencies (F1 and F2) are measured and scatter-plotted through Excel spreadsheet, with the aim of visualizing the vowel qualities in the reduced syllables.

Using the two research methods allows the author to get a full and in-depth understanding of the linguistic features of these ideophones collected from primary and secondary sources, including archived documents, online audiovisual records, direct and participant observations in the field. The data collected will be helpful in answering research questions such as "what are the phonological patterns of reduplication in tetrasyllabic ideophones in Northeastern Mandarin", and "how is syllable reduction shown in the majority of these ideophones". Results of the study aligned with the hypotheses proposed that reduplication results from prosodic affixation is a weakening process, represented as vowels in the reduced syllable are weakened to a /ə/ (which lost all of their place features) if they are copied (Marantz, 1982; Pulleyblank, 2009; Saba Kirchner, 2010, 2013a, b; Zimmermann, 2019).

1.5 Structure of the Dissertation

In this thesis, four major types of NEM four-syllable ideophones will be closely examined. Following the typological classification from previous research on SC onomatopoeia, AABB, ABAB and ABCD types will be illustrated in this dissertation. In addition to these three attested categories of onomatopoeia, a new category of AA'BB' will be proposed through comparisons. I arrange the content of this dissertation as follows: Chapter II delves into phoneme inventories of Standard Chinese and NEM; NEM vowel, consonant inventories together with their underlying representations are presented systematically; ways of defining NEM T-Ideos and of differentiating T-Ideos from four syllabic SC idioms are demonstrated in this chapter as well. Chapter III provides an overview of linguistic properties of NEM T-Ideos. Chapter IV illustrates the morphophonological construction of major types of T-Ideos: AABB and ABAB types that are constructed through reduplication process, constitution of ABCD type, the herein-proposed AA'BB' type, and reasons why they should be distinguished from ABCD type. Also, in Chapter IV, data is analyzed via Praat acoustics software in order to better present the phonological markedness of ABCD T-Ideos, and how reduced peninitial syllables may suggest a different behavior of schwa in this dialect. Corpus was amassed and archived from NEM vernacular by the author who is a native speaker as well. In Chapter V and VI, syntactic function, semantic and pragmatic applications of NEM T-Ideos will be illustrated with real-life contexts.

CHAPTER 2. DEFINING T-IDEOS IN NEM

2.1 Phonemes in Standard Chinese

Standard Chinese, also known as Modern Standard Mandarin, Mandarin, Beijing Mandarin, Mandarin Chinese, has been the official language in mainland China for a few decades. The similar Taiwanese Mandarin (also known as *Guoyu* or *Putonghua*) is a 'National Language' in Taiwan; Standard Singaporean Mandarin (also known as *Huayu*) is one of the four official languages in Singapore. SC is a standardized form of Chinese based on the Beijing dialect of Mandarin (Duanmu, 2007:4), which is widely used in education systems, national broadcasting, legal documents, etc. although regional dialects are frequently used in local broadcast programs.

Research on Chinese phonology has more than 1,700 years of history, including three major phases, traditional literature before the twentieth century, the standardization effort of the twentieth century and the generative influence since the late 1950s (Duanmu, 2007:27). In previous phonology studies on sounds of SC, such as Chao (1968), Lin (2007:49-50), and Duanmu (2007:24), the nineteen consonants of SC plus the three palatals (twenty-two in total) in phonetic symbols can be represented in the following Table 2.1. All twenty-two consonants except /ŋ/ can occur in onset position; however, a syllable can start without a consonant but with a vowel, which is known as the 'zero onset' in a syllable (Chao, 1968). Only /n/ and /ŋ/ can occur in coda positions, where their oral closure is often incomplete (Xu, 1986; Wang, 1993; Duanmu, 2007). The retroflex series /tʂ, tʂʰ, ʂ, ʐ/ listed in the consonant table may be a distinctive feature of SC speakers from Beijing (Duanmu, 2007). SC speakers from other places including Northeastern China, such as Siping in Jilin

province, Shenyang in Liaoning province, etc. often do not contrast retroflex sounds /ʈʂ, ʈʂʰ, ʂ, ʐ/ and dentals /ts, tsʰ, s, z/. Many SC speakers from these areas replace or exchange retroflexes /ʈʂ, ʈʂʰ, ʂ, ʐ/ with dentals /ts, tsʰ, s, z/, for example, /ʈʂz̩/ 'to cure' is often replaced by /tsz/ 'self' in Siping and Shenyang; /ʂʐ̩/ 'poem' and /sz/ 'silk' are often exchangeable in both places. /ʐ̩/ as a syllabic consonant occurs after retroflexes /ʈʂ, ʈʂʰ, ʂ, ʐ/, for example, /ʈʂʰʐ̩/ 'to eat' and /ʐʐ̩/ 'the sun'. The syllabic consonant /z̩/ occurs after dental /ts, tsʰ, s/, for example, /tsʰz̩/ 'vocabulary' and /sz̩/ 'death'. The two syllabic consonants /ʐ̩/ and /z̩/ do not contrast with each other (Duanmu, 2007).

Table 2.1. Standard Chinese consonant phonemes in IPA

	labial	dental	retroflex	palatal	velar
stop	p, pʰ	t, tʰ			k, kʰ
affricate		ts, tsʰ	ʈʂ, ʈʂʰ	tɕ, tɕʰ	
fricative	f	s	ʂ, ʐ	ɕ	x
nasal	m	n			ŋ
liquid		l			

If excluding the two 'apical vowels'/ʐ̩/ and /z̩/ which were discussed previously under the category of syllabic consonants, there are five common vowel phonemes in SC following the vowel inventory of Duanmu (2007), as is shown in Table 2.2. /i/ is high, front vowel, /u/ is high, back vowels, /y/ is front, high, rounded vowel. Some scholars such as Pulleyblank (1984), and Wang (1993) proposed that /i, y, u/ be glides underlyingly to reduce the vowel inventory, however, Duanmu (2007) argued to keep the three vowels in the phonemic inventory. In this dissertation, the author followed the inventory that includes the five most common vowels as the basis of comparison between SC and NEM vowels.

SC mid vowel /ə/ has several variants and has been under heated debates in Chinese phonology. Researchers suggested that there are several variants of /ə/ and different ways to transcribe them were proposed, such as Duanmu (2007) for [o], Chen (1968) and Cheng (1973) for [e], Fu (1956) for [ɤ], and Xu (1980) for [E] which is higher than [ɛ] but lower than [e] (Duanmu, 2007:37). There are four variants of mid vowel /ə/, according to Xu (1980: 184). They are [o] as in *wǒ* 'I, me', [E] as in *xiè* 'to thank', [ɤ] as in *kè* 'class', and [e] as in *fēi* 'fly'. Chao (1968) and Cheng (1973) do not distinguish [E] and [e]; Wang (1993) does make the distinction, but she writes [e] for Xu 's [E] and [ə] for Xu 's [e] (Duanmu, 2007). Low vowel /a/ has many variants too and again there is a big disagreement on their surface representations among Chinese phonologists. These variants are [A] as in *yā* 'duck', [ɑ] as in *cháng* 'long', [a] as in *shān* 'mountain', [æ] as in *yán* 'salt', and [ɐ] *yuán* 'circle', depending on its phonetic environments.

Table 2.2. Standard Chinese 5 common vowel phonemes in IPA

	Front	Central	Back	Variants
High	/i/ /y/		/u/	as glide [j, ɥ] and [w]
Mid		/ə/		[o], [E], [ɤ], [ə] and [e]
Low		/a/		[A], [ɑ], [æ], [a] and [ɐ]

A diphthong is analyzed as a combination of two adjacent vowels within the same syllable. Diphthongs contrast with monophthongs, aka one pure vowel sound, where the tongue or other speech organs do not move and the syllable contains only a single vowel sound. There is some disagreement on surface values of diphthongs in Chinese Mandarin. However, according to Duanmu (2007), other than the prenuclear glides [j, w, ɥ] and the

retroflex vowel [ɚ], it is considered that there are four diphthongs in SC, made by combining mid or low vowel with high vowels /i/ and /u/. High vowel /y/ does not occur in a diphthong. The four aforementioned diphthongs are /əi/ as in *fēi* 'to fly', /ai/ as in *ài* 'love', /əu/ as in *ōu* 'seagull' and /au/ as in *ào* 'pride'.

Many researchers on SC phonology also list triphthongs, whose underlying representations usually contain the composition of a prenuclear glide and a diphthong. For example, /wəi/ as in *tūi* 'push', /wai/ as in *kuài* 'fast', /jəu/ as in *qiū* 'autumn', and /jau/ as in *qiáo* 'bridge'. However, if not preceded by a consonant in the onset position, the prenuclear glide will stand as the onset followed by a diphthong as the final, such as /wai/ in *wài* 'outside', as suggested by Duanmu (2007); hence there would be no triphthongs in SC if a prenuclear glide is in the onset position. Therefore, following Duanmu, triphthongs are not listed in the phoneme inventory of SC nor NEM in this dissertation, but are considered as a combination of a prenuclear glide and a diphthong.

2.2 Phoneme Inventory of NEM

2.2.1 Consonant phonemes in NEM

NEM is a subgroup of Chinese varieties that is mainly spoken in Northeast China, which geographically consists of three provinces, Liaoning (with the exception of Liaodong Peninsula[2]), Jilin, Heilongjiang but is sometimes also meant to encompass the northeastern portion of Inner Mongolia (Wurm et al, 1987: 35). The map below shows the territorial distribution of NEM in the country of P. R. China, although NEM speakers and users

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[2] Liaodong Peninsula ranges from Dalian in the south to Dandong in the east and their suburban areas, where Jiaoliao Mandarin is spoken. The population of NEM speakers documented in 1987 by Zhimin Zhang was 98,020,000 (Wurm et al, 1987).

may spread across the nation and scatter abroad. NEM shares most of its lexicons and phonemes with the Beijing dialect which is considered the phonological basis of SC. However, NEM phonemes were not systematically documented in previous research.

Map 1. Terrotorial distribution of NEM speakers in China

Minimal pairs are pairs of words in a particular dialect or language that differ in only one phonological element yet have distinct meanings (Jones, 1944). They are used to distinguish two separate phonemes in the language. Minimal pairs give us a better understanding of consonant and vowel phonemes in NEM. Consonants are shown in Table 2.2.1. What is worth mentioning is that, affricates /tʂ, tʂʰ, ʂ/ and fricatives /ts, tsʰ, s/ are free variations that are exchangeable respectively in NEM; to put another way, the fact that the pairs of /tʂ, ts/, /tʂʰ, tsʰ/, and /ʂ, s/ appearing in the same environment will not cause changes in meaning and will not be considered incorrect by native NEM speakers, although young well-educated NEM speakers may be strongly aware of such variation that is sometimes

caused by dialectal or sociolectal reasons. Some examples of exchangeable affricates and

fricatives in NEM can be seen in Table 2.2.1 marked with *.

Table 2.2.1.a Consonant minimal pairs in Northeastern Mandarin

Word 1 & IPA	Word 2 & IPA	Gloss 1	Gloss 2
b̲īng /piŋ/	p̲íng /pʰiŋ/	ice	flat
m̲á /ma/	f̲à /fa/	hemp	hair
d̲uō /two/	t̲uó /tʰwo/	more	carry
n̲áo /nɑʊ̯/	l̲ào /lɑʊ̯/	scratch	flooded
g̲uān /kwan/	k̲uān /kʰwan/	close	wide
k̲uà /kʰwa/	h̲uà /xwa/	hips	draw
j̲ǐ /tɕi/	q̲ǐ /tɕʰi/	self	rise up
x̲ǐ /ɕi/	q̲í /tɕʰi/	wash	ride
x̲ǐ /ɕi/	j̲ī /tɕi/	wash	chickens
z̲ǐ /tsz/	c̲í /tsʰz/	son	farewell
z̲ǐ /tsz/	s̲ǐ /sz/	son	death
c̲ǐ /tsʰz/	s̲ǐ /sz/	here	death
zh̲ǐ /ʈʂʐ/	ch̲ǐ /ʈʂʰʐ/	paper	tooth
zh̲ǐ /ʈʂʐ/	sh̲ī /ʂʐ/	paper	wet
ch̲ī /ʈʂʰʐ/	sh̲í /ʂʐ/	eat	ten
sh̲í /ʂʐ/	r̲ì /ʐ/	stone	sun
ch̲ī /ʈʂʰʐ/	r̲ì /ʐ/	eat	sun
zh̲ǐ /ʈʂʐ/	r̲én /ʐən/	paper	person
*sh̲ī/ʂʐ/	*s̲ī/sz/	wet	tear off
*zh̲ǎo /ʈʂɑu/	*z̲ǎo/tsɑu/	find	morning
*ch̲í/ʈʂʰʐ/	*c̲í/tsʰz/	late	resign

It is also noticeable to many NEM researchers and linguists of Chinese languages

that NEM native speakers also tend to replace retroflex fricative /ʐ/ with approximants

(either glide /j/ or liquid /l/) on onset positions in certain environments, as shown in example (1) below. It is considered a violation of NEM phonological rules when /ʐ/ precedes front high vowel /i/ and /y/ as the onset; therefore, /i/ and /y/ don't appear after retroflex /ʐ/. When preceded by the retroflex consonant /ʐ/, front high vowel /i/ is transcribed as /ʐ̩/, as in /ʐʐ̩/ 'sun'.

(1) /ʐ/ > /j/   /ʐoṷ/ > /joṷ/   *ròu* 'meat'
                   /ʐan/ > /jan/   *rán* 'burn'
                   /ʐə/ > /jə/   *rè* 'hot'
                   /ʐwan/ > /ɥan/   *ruǎn* 'soft'
   /ʐ/ > /l/   /ʐu/ > /lu/   *rú* 'if'
                   /ʐwei/ > /lwei/   *ruì* 'sharp'
                   /ʐwan/ > /lwan/   *ruǎn* 'soft'
                   /ʐan/ > /lan/   *rǎn* 'dye'

In some SC null onset syllables that begin with a single mid-monophthong, such as *è* 'hungry', *ě* 'gross'; those have a low vowel and a nasal coda, such as *ān* 'to install' and *àn* 'to press', *ēng* 'um'; or those have a diphthong final that begins with a mid or low vowel, such as *ài* 'to love', *ōu(zhōu)* 'Europe', or *ǎo* 'rope', older generation NEM native speakers often times tend to insert a denti-alveolar nasal consonant /n/ in the onset position without changing the meaning of the lexical items, as shown in example (2).

(2)   SC   NEM   English Gloss
           ān   <u>n</u>*ān*   'to install'
           àn   <u>n</u>*àn*   'to press'
           è   <u>n</u>*è*   'hungry'
           ěxīn   <u>n</u>*ěxīn*   'disgusting, nausea'
           ōuzhōu   <u>n</u>*ōuzhōu*   'Europe'
           ǎo   <u>n</u>*ǎo*   'rope'

Other than the above-mentioned exchangeable affricate and fricative consonants, NEM shares most of the consonants in SC, as shown in Table 2.2.1.b below. On many occasions the glide /w/ is realized as labial-dental /ʋ/ when in syllable initial positions in natural NEM speech, as also be pointed out by Duanmu (2000) and Li (2004). For example, *jīnwéi* /jinʋɛ/ 'because', *wěiqu* /ʋɛtɕʰʏ/ 'feeling hurt, being bullied', *wēiguòlai* /ʋɛkʰwəlɛ/ 'bend over', etc. /ʋ/ is considered a variant of glide /w/ in this dissertation due to the fact that the realization of labial-dental consonant doesn't cause change in meanings, and therefore is not listed in the consonant phonemes inventory below.

Table 2.2.1.b Consonant phonemes in NEM

	labial	dental	retroflex	palatal	velar
stop	p, pʰ	t, tʰ			k, kʰ
affricate		ts*, tsʰ*	tʂ*, tʂʰ*	tɕ, tɕʰ	
fricative	f	s*	ʂ*, ʐ	ɕ	x
nasal	m	n			ŋ
liquid		l			

SC features syllables with rhotic coda /ɚ/, which can also be massively found in Beijing dialect and some northern dialects, NEM included. For example, /xwaɚ/ 'flower', /njəu/ 'chick, girl', /jɑŋɚ/ 'the look of', /kəɚ/ 'root', etc. There are a few cases in both NEM and SC where underlying representations can be transcribed as /ɚ/ or /aɚ/, such as /ɚ/ 'son', /ɚ/ 'ear' and /aɚ/ 'two, the second', etc. In NEM syllables where rhotic coda is added as a suffix to another morpheme or other morphemes, native speakers tend to omit the nasal consonant /n/ when rhotic coda /ɚ/ is preceded with the sound in spontaneous

speech. Apocope of nasal consonant usually happens with the nasal coda of the previous morpheme being elided, as examples shown in (3) below.

(3)　　　　　_/nɚ/ > _/ɚ/　　　　　Gloss

　　　　　/z̺ənɚ/ > /z̺ɚ/　　　　　'person'

　　　　　/kənɚ/ > /kɚ/　　　　　'root'

　　　　　/pʰitunɚ/ > /pʰituɚ/　　'fall backwards onto buttocks'

　　　　　/ikʰunɚ/ > /ikʰuɚ/　　　'a bundle of'

2.2.2 Vowel phonemes in NEM

It is commonly believed that SC can be analyzed as having five common vowel phonemes /a, i, y, u, ə/, as previously discussed in 2.1; and that precise realization of each vowel is phonetically conditioned. With the aim at a better understanding of NEM vowel phonemes and their allophones in different phonetic environments, massive data were collected from recordings of soap opera and stand-up comedy with NEM native speakers participated (mostly from Liaoning, Jilin and Heilongjiang with the exception of Liaodong peninsula) spanning almost 4 decades from February 1983 to April 2020, and clips were compared in minimal pairs and/or analogous environments to contrast distinct vowel phonemes and to identify allophones of a particular monophthong.

Comparisons of NEM vowel minimal pairs were made in different phonetic environments to determine major vowel phonemes, as listed below in (4-7). /y/ can only be preceded with denti-alveolar consonants /n, l/ and alveolo-palatal series /tɕ, tɕʰ, ɕ/, or standing alone in zero onset syllables, whereas /u/ cannot be preceded with the above-mentioned

alveolo-palatal consonants. When /y/ and /i/, /y/ and /u/ stand alone in a zero-onset mono-syllable, they differ in only one phonological element, i.e. toneme, and carry different meanings.

(4)   /ə/ vs. /a/

/kʰə/ 'thirsty' vs. /kʰa/ 'card'

/tʰə/ 'very' vs. /tʰa/ 'stump'

/ʈʂə/ 'here, this' vs. /ʈʂa/ 'explode'

/mə/ 'smear' and /ma/ 'horse'

(5)   /a/ vs. /i/

/na/ 'where' vs. /ni/ 'you'

/la/ 'be left' vs. /li/ 'standing'

/ta/ 'beat' vs. /ti/ 'bottom'

/pʰa/ 'crawl' vs. /pʰi/ 'skin'

(6)   /i/ vs. /y/

/li/ 'depart' vs. /ly/ 'donkey'

/ni/ 'you' vs. /ny/ 'female'

/tɕʰi/ 'raise' vs. /tɕʰy/ 'marry (masculine)'

/i/ 'already' vs. /y/ 'rain'

(7)   /y/ vs. /u/

/ny/ 'female' vs. /nu/ 'crossbow'

/ly/ 'donkey' vs. /lu/ 'skull'

/y/ 'fish' vs. /u/ 'null'

On the contrary to what was proposed that /ɛ/ was an allophone of open central un-rounded vowel /a/ in SC and some other dialects, open-mid front unrounded vowel /ɛ/ is identified as a phoneme in NEM, as shown in minimal pairs listed in (8), where /ɛ/ always occurs after glide /j/ at the final coda position. Rather than occurring in complementary distributions, /ɛ/ contrasts with /a/ in NEM minimal pairs. When preceded by glide /j/ and followed by a nasal coda /n/, /a/ usually experiences a vowel shift to /ɛ/ as seen in (8) too.

(8)   /ɛ/ vs. /a/   /j/_#

                   /jɛ/ 'wild'   /ja/ 'dumb'

/pjɛ/ 'chock'   /pja/ 'sound of slap'

/ljɛ/ 'split'   /lja/ 'two'

/a/ > /ɛ/   /j/_/n/

/jan/ > /jɛn/ 'salt'

/ljan/ > /ljɛn/ 'linked'

There are cases when /ɛ/ and /ə/ occur in complementary distribution in NEM where /ə/ never appears in the same phonetic environment as /ɛ/ does, however, they are so little in common in phonetic terms therefore are being considered as separate phonemes in NEM, due to the fact that /ɛ/ contrasts /ə/ in some cases that differ in meaning[3]. Examples in complementary distributions and contrastive environments can be seen in (9) below (* indicates a phonologically unacceptable environment).

(9)   /ɛ/ and /ə/ in complementary distributions

/j, ɥ/_#   /jɛ/ 'night', */jə/   /fə/ 'buddha', */jɛ/

/tʰjɛ/ 'iron', */tʰjə/   /hə/ 'and', */hɛ/

/ɥɛ/ 'moon', */ɥə/   /mə/ 'the end of', */mɛ/

/tɕʰɥɛ/ 'missing', */tɕʰɥə/   /pʰə/ 'broken', */pʰɛ/

/ɛ/ and /ə/ in contrastive environments

/tʰə/ 'very'   /tʰɛ/ 'extremely'

/kə/ 'older brother'   /kɛ/ 'you deserve it'

/wə/ 'I or me'   /wɛ/ 'eh, hello'

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[3] In many cases of NEM spontaneous speech, diphthong /ai/ is often monophthongized into /ɛ/ as the process of apocope, during which the final sound /i/ is lost from the end of the word and open back vowel /a/ is shifted to open-mid front position in mouth cavity to form an /ɛ/, which renders /ɛ/ to contrasts /ə/ in many NEM expressions that differ in meaning.

/xwə/ 'stir, blend'   /xwɛ/ 'bad'

/lə/ 'giggle'   /lɛ/ 'come here, come on'

Also, the two syllabic consonants /z̩/ and /ʐ̩/ are different from the vowel /i/ in many ways including their formant frequencies and distributions, although some linguists suggested that the two sounds are in complementary distribution with the vowel /i/, hence should be assigned as allophones of /i/ under the vowel category (Fu, 1956; Wang, 1980; Xu, 1980). However, Pulleyblank (1984), Lin (1989), Wiese (1997) and Duanmu (2007) proposed that the two phonemes /z̩/ and /ʐ̩/ were triggered by empty nuclear slot hence should be treated as syllabic sounds rather than vowels. In some previous studies, such as Fu (1956), Wang (1979), Duanmu (2000), /ʐ̩/ was transcribed as /r/ and /z̩/ was used to fill not only the final syllabic slot but also used to represent /ts/ sound on syllable initial, for example, /zz̩/ 'self' rather than /tsz̩/ 'self'. However, considering that /z̩/ and /ʐ̩/ are triggered by empty nuclear and the nature that they are used to fill the empty nuclear slots occurred after /ts, tsʰ, s/ and / ʈʂ, ʈʂʰ, ʂ, ʐ / respectively, therefore, in this dissertation, /z̩/ and /ʐ̩/ are considered syllabic rather than allophones of high vowel /i/. Comparison on phonetic distribution and examples of the three phonemes /z̩/, /ʐ̩/ and /i/ are made in Table 2.2.2 below.

Table 2.2.2. Comparison of syllabic /z̩/, /ʐ̩/ and high vowel /i/.

	Phonetic distribution	Examples
/z̩/	only after /ts, tsʰ, s/	/tsz̩/ 'gesture', /tsʰz̩/ 'vocabulary', /sz̩/ 'four', etc.

/ʐ/	after /tʂ, tʂʰ, ʂ, ʐ/, and syllable onset	/tʂʐ/ 'straight', /tʂʰʐ/ 'to eat', /ʂʐ/ 'to lose', /ʐʐ/ 'sun', etc.
/i/	NOT after /ts, tsʰ, s/, or /tʂ, tʂʰ, ʂ, ʐ/, or /k, kʰ, x/	/tɕi/ 'chicken', /tɕʰi/ 'strange', /ɕi/ 'west', /pʰi/ 'skin', /tʰi/ 'lift', /ji/ 'clothes', etc.

2.2.3 Allophones of NEM vowels

Allophones of NEM common vowels are not difficult to be found when putting in the same phonetic and tonemic environment. Although transcriptions of the vowel allophones in SC vary somewhat between sources (Duanmu, 2000), what appears in SC may not be found in NEM. For example, [E] in SC denotes a proposed allophone of /ə/ that is higher than open-mid front unrounded vowel [ɛ] but lower than close-mid front unrounded vowel [e]; both [E] and [e] as allophone of mid central vowel /ə/ can barely be found in NEM.

What appears to be allophone of mid central vowel /ə/ in SC may experience vowel quality change in certain phonetic environment and surfaces in free variation with an allophone of a different phoneme without any change in meaning. For example, close-mid back vowel [o] is considered as an allophone of /ə/ in SC, when appears in NEM open syllable after glide /w/ (represented as /w/ _#), [o] can sometimes surface as the open central unrounded vowel [ä], as shown in (10). Depending on regional, dialectal and sociolectal var-

iations, the surface representation of close-mid back rounded vowel [o] in NEM spontane-
ous speech commonly falls within the range of mid and/or open central unrounded vowel;
vowel height varies somewhere between [ə] and [ä] on the IPA vowel chart.

(10) [o] > [ä] / /w/_# SC NEM Gloss

[wo] [wä] 'I'

[tʰwo] [tʰwä] 'Settled! Deal!'

[tʰwolwo] [tʰwolwä] 'spinning top'

[kwo] [kwä] 'to suck'

Open back vowel /a/

Open back unrounded vowel /a/ has allophones [ɑ] and [ä], which is usually pro-
duced at the very low back of mouth cavity in NEM spontaneous speech. Xu (1980) listed
five variants of low vowel /a/ in SC as [A, ɑ, a, æ] and [ɐ]. [A] appears in open syllables
as in [pʰA] 'crawl'; [ɑ] appears in closed syllables and before [u] or [ŋ] as in [tʰɑu] 'escape'
and [tʰɑŋ] 'sugar'; [a] appears in closed syllables before [n] or [i] and not after a palatal, as
in [kʰai] 'open' and [san] 'three'; [æ] appears in closed syllables before [n] and after [j] or
[Cʲ] as in [jæn] 'salt' and [pʲæn] 'side'; and [ɐ] appears in closed syllables, before [n] and
after [ɥ] or [C�male] as in [ɥɐn] 'round' and [tɕᵧɐn] 'be involved'. However, Wang (1993) ar-
gued that the SC low vowel only has values for [back] and [round] when they are long
vowels, and that generally speaking, the low vowel remains low and unrounded but can
probably change its backness. Slightly different from low back vowel /a/ in SC, NEM var-
iant [ɑ] remains low and unrounded but is produced much more backward in the mouth
cavity when in open syllables or followed by velar nasal coda /ŋ/, as shown in (11). Native

speakers of NEM and SC perceived [ɑ] and /a/ as slightly accented sounds with no change in meaning.

(11)   [ɑ]   SC   NEM   Gloss

          [ʂa]   [ʂɑ]   'what'

          [jaŋ(ɚ)] [jɑŋ(ɚ)]   'the look of'

          [na]   [nɑ]   'where'

          [pʰa]   [pʰɑ]   'afraid'

Noticeable only across a dialectal (usually regional, sociolectal and idiolectal) divide, /a/ in NEM open syllables be produced as mid central unrounded vowel [ä][4] in IPA, represented as [ä] / _#, for example, [tʰä] 'he/she/it', [pʰä] 'afraid', [kʰä] 'to skin one's knee', [mä] 'horse', and [lä] 'to be left'. Comparing with the allophone [ɑ] under phoneme /a/, [ä] is an open central unrounded vowel, which is produced at a more central position in the mouth cavity. NEM speakers perceive the two allophones [ɑ] and [ä] in the same phonetic and tonemic environment as accented sounds yet ascribe no difference in meaning.

When /a/ appears in closed syllable before nasal coda /n/, slightly different from SC in which [ɑ] appears most frequently as a variant on this position, the NEM variant of the open back vowel /a/ is produced with laxness that can be transcribed as [ɐ] in IPA, which is near-close, more central and laxer when being produced in NEM spontaneous speech. For example, [ɐn]/ 'install', [lɐn] 'blue', [nɐn] 'press', [xɐn] 'sweat', [kʰɐn] 'watch, look,

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[4] Usually on word boundary (represented as _#) that carries the falling tone, NEM /a/ can also be transcribed as [ɐ], depending on regional, dialectal and sociolectal variations; for example, [ʂwəxwɐ] 'to speak, to talk', [tɐ] 'big', etc. Comparing with open back unrounded vowel [ɑ], [ɐ] is a near-open central vowel produced at a fronter position in the mouth cavity. [ɑ], [ɐ] and [ä] are in free variations and oftentimes perceived as no difference by native speakers.

see', [lwɐn] 'mess, chaotic' and [pɐn] 'to company'. Although depending on regional, sociolectial and idiolectal divides, [ɐ] in some phonetic environments may also surface as mid central vowel [ə], such as [ɐn] > [ən] 'to press', [nɐn] > [nən] 'to press', [lɐn] > [nən] 'tender, chewable', etc.

When in a closed syllable before the rhotic coda /ɚ/, NEM /a/ also tend to be produced with laxness as [ɐ], comparing with it is produced in SC. Examples abound, such as [wɐɚ] 'play', [xwɐɚ] 'loop, circle', [tɕʰwɐɚ] 'circle', [pɐɚ] 'pal, partner, company', [pʰəlɐɚ] 'trash, garbage', etc.

Close back vowel /u/

When considering allophones of the close back rounded vowel /u/, [ɯ] and [ʊ] are the most often heard variations in NEM spontaneous speech. Close near-back rounded vowel [ɯ] appears in NEM open syllables (_#), for example, [ʂɯ] 'tree', [kʰɯ] 'bitter', [wɯ] 'five'. Near-close near-back rounded vowel [ʊ] appears before voiced velar nasal /ŋ/ (represented as C_ŋ), for example, [kʰʊŋ] 'hole', [xʊŋ] 'red', [lʊŋ] 'deaf', etc. Comparing with the close back rounded vowel /u/ in SC, NEM allophones [ɯ] and [ʊ] are more of lax vowels without much muscular tenseness when pronouncing the sound.

Close front vowel /y/

Close front rounded vowel /y/ in SC tends to be produced with laxness in NEM as well. Depending on regional, sociolectal and idiodialectal variations, [y] and [ʏ] both can be frequently heard in NEM. [ʏ] is a near-close front rounded vowel that is more of a lax

/y/. They are in free variation that causes no change in meaning and without being considered incorrect by NEM native speakers, as shown in example (12).

(12)   [y] vs. [ʏ] 'jade'

            [ny] vs. [nʏ] 'female'

            [tɕʰy] vs. [tɕʰʏ] 'marry'

            [ɕy] vs. [ɕʏ] 'continue'

Close front vowel /i/

SC close front unrounded vowel /i/ is produced with much laxness in NEM and is close to the near-close front unrounded vowel [ɪ] in IPA, when in isolation or in word final position; for example, [ɪ] '100 million', [mɪ] 'rice', [tɕʰɪ] 'stand', [pɪ] 'dodge', etc. /i/ and [ɪ] are found in free variations without any perceptual incorrectness by native speakers.

When in word final and being produced to give a specific emphasis in NEM speech, close-mid front unrounded vowel [e] can also be found in majority of cases as a variation of /i/. For example, [tsənməthe] 'so what!', [ʂɑpʰe] 'dumbass', [lɑɕe]'trash', [pʰe] 'fart', etc. As allophones of close front vowel /i/, [ɪ] and [e] can occur in free variation without causing changes in meaning, however, the connotation expressed might vary. The one with [e] in word final is usually with stronger emotions.

Mid central vowel /ə/

Mid central unrounded vowel /ə/ in NEM is a lax vowel which is close to English schwa [ə], and may or may not carry tones in the syllable. Some Chinese linguists such as Fu (1956: 6), Cheng (1973:21), Xu (1980: 184), Wang (1999:38) and Duanmu (2007: 38)

differentiate [o], [ɤ] and [ə] as variants under phoneme /ə/ in SC, together with other two allophones [E] and [e]. Duanmu (2007: 38) also mentioned that "it is especially common to use [ɤ] after labials in north east China", such as both [pʰwo] and [pʰwɤ] 'slope', the two examples he cited in his chapter. However, in this dissertation, it is considered that close-mid back unrounded vowel [ɤ] as the variant of /ə/ in NEM spontaneous speech, whereas [o] is considered as a conditional variant of /ə/ in NEM when it is preceded with a glide or non-labial consonant onset in an open syllable; [E] and [e] are not considered allophones under phoneme /ə/ in NEM.

Cheng (1973: 18) and Duanmu (2007: 38) discussed that the difference of [ɤ] and [ə] after labials lies not so much in vowel quality as in length. If considering vowel qualities like height and roundness, variants [ɤ] and [ə] that appeared in free variation in NEM spontaneous speech sound so similar that native speakers could hardly determine the difference; however, there has always been disagreement with the analysis over underlying representations (UR) of mid central vowel /ə/ in SC, how to transcribe its variants in certain environments and whether [o], [ɤ] and [ə] belong to different vowel phonemes.

Since NEM is so close to Beijing dialect which is the basis of the phonology of standard Mandarin, it is not uncommon to hear [o] in open syllables after labials when NEM speakers intentionally trying to eliminate accents in their speech (especially "modified" read speech) with the purposes of producing standardized language; for example, [pwo] 'crippled', [pʰwo] 'broken', [mwo] 'touch, caress', [fwo] 'buddha', [wo] 'I, me', etc. However, if using immediate scrutiny to examine the phonetic environment where [o] appears, we would be able to see that [o] and [ɤ]/[ə] are in free variation when preceded with a glide onset /w/ in an open syllable, and when preceded with non-labial consonants in

open syllables, as being illustrated in (13); when following labial consonants, native speak-

ers usually replace [o] plus the preceded glide /w/ with either [ɤ] or [ə] in NEM spontaneous

speech, as examples shown in (14).

(13)   NEM conditioned variant [o] / w_#

[wo] vs. [wə], [wɤ] 'I, me'

[wo] vs. [wə], [wɤ] 'nest'

[wo] vs. [wə], [wɤ] 'seat, spot'

[o] and [ɤ]/[ə] in free variation / [-labial]_#

[kwo]	[kwə], [kwɤ]	'pot'
[kʰwo]	[kʰwə], [kʰwɤ]	'spacious'
[ʐwo]	[ʐwə], [ʐwɤ]	'if'
[tʰwo]	[tʰwə], [tʰwɤ]	'explore'
[nwo]	[nwə], [nwɤ]	'move, scoop'
[tsʰwo]	[tsʰwə], [tsʰwɤ]	'dustpan'

(14)   NEM vowel shift: [wo] > [ɤ], [ə] / [+labial]_#

[pʰwo] > [pʰə], [pʰɤ] 'broken'

[pwo] > [pə], [pɤ] 'crippled'

[mwo] > [mə], [mɤ] 'touch, caress'

[fwo] > [fə], [fɤ] 'buddha'

Open-mid front vowel /ɛ/

The reason why open-mid front vowel is transcribed as /ɛ/ and used to contrast mid

central vowel /ə/ and other phonemes is because, in many cases, /ɛ/ and /ə/ are in contrastive

distribution that cause changes in meaning, as discussed in 2.2.2. Li (2004) believed that in phonetic environment *-ian* an *-üan*, NEM /a/ is pronounced with [æ] rather than [ɛ] or [e]. However, [æ] is near-open front unrounded vowel that is produced with a slightly low-ered tongue which is positioned between open-mid vowel and open vowel; and with the mouth opened slightly wider than when [ɛ] is produced. When analyzing both sounds [ɛ] and [æ] in NEM phrases via Praat acoustic software, scatterplot of [ɛ] and [æ] formant frequencies shows that average F1 and F2 of the sounds produced falls into the range of [ɛ] rather than [æ] on formant frequency chart. This will be discussed with more details in Chapter 4. Due to regional divide, [æ] can also be heard in NEM but not often. Therefore, [æ] is considered an allophone of [ɛ].

In a nutshell, NEM vowels tend to be produced with a more relaxed speech muscle movement. Depending on regional, sociolectal and idiolectal divide, variants of each vowel phoneme may vary, but are mostly produced in the lower part of the mouth cavity, with less frontness and more openness of the mouth. NEM common vowels and their variants are listed in the Table 2.2.3.a below. Comparisons of their positions in IPA vowel chart is shown below in Table 2.2.3.b. Comparisons of SC and NEM phonemes is also shown be-low in Table 2.2.3.c, which indicates those vowel and consonant phonemes together with their variants that appear in NEM but not in SC.

Table 2.2.3.a NEM common vowels and variants

	Front	Central	Back	Variants
High	/i/ /y/		/u/	/i/ [ɪ], [e]; /y/ [ʏ]; /u/ [ʊ] [ɯ]
Mid	/ɛ/ /ə/			/ɛ/ [æ]; /ə/ [ɤ], [o][5]
Low		/a/		[ɑ], [ä] or [ɐ]

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[5] Conditioned variant of mid central vowel /ə/, which appears when preceded with glide [w] or non-labial consonant in an open syllable.

Table 2.2.3.b Positions of NEM vowels and variants in IPA chart
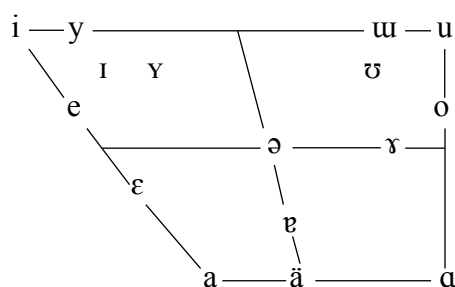
Table 2.2.3.c. Comparison of vowel and consonant phonemes in NEM and SC

	Shared by NEM & SC	Different from SC
Consonants	p, pʰ, t, tʰ, k, kʰ tɕ, tɕʰ, f, z̩, ɕ, x, m, n, ŋ, l	ts*, tsʰ*, tʂ*, tʂʰ*, s*, ʂ*
Vowels	i, y, u, ə, a	ɛ
	j, ɥ, w, ɤ, o, e, ɑ, ɐ	ɪ, ʏ, ʊ, ɯ, æ, ä

2.3 Identify NEM T-Ideos

2.3.1. NEM ideophone and its standardization

NEM ideophones are easily identified and distinguish themselves from other word classes. Many ideophones in writing contexts, onomatopoeia in particular, have the mouth radical '口' in the Chinese characters, for example, 咚 *dong* 'sound of a heavy fall' , 啪 *pa* 'slap sound', 呲 *ci* 'sizzling sound', 哈哈 *hāhā* 'sound of laughing', 吱吱吱 *zhīzhīzhī* 'squeak sound', etc. There are NEM ideophones are not standardized into written forms in all sources, but one can frequently hear them in various colloquial conversations. *Piā jī piā jī* 'noises of loud eating, slapping or applauding' is an example; there is no corresponding written form *piā* in NEM, actually, the phonetic combination of bilabial stop /p, pʰ/and

nasal consonant /m/ followed by glide /j/ and low back unrounded /a/ are not formally documented as standard lexicon in *Cihai[6]* (1979) 1979 script edition published by Shanghai Lexicographical Publishing House and its later revision editions; instead, *Pīnyīn* as the Romanization of their pronunciation, can often be seen in various informal written contexts such as NEM native speaker or user's blog, chat history, text messages, etc. Similarly, monosyllabic onomatopoeia *duáng* 'headbanging sound' does not have a corresponding character. There is no corresponding written form documented in standardized written contexts for the phonetic combination of denti-alveolar /t/ followed by glide /w/, open back vowel /a/ and velar nasal coda /ŋ/. Its *Pīnyīn* can sometimes be substituted for corresponding Chinese characters in many formal and informal occasions when need arises.

The standardization of Chinese characters progresses along the evolution of Chinese languages and scripts. From 1956 when the government of the People's Republic of China promulgated *The Chinese Character Simplification Scheme*, in which 515 simplified Chinese characters and 54 radicals for simplified Chinese characters are selected and documented, to 1964 when *A General List of Simplified Chinese Characters* was released with 2236 simplified Chinese characters included, till 1988 when *The Table of General Standard Chinese Characters* was published by China's State Language Commission and promulgated by the government in June 2013, the standardized simplified Chinese characters have encapsulated 8105 Chinese characters in total divided into 3 categories[7]; however,

---

[6] *Cihai* is one of the earliest large-scale dictionary and encyclopedia of Standard Mandarin Chinese. The Zhonghua Book Company published the first *Cihai* edition in 1938, and the Shanghai Lexicographical Publishing House revised editions in 1979, 1989, 1999, and 2009.

[7] In August 2013 edition released by the State Language Commission, 8105 simplified Chinese characters selected in *The Table of General Standard Chinese Characters* are listed under 3 categories: 3500 characters are designated as frequent under the 1st category; 3000 characters are designated as less frequent under the 2nd category; 1605 characters that are related to proper names and terminology in scientific and/or other special fields. More information can be retrieved at the official website of the central people's government of P.R.C at: http://www.gov.cn/jrzg/2013-08/27/content_2474971.htm

there are still many Chinese characters from different dialects that are not recognized as standard written forms in SC, and NEM is one of the dialects that has a myriad of undocumented words and phrases with ideophones in particular.

At the morphological level, construction of NEM ideophones (despite the count of syllables) has demonstrated some distinctive features that make them stand out from other NEM lexemes. Unlike documented NEM four-syllable idioms that are standardized and shared with SC which are usually composed by four meaningful morphological units, NEM ideophones are constructed with units that usually correlate with less or no semantic meaning at all, and majority of them do not have corresponding Chinese characters. Some are simply onomatopoeia that are used to associate to certain sounds. However, oftentimes the constructed T-Ideo is endowed with new meanings in different contexts. For example, *hēng heng jī jī* is an onomatopoeia that associates to noises of loud humming, moaning and groaning when in pain, when in context of *bié zài nà hēng heng jī jī le, gǎn jǐn de!* (Stop whining over there, hurry up!), the ideophone is used as a verb which means 'to whine'. *wǔ le háo fēng* is an unstandardized ideophone used to depict the madness and insanity of a hysterical person. Except for the second syllable, the rest of the monosyllable morphemes carry meanings when standing in isolation, *wǔ* means 'dance', *háo* means 'to yell' and *fēng* means 'be crazy'. When the four monosyllables are put together, it can be easily associated with the scene of a hysterical person yelling, screaming and flailing with extreme emotions.

2.3.2. NEM T-Ideos vs. SC four-syllable idioms

Four-syllable idioms or *Chéngyǔ* in Chinese languages, are a type of traditional idiomatic expressions that usually consist of four morphemes with four corresponding Chinese characters (Giles, 1873) which do not necessarily reflect duplications in the pattern. They are commonly used in classical Chinese as well as vernacular Chinese writing and spoken language today. SC four-syllable idioms are fossilized expressions that follow the syntactic rules of classical Chinese and surpass the sum of meanings carried by the four characters. These idioms in isolation are often unintelligible even to some native speakers without further explanation on the story, myth, or historical event from which they were derived. It is often necessary to decipher the idiom through contexts. Some examples of SC four-syllable idioms are listed in (15).

(15) Four syllable idiom   Literal translation   Figurative meaning

      láng tūn hǔ yàn   wolf devour tiger swallow   'eating quickly in a messy manner'

      shǒu zhū dài tù   guard plant wait rabbit   'wait idly for a reward'

      zhāo sān mù sì   morning three evening four   'constantly changing interests'

NEM ideophones are easily detected at the phonological level, since there is an obvious doubling in the formation of these words, which makes them rhyme in a peculiar way. See examples in (16-17) below, a monosyllabic or disyllabic ideophone is doubled or tripled to form a multi-syllable ideophone, despite the fact that the monosyllabic ideophone *duāng* in (17) lacks a representational Chinese character in writing.

(16)	Chinese Characters	*Pīnyīn*	Gloss
Monosyllabic	哗	*huā*	'sound of a sud-
Disyllabic	哗啦	*huā lā*	den waterblast or
Trisyllabic	哗啦啦	*huā lā lā*	rainfall'

| Tetrasyllabic | 哗哗啦啦 | *huā huā lā lā* |
| | 哗啦哗啦 | *huā lā huā lā* |

(17)

Monosyllabic	Ø	*duāng*	'sound of thun-
Disyllabic	Ø 噹	*duāng dāng*	der, hammering
Trisyllabic	Ø Ø Ø	*duāng duāng duāng*	walls, heavy
Tetrasyllabic	Ø Ø 噹噹	*duāng duāng dāng dāng*	things fall, smash
			or collapse to the
			floor'

As sketched through descriptions in previous sections, NEM T-Ideo is an ideophone containing four monosyllables that may or may not have corresponding Chinese characters as written forms; this type of word is frequently used in colloquial communications to depict sensory imagery with intensity. The domain of NEM T-Ideo is not limited to four-syllable onomatopoeia but also includes four syllable words that are used to convey the sensation that is aroused in mind through interactions between interlocutors. They are usually comprised of at least one ideophonic unit which may or may not stand alone in the inventory of NEM lexemes. They are a group of words tagged with markedness in phonological, morpho-syntactic, semantic and pragmatic aspects, which makes them stand out from other word classes such as nouns, verbs, adjectives, etc. in the dialect.

Like ideophones in many other languages of the world, NEM ideophones "convey the sensation aroused by external objects, events, or situations. The vivid, intensive, expressive qualities of the ideophones strike one powerfully and immediately, overpowering one with the conviction that they are just the right sounds to convey the idea they

carry"……. "they are vocal images or representations of visual, auditory and other sensory

of mental experiences." (Smith & Kunene, 2002: 65)

CHAPTER 3. LINGUISTIC PROPERTIES OF NEM T-IDEOS

3.1 Phonological Properties of NEM T-Ideos

3.1.1 NEM sound changes and their perception

Because of the similarity shared with Beijing dialect and SC, the study of NEM in previous research has seemed to be less attractive and worthy, therefore it was neglected for decades as a marginal dialect of Mandarin by Chinese linguists (Zhou, 2009). It was since 1990, when NEM was first officially introduced to the nationwide audience through Chinese skits and sitcoms on CCTV New Year's Gala by sitcom actor and comedian Benshan Zhao, that NEM, as the linguistic carrier of its regional humor, was empowered to flourish and thereby earning larger speaker population and gained more attention in academia (Li, 2008). NEM has some phonological and lexical characteristics that often contribute to a strong regional identity.

By October 2008, approximately 150 published papers have covered NEM and its lexicology, dialect/subdialect areas and phonetic features (Li, 2008). In 2018, Institute of Linguistics at Chinese Academy of Social Science published a research report on Chinese language and regional dialects and listed several achievements that are made in different aspects of dialect research, including dialectal phonology, tone sandhi, sound shift, dynamics of language contact, historical chain and continuum of dialects, but none mentioned the practical work in NEM research (CASS, 2019).

Previous NEM studies have covered some regional phonetic features that make NEM T-Ideos stand out from SC ideophones and four-syllable idioms. As previously discussed in 2.2.1, it is noticeable that many NEM speakers don't contrast retroflex series /tʂ, tʂʰ, ʂ/ and denti-alveolar series /ts, tsʰ, s/ as demonstrated in (18).

(18) SC NEM English Gloss

/szswɛ/ /ʂzʂwɛ/, /szswɛ/ 'tear down'

/jaʈʂʰz̩/ /jaʈʂʰz̩/, /jatsʰz̩/ 'teeth'

/ʈʂzʈʂʰz̩/ /tsztsʰz̩/, /ʈʂzʈʂʰz̩/ 'support'

As per the description in Chapter 2, close-mid back rounded vowel /o/ doesn't appear after glide /w/ in NEM spontaneous speech when in zero-onset open syllable where glide /w/ serves as the onset and when labial consonants stand in onset position of the syllable; instead, mid central vowel [ə] or close-mid back unrounded vowel [ɤ] are usually produced as a substitute for [o] in these phonetic environments, as examples shown in (19).

(19) SC NEM English Gloss

/woʂz̩/ /wəsz/, /wəʂz̩/ 'bathroom'

/kəpo/ /kəpə/ 'arm'

/wofwo/ /wəfə/ 'my respectful buddha'

NEM also experiences conditional vowel breaking, aka. diphthongization, due to some unclear reasons[8]. The original monophthong breaks into two segments only when it is triggered by a preceding vowel or consonant in certain phonetic and semantic context. For example, /o/ breaks into /ɛi/ after bilabial stop /p/ in an open syllable and is produced to refer to 'arm'; /a/ breaks into /ja/ after bilabial nasal /m/ or stop /p, pʰ/ in an open syllable; /i/ breaks into /je/ after alveolo-palatal fricative /ɕ/ to describe 'like' and denti-alveolar

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[8] Etymology of many NEM lexicons remain unclear in the research of Chinese languages, however, linguists and dialectologists such as Wurm, Li, and Baumann (1987) believe that NEM adopted a large number of non-native sounds, words and expressions from the Manchu, Mongolian, Russian and Japanese language, due to historical, economic and political reasons throughout the process of language evolution.

liquid /l/ to describe 'bulldozer personality'; /ə/ breaks into either /wə/ after velar fricative /x/ or /au/ after glide /j/ which is used as a substitute for /w/ in open syllables. Examples abound and are shown in (20) below.

(20)   SC   NEM   English Gloss

/kəp<u>o</u>/   /kəp<u>ɛi</u>/   'arm'

/s<u>u</u>ljau/   /s<u>wə</u>ljau/   'plastic'

/ɕ<u>i</u>xwan/   /ɕj<u>ɛ</u>xɛn/   'to like'

/l<u>i</u>xai/   /lj<u>ɛ</u>xɛ/   'aggressive, bulldozing (personality)'

/p<u>a</u>tɕi/   /pj<u>a</u>tɕi/   sound of loud eating noises

/jy<u>e</u>xwei/   /j<u>au</u>xɛi/   'to date, appointment'

/tɕjaux<u>ə</u>/   /tɕjaux<u>wə</u>/   'to stir, blend'

When in syllables that contains glide /w/ or /j/ after a consonant onset, NEM speakers usually don't differentiate the two glide sounds and exchange the two in their speech, which oftentimes will not lead to confusions in comprehending the meaning by NEM speakers, as shown in (21). When glide /w/ is after alveolo-palatal series /tɕ, tɕʰ, ɕ/ preceding nasal coda /n/, glide /w/ is realized as /ɥ/ and is often replaced with /j/, as shown in (21) as well.

(21)   SC   NEM   English Gloss

/ɕɥeɕi/   /ɕjauɕi/   'to study'

/peilj<u>e</u>/   /peilɥ<u>ɛ</u>/   'despicable'

/tʰjauɕ<u>y</u>n/   /tʰjauɕ<u>i</u>n/   'to incite'

/ɕ<u>y</u>nsz/   /ɕ<u>i</u>nsz/   'to think over'

Syncope happens in syllables that contains glide /w/ followed by a low vowel /a/ and a nasal coda in NEM spontaneous speech, where the medial glide is usually omitted without changes in meaning, as shown in (22). Elision of glide /w/ also happens in syllables that ends with diphthongs /wei/ and /wai/ in certain semantic environment, also shown in (22).

(22)	SC	NEM	English Gloss
	/xunl<u>w</u>an/	/xunlan/	'chaotic'
	/l<u>w</u>anʐ/	/lanʐ/	'testicles'
	/n<u>w</u>anhwo/	/nanhə/	'warm'
	/t<u>w</u>ei/	/tei/	'yes, corret'
	/ʂ<u>w</u>ei/	/ʂei/	'who'
	/naŋnaŋtʂʰ<u>w</u>ai/	/naŋnaŋtʂʰai/	'coward, saggy'

Sound changes in syllable final also include certain type of vowel shift in NEM speech, for example, diphthong /əu/ is lowered to open back position /au/, as in /tʂaŋ iməu/ > /tʂaŋ imau/ (the film producer/director), /məuxwa/ > /mauxwa/ ('to plot, scheme, hustle'); however, no vowel shift from /əu/ to /au/ is found in under phonetic and semantic environments.

Reduction or elision also occurs in NEM syllable final position, but it doesn't seem to have formed a systematic sound change rule, as scattered examples collected below in (23).

(23)	Reduction	SC	NEM	English Gloss
	/ai/ > /ɛ/	/lauw<u>ai</u>/	/lauw<u>ɛ</u>/	'foreigner'

/je/ > /ɛ/   /pje/   /pɛ/   'Don't!'

/jan/ > /jau/   /ɕjanxu/   /ɕjauxwə/   'disgust'

Considering sound changes in consonant onset position, as per discussion in Chapter 2 about consonant inventory in NEM, it is often heard that NEM speakers produce labio-dental fricative /v/ when in syllables where glide /w/ stands in the onset position, as shown in (24).

(24)   SC   NEM   English Gloss

/wən/   /vən/   'smell'

/inwei/   /jənvɛ/   'because'

Prothesis also happens in NEM zero onset syllables that have nasal coda, such as /ən/ and /an/, for example, /nən/ 'grace', /nantɕʰwan/ 'safe', etc. Epenthesis sometimes happen and I've heard NEM speakers added a mid-central vowel /ə/ between glide /ɥ/ and nasal coda /n/, for example, /yn/ > /ɥən/ 'faint', /tɕʰyn/ > /tɕʰɥən/ 'group', etc.

NEM speakers oftentimes replace the onset consonant in a syllable with similar consonants, for example, bilabial stop /p/ and /pʰ/ are exchangeable, alveolo-palatal affricate /tʂʰ/ and /ʂ/ are exchangeable, retroflex fricative /ʂ/ and velar fricative /x/ can sometimes be replaceable depending on the phonetic environment, however, the latter is partly due to syllable reduction as a result of the regional divide, as shown in (25).

(25)   Phonetic Form   SC   NEM   English Gloss

/p/, /pʰ/   /tʰʊŋpau/   /tʰʊŋpʰau/   'folks'

/tʂʰ/, /ʂ/   /ʂana/   /tʂʰana/   'instant moment'

/ʂ/ > /x/   /kanʂa/   /kanxa/   'what?!'

As part of the initial consonant substitution, some older generation NEM speakers

also replace retroflex liquid /ʐ/ with either liquid /l/ or glide /j/, as shown in (26).

(26)   Phonetic Form   SC   NEM   English Gloss

/ʐ/ > /l/   /ʐəŋ/   /ləŋ/   'throw'

/ʐ/ > /j/   /ʐən/   /jən/   'people'

When denti-alveolar nasal /n/ is in onset position, it is commonly heard in NEM that

/n/ is replaced with the liquid /l/ in phonetic environment such as /nən/ becomes /lən/ 'ten-

der, soft'; however, the phonetic and semantic environment that triggered the substitution

is limited, and may not be applicable in other circumstances. Some NEM zero onset sylla-

bles that begin with mid or low vowels (monophthong or diphthong) which may or may

not followed by a nasal coda, are often stressed through prothesis, by adding a sound of /n/

on the onset position, represented as $\emptyset V_n$ > $/n/V_n$. For example, /antɕʰɥan/ > /nantɕʰɥan/

'safe', /ən/ > /nən/ 'to press, to button on', /əuʈʂəu/ > /nəuʈʂəu/ 'Europe', /u u au au/ > /u u

nau nau/ 'sound of screaming and yelling', etc.

3.1.2 Tonal properties of NEM and its ideophones

NEM has a tonal system similar to that of the Beijing dialect and SC, considering

their shared tone types and pitch values, except that the value of T1 in NEM is slightly

lower than Beijing dialect and SC, which is usually transcribed as [44] (Song, 1963; He,

1986; Ye, 2013; Cui & Wang, 2019) or [33] (Song, 1963; He, 1986; Jia et al, 2009). In *Tonghua* region of Jilin province, value of T1 is [424] or [313] (Sun, Lu & Li, 1986; Zhang, 2015). T1 value in SC is usually considered as [55]; the second rising tone T2 in SC is usually [35], whereas NEM T2 is approximately [24]; falling and rising tone T3 is [214] in SC whereas NEM is [213]; falling tone T4 in SC is usually [51] but NEM T4 has only [42] in the value (Cui, Kuang & Wang, 2020). Comparisons of tone values between SC and NEM are listed in (27).

(27)	Lexicon	Tone	SC	NEM	English Gloss
	/tɕʰɥan/	T1	[55]	[33]/[44]	'circle'
	/tɕʰɥan/	T2	[35]	[24]	'complete'
	/tɕʰɥan/	T3	[214]	[213]	'canine'
	/tɕʰɥan/	T4	[51]	[42]	'pursade'

Certain types of NEM T-Ideos have displayed some tonal features when mapping out their auto-segmental patterns. It is found that the second syllable of the NEM T-Ideos is usually unstressed and reduced to a light syllable that most frequently carries no tone, which I will elaborate with more details in Chapter 5.

3.2 Morpho-syntactic Properties of NEM T-Ideos

In previous research, Lü & Zhu (1979), Ding (1979), and Liao (1956) suggested that Chinese ideophones should be categorized into interjections considering their positions and syntactic functions in the sentence; Huang and Liao (1979) and Lü (1980) suggested that Chinese ideophones be grouped under adjectives because they were closer to adjectives in

that they sometimes function like adverbials but mostly as attributives in the sentence; Zhu (1982) and Ma (1987) proposed that ideophones should stand alone as an independent word class; Geng (1990) and Wang (1992) claimed that ideophones form an independent word class under the category of content words.

Although huge divergences exist in terms of ideophone typology in Chinese languages, SC ideophones, regardless of the number of syllables contained, are believed to have formed a subcategory of content words among all word classes, considering their morpho-syntactic functions in discourse (Zhu,1987; Liu, 2012). Following footprints of these scholars, NEM T-Ideos together with SC ideophones, are considered under the realm of content words in this dissertation, as opposed to function words such as /xə/ 'and', /ɕjaŋ/ 'towards', etc. that serve important grammatical functions. NEM shares many morphological, phonological, and syntactic similarities with Beijing dialect and is very close to SC (Wurm, Li, Baumann & Lee, 1987). Although NEM ideophones are often rendered as labeling this dialect with regional features at the phonological and morphological level, because of the similarities shared, NEM ideophones should also be categorized under content words as well from a typology perspective.

NEM ideophones are iconic words that exhibit a high resemblance between their forms and meanings, exhibilith sound symbolism. As examples shown in (28), *huā* is a monosyllabic ideophone, to be more specific, it is an onomatopoeia that refers to 'the sound of a sudden blast of water or rainfall'. It is used as an adverbial to depict that the subject vomited a blast of water. *hōng lōng* is a disyllabic onomatopoeia resembling the sound of thunder or heavy things fall onto the floor. Here, it is used to depict that the bookrack fell onto the floor with loud noises.

(28)   *tā*   *huā-di*   *yí xià*   *tù* *le.*
         SUB   IDEO-ADV   ADV   VI PST
         'He/She (like waterfalls)   vomited.'

         shū jià   *hōng long* yì shēng dǎo zài   le   dì shàng.
         SUB   IDEO-ADV   V   PRE PST LOC
         'Bookshelf collapsed to the ground.'

Despite their sound-symbolic features, these ideophones usually take various syntactic functions but are less restricted syntactically. Different parts of speech may be derived from these forms based on the special relations between their forms and meanings exhibited. Some examples are demonstrated in (29 a-d); *huā lā huā lā*, an onomatopoeia resembles the sound of waterfalls or splashes, when being attached to an adverbial marker *di*, it is used as an adverbial to depict the intensity of heavy rainfall. Added with an adjective marker *de, xī xī hā hā*, an onomatopoeia that resembles human laughter, functions as a non-verbal predicate to depict the manner of the subject and how the subject interact with each other. *hēi xiū hēi xiū*, an ideophone that resembles moans during intercourse, can also be used independently as a noun euphemistically referring to the activity of sex. As shown in (29 d), *hōng hōng lōng long*, an onomatopoeia that resembles the sound of thunder or heavy things roll or collapse onto the floor, is used as an independent clause in this case to complete the idea of the sentence through providing specific acoustic details of the scene in which the tall building collapsed with loud thunder-like sounds.

(29)   *a. yǔ*   *huā lā huā lā-di*   *xià* *zhe.*
          3SG IDEO-ADV   V   PROG
          'It's raining waterfalls.'
       b. liǎ rén   *zài yì qǐ*   *zǒng*   *xī xī hā hā-de.*
          SUB   ADV   ADV   IDEO-ADJ

'The two together always laugh.'

c. *tā mǎn nǎo zi xiǎng de dōu shì <u>hēi xiu hēi xiu</u>.*
3SG ADV   V   ADV COP IDEO-N
'All he/she thinks about is sex.'

d. *<u>hōng hōng lōng lōng</u>, dà lóu jiù zhè me tā. le.*
IDEO   SUB ADV V PST
'Fagroon klubble klubble, the tall building collapsed.'

   Instances above show an exceptional morphosyntactic property of NEM ideophones, that not only can they stand alone as an independent clause within a sentence (like interjections, such as 'ouch'), but can also combine with different parts of speech markers to form derived words that function as adverbs or adjectives. Ideophones that mimic sounds have shifted meanings when attached with different markers, as listed in (29 a), the derived adverb *huā lā huā lā di* carries the connotation of 'stopless' on top of its original meaning, whereas when being attached with an adjective marker, the onomatopoeia *huā lā huā lā de* emphasizes the loudness and intensity of the sound. Things being equal for the example in (29 b), when affixed with an adjective or an adverb marker, the connotation of T-Ideo *xī xī hā hā* has shifted to focusing on 'the attitude of not being serious, always being playful and informal'. I will elaborate syntactic functions of T-Ideos with more details later in Chapter 6.

CHAPTER 4. MORPHOPHONOLOGICAL CONSTRUCTIONS OF

NEM T-IDEOS

4.1 Classification of T-Ideos in SC

Chinese languages are often referred to as monosyllabic language, which means, each character corresponds to a single syllable in one context, such as /ɕɥe/ means 'to study', /ɕjau/ means 'learning facility'. Modern Chinese is believed to be abundant with compounds that consist of multiple syllable roots (Packard, 2000:78; Dong, 2004; Arcodia, 2007). For example, disyllabic compound /ɕɥeɕjau/ which means 'school', is the combination of the two formerly mentioned monosyllabic roots. Compounds with three or four syllables should be commonly seen in modern Chinese languages, for example, /ɕjau nei wai/ 'on and off campus', /ɕɥe ɕjau ʂəŋ xwo/ 'school life' and /ɕɥe ɕjau ɕin wən/ 'school news', etc.

Likewise, ideophones are compounds that consist of monosyllabic ideophonic roots. For example, interjection /ji/ mimics the sound of human voice used to express questioning or doubts; /ja/ is an onomatopoeia used to express surprise, fear, alarm or excitement. /jija/ is a disyllabic ideophonic compound that is commonly used in baby talk and babbling; /ji ji ja ja/ is a T-Ideo compound that is often used to depict the stage of learning a language in which infant makes gooing and cooing sounds or a child produces his/her first words. This is an AABB T-Ideo, in which reduplicating is salient as the first two syllables as well as the last two are exactly the same. As Downing (1998, 2000, 2006), Inkelas & Zoll (2000, 2005), and McCarthy & Prince (1994a, 1999) in different articles stated that reduplication is often best considered a type of compounding, AABB T-Ideo /ji ji ja ja/ is such a com-

pound that is constructed with reduplicated syllables. However, not all T-Ideos are con-
structed in the same way. I will demonstrate the formation of the four major types of T-
Ideo in separate sections.

4.2 Four Major Types of NEM T-Ideo

NEM T-Ideos "mark" themselves out in many different ways at the phonological,
morphological and syntactic level. However, the fact that the word class of ideophones on
the whole can be characterized as "marked" does not imply that every single ideophone
should be "marked" in the same way or to the same extent (Dingemanse, 2012). Linguists
have been making long-standing efforts on typology and characteristics of Chinese ono-
matopoeia. Cross-linguistic and inter-dialectical studies on patterns of morphological re-
duplicated Chinese words abound. Different ways of classification resulted in a fine-
grained taxonomy on the patterns, such as AA, AABB, AXAB, ABAB, ABC, ABCD, and
so forth, where A, B or C represents a syllable in a morpheme or a morpheme unit, whereas
X represents a formative element with fixed segmentism (Hsieh, 2017; Hu, 2017). Typical
NEM T-Ideos fall into three major types of patterns that fit four-syllable idioms/ideophones
in SC; they are AABB, ABAB, and ABCD. NEM T-Ideos also features a morphophono-
logical pattern of AA'BB' which will be discussed with details in the latter half of this
chapter. Examples of four major types of NEM T-Ideo are listed in (30) below.

(30)

Type	NEM T-Ideo	English Gloss
AABB	/ku ku tɕʰjəu tɕʰjəu/	take actions under the table.
	/xəŋ xəŋ xa xa/	attitude of fudging.

ABAB	/pu liŋ pu liŋ/	flashy sparkle jewelry or orna-mented accessories, borrowed from English '*bling-bling*'.
	/kʰə ʈʂʰən kʰə ʈʂʰən/	to humiliate/embarrass someone.
ABCD	/ʂa pə la tɕi/	Stupid or moron-like, disrespect-ful denotation.
	/xei pə lʊŋ tʊŋ/	Awfully dark.
AA'BB'	/pʰiŋ liŋ pʰaŋ laŋ/	pump or bump sound.
	/ɕi li xwa la/	sound of water splashes, or the state of being broken apart or not able to hold together.

4.3 Total Reduplication in AABB & ABAB Type T-Ideos

Reduplication is a morphophonological process in which all or a part of a root, stem, word or phrase as the base is copied to form a new word in order to convey some form of meaning (McCarthy & Prince, 1995). Total reduplication involves repeating all of the Base in its entirety but the size of the unit being copied may vary in different languages. Partial reduplication involves three basic patterns, foot-sized, syllable-sized, and segment-sized reduplication (Gafos, 1998; Spaelti, 1997; Urbanczyk, 2017). In AABB and ABAB type, the identity of the base and the relevant constituent that is copied (aka. the Reduplicant) are not difficult to locate. As shown in (31), constituents in A and B positions are being copied to form an AABB ideophone. In total reduplication of AABB, each monosyllabic ideophone is the basic unit of ideophonic root (Dong, 2004; Liu, 2012), hence is copied fully to form the ideophone. The entire single syllable together with its tonal features are repeated in adjacent positions. It is a phonologically defined syllable-size reduplication that can be represented as AB > AA$_{RED}$BB$_{RED}$.

(31)

A, B bases	AA_{RED}BB_{RED}	English Gloss
biě, xiā	/pjɛ pjɛ ɕja ɕja/	lack of air or stuffing as of balls, toys, plants or fruits; too skinny (of a person).
bū, lēng	/pu pu lən lən/	not obedient, struggling from dying like birds, poultry, etc.
cī, lā	/tsʰz tsʰz la la/	burned painful skin, shimmering sound
dī, dā	/ti ti ta ta/	sound of clock ticking or water dripping
duāng, dāng	/twaŋ twaŋ taŋ taŋ/	sound of hammering walls
dí, gū	/ti ti ku ku/	a murmur of voices; to murmur
jí, gū	/tɕi tɕi ku ku/	chit chat in a murmur of voices

Reduplication in ABAB type is different from AABB type in that the minimal unit (base) copied is a meaning-bearing ideophonic compound consisting of two monosyllables. Thus, AB is a disyllabic ideophonic compound to be copied in order to form the ABAB T-Ideo. Therefore, to a certain extent, duplication in ABAB type is a morphologically defined disyllable-sized reduplication. Its reduplicating process can be alternatively represented as AB > AB[AB_{RED}], in which AB_{RED} represents the reduplicant of the base AB, as shown in (32), in which * represent a regional variant of this ideophone.

(32)

AB[AB_{RED}]	AB base	Gloss of the Base
/au nau au nau/	āo nāo	sudden high-pitched screaming or
/au lau au lau/	āo lāo*	yelling.
/paŋ laŋ paŋ laŋ/	bāng lāng	sound of punching with a hard or stiff thing.

/pja tɕi pja tɕi/	biā ji	loud noises of eating toothless or smoking pipes.
/tsʰu ljəu tsʰu ljəu/ /ʈʂʰu ljəu ʈʂʰu ljəu/*	cū liū chū liū*	to move across a slippery surface (eg. ice).
/tau ʈʂʰʐ tau ʈʂʰʐ/	dáo chi	act of combing, putting on makeup or dressing up.
/kəu ləu kəu ləu/	góu lou	leaning forward (of the body), hunch-backed (of a skinny person), not straight or stretched (of something).

Based on comparisons and observations over T-Ideo tokens collected from archived documents and visual materials, it is found that 'color' and 'flavor' T-Ideos usually follow the formation process of ABAB type, during which a disyllabic morpheme is copied to fit the pattern, as seen in (33) and (34). 'Color' T-Ideos are often used to emphasize the richness and intensity of distinct colors. For example, *huáng* means 'yellow', *jiāo huáng* is a disyllabic ideophone that means 'rich yellow'. It is often duplicated to fit the ABAB pattern *jiāo huáng jiāo huáng* to emphasize the extreme richness of the color. Other things being equal, 'flavor' T-Ideos tend to repeat the entire disyllable AB to form a negative connotation of 'overly, intolerably or sickeningly'. As shown in (34), *kŭ* means 'bitter', *gà kŭ* is the disyllabic ideophone that means 'intolerably bitter'. In NEM, it is commonly reduplicated into *gà kŭ gà kŭ* to emphasize the intolerable degree of bitterness.

(33)   Color T-Ideos:

AB	AB[AB$_{RED}$]	Gloss
jiāo huáng	/tɕjau xwaŋ -RED/	rich yellow
jiāo lǜ	/tɕjau ly -RED/	rich green
què qīng	/tɕʰɥe tɕʰiŋ -RED/	blackish purple
què zǐ	/tɕʰɥe tsz -RED/	bluish purple

sà bái	/sa pai -RED/	pale white
wà lán	/wa lan -RED/	rich blue, aquamarine
yóu hēi	/jəu xei -RED/	shiny black
tōng hóng	/tʰʊŋ xʊŋ -RED/	rich red

(34)　　Flavor T-Ideos:

AB	AB[AB_RED]	Gloss
hōu tián	/xəu tʰjɛn -RED/	sickeningly sweet
hōu xián	/xəu ɕjɛn -RED/	sickeningly salty
jiáo suān	/tɕjau swan -RED/	overly sour
līu suān	/ljəu swan -RED/	overly sour
pēn xiāng	/pʰəɚ ɕjaŋ -RED/	fragrant
nè chòu	/nə tʂʰəu -RED/	sickeningly stinky
gà kǔ	/ka kʰu -RED/	intolerably bitter

4.4 Template Analysis of ABCD T-Ideos

ABCD type is different from other types of NEM ideophones in that their formation display less reduplication tendency but are usually constructed with four different mono-syllables which may or may not have corresponding standardized Chinese characters, as the term "ABCD" suggested. There is usually no resemblance among the four syllables and the corresponding Chinese characters, if there are any. Concerning the construction methods, Zhu (1982) proposed that all ABCD type 'onomatopoeia' are formed by redupli-cating CD unit (the base) to the left with some adaptations in their finals. Ma (1987) and Ran (2009) suggested binary branching on all SC four-syllable onomatopoeia and con-cluded that all ABCD ideophones are derived from CD Base rather than AC or BD. Their most-cited examples were /tɕi li ku lu/ which means 'speaking unintelligible language or

murmuring', /pʰiŋ liŋ pʰaŋ laŋ/ which means 'loud noise of hammering', etc. This research

separated ideophones in similar patterns from ABCD type and hereinafter will discuss their

patterns under the proposed AA'BB' type.

First, let's look at some common examples of ABCD type that are defined in this

dissertation in (35 a-e). There seems to be no phonological reduplication and none of their

written forms (if there is any) should look the same. However, could there be morpholog-

ical doubling or possible semantic overlap? Each ideophone in (35) can be dissected into

smaller units that are either morphemes or ideophonic units. Morphemes are meaning-bear-

ing syllables. Ideophonic units are usually syllables added to complete the meaning of the

morpheme. In an ABCD ideophone, an ideophonic unit can be an ideophonic foot and/or

an ideophonic affix. An ideophonic affix is usually a semantically empty monosyllable that

is infixed as a result of fitting to the phonological pattern; whereas an ideophonic foot is

often disyllabic that carries the meaning to intensify or depict sensory imagery of the mor-

pheme.

(35)   a. /jaŋ-lə-ɚ ʈʂəŋ/

              to head up-IDEO.FT-look retarded

              'absent-minded; feeling spacey'

         b. /ɕi-tʰaŋ-xwa la/

              diluted-to dribble-sound of waterfall

              'to dribble; fail to hold up together'

         c. /ʈʂəu-pə-la tɕi/

              wrinkle-IDEO.FT-ish

              'wrinkled in a repulsive way'

         d. /xei-lə-ku tʊŋ/

              black-IDEO.FT-sound of bumping against something solid

              'insanely dark surroundings which hardly visible'

         e. /kə jəŋ-pa la/

repulsive-like that

'repulsive looking; disgusting, loathing'

(35d) /xei-lə-ku tʊŋ/ is an example: /xei/ is the morpheme which means 'black'. /-lə/ is a commonly seen ideophonic affix that appears in many ABCD ideophones. /ku tʊŋ/ is a disyllabic ideophonic foot to mimic the sound of something bumping against a solid surface. The two monosyllables in this ideophonic foot are onomatopoeia when standing alone, but their meanings are quite ambiguous and vary widely when occuring in different contexts. When forming an ABCD ideophone through semantic overlapping, the meaning of /xei/ and that of /ku tʊŋ/ evoke the idea of insanely dark surroundings where nothing can be seen yet bumping noises can be frequently heard. /ʈʂəu-pə-la tɕi/ in (35c) is another typical example, in which /ʈʂəu/ is the only morpheme that carries the meaning of 'wrinkled'. /-pa/ is another commonly seen ideophonic affix. When it is combined with ideophonic foot /la tɕi/, the derived constituent has developed a derogatory connotation of 'an objectionable look of'. Through semantic overlapping between the morpheme and the ideophonic unit, this ideophone is used to express a derogatory attitude when talking about something wrinkled in an ugly way.

Etymology of these ABCD ideophones remains unclear. Some suspected that they were from a Mongolian language (Zhu, 2001); some proposed that they are originated from Manchu languages (Wang, 2007); and others believed that they are inflected from ABC adjectives in Chinese languages (Yang, 1994). It is still interesting to see that there is a big number of ABCD T-Ideos that contain ideophonic unit *-ba lā-, -bā lā, -le bā-, -le bā jī* and *-ba lā jī* in syllable medial or final positions. Some typical ABCD ideophones are listed in (36 a-e) with regional variants marked with *. These ideophonic units usually carry no

meanings and cannot stand alone as words in NEM lexicon. Only when combining with an adjective morpheme, the ideophonic unit has embedded with a negative connotation of 'an unpleasant look of or in a disrespectful manner of'. For example, *-le bā jī* and *-ba lā jī* are exchangeable ideophonic units carrying the denotations of 'have the look of, like that, sort of or kind of'. They are often used after a monosyllabic adjective morpheme to spawn derivational ideophones in NEM. As shown in (36 e), /xu/ is a monosyllabic adjective morpheme which means 'relentless, unthoughtful and bold'. Added with the ideophonic unit *-le bā jī*, the morpheme became a T-Ideo that is used to express the derogatory attitude towards a relentless, unthoughtful and bold person. Other things being equal, /njɛn/ means 'sticky', together with ideophonic unit *-ba lā jī*, they formed a derived ideophone that is used to evoke the idea of 'annoyingly sticky'. /njaɚ/ means 'constant lack of energy, sedentary and inactive'. When combined with *-le bā jī* or *-ba lā jī*, it became a T-Ideo that is used to express the critical attitude towards someone who is always sedentary, dispirited and in constant lack of energy.

(36)

a. with ***-ba lā-***	English Gloss
ruǎn ba/bu*lā tā	overly soft, cannot stand, incompetent
hú ba/bu* lā qū	overly burned, inedible, indiscernible
hēi ba/bu* lā xiā	insanely black or dark surroundings
b. with ***-bā lā***	
fèi jìn bā lā	extremely strenuous, incompetent
nào xīn bā lā	very upset, annoyed, disturbing
gè ying bā lā	causing distaste, revulsion or aversion, disgusting
biē qu bā lā	having chest tightness caused by stress, anger, frustration or depression and unable to relieve.

gù dong bā lā	being a weirdo or a pain in the ass, with bad inter-personal skills

c. with *-ba lā jī*

hǔ ba lā jī	relentless like, unthoughtful-ish, or bold-ish
shǎ ba/bu* lā jī	objectionably stupid, moron-like, retarded
nián ba/bu* lā jī	annoyingly sticky
hēi ba/bu* lā jī	disgustingly black or dirty

d. with *-le bā-*

dè le bā sōu	having objectionable look of getting carried away
mái le bā tāi	disgustingly dirty
shuǐ le bā chā	overly diluted, loosing sincerity or credibility
hǔ le bā chāo	unthoughtful, bold or relentless
hú lā ba qū	overly burned, inedible, indiscernible

e. with *-le bā jī*

hǔ le bā jī	unthoughtful, bold or relentless
lài le bā jī	showing objectionable look of being lazy or pro-crastinating
niār le bā jī	lack of energy, robustless, dispirited
shǎ le bā jī	objectionably stupid, moron-like, retarded
lèng le bā jī	in a state of stupefied, distracted or zoning out

Note that *-le bā-* can be infixed into a disyllabic adjective morpheme to form a T-Ideo, as shown in (36 d), the ideophone is thereby obtaining an intensified negative connotation when used in daily communications. /tə səu/ means 'get carried away'. T-Ideo /tə lə pa səu/ acquires an intensified meaning of 'showing objectionable look of getting carried away' when infixed with *-le bā-*. Other things being equal, /mɛ tɛ/ 'dirty, dusty' and /xu ʈʂʰau/ 'relentlessly bold' can both spawn a T-Ideo with infixation *-le bā-*. Their semantic meanings are all intensified in a negative way. When *-ba lā-* appears in the syllable medial

position as an infix (as opposed to being infixed in syllable final positions), it is exchange-able with *-le bā-*. For example, /ʐwan pə la tʰa/ is often heard in vernacular NEM as /ʐwan lə pa tʰa/. /xu pə la tɕʰy/ is often alternatively produced by native NEM speakers as /xu lə pa tɕʰy/. However, when *-le bā-* appears in BC position as an affix, in many cases it cannot be replaced with *-ba lā-*. /tə lə pa səu/ as an example, if replaced the infixation with *-ba lā-*, the outcome is proved to be ungrammatical yet comprehensible. NEM native speakers tend to cringe when hearing it.

It is also worth mentioning that ideophonic foot *-ba-* and its variant *-bu-,* as well as *-le-* and its variants *-la-, -lu-, -li-,* appear in the second syllable of majority ABCD T-Ideos, as listed separately in (37) and (38). As mentioned previously, the affix per se is not a meaning-carrying unit, but is inserted to fit the prosodic pattern of the ideophone and often experiences a reduction into untoned schwa, represented as /ə/ in IPA. On the contrary, if a morpheme appears in the second syllable, there will be no phonological change at all. The reason why *-ba-* and *-le-* and their variants are seen as an ideophonic affix lies in that they perform mainly phonological functions rather than morphological ones in the con-struction of ABCD ideophone. The morpheme in A position is usually monosyllabic ad-jective, constituents in CD positions are ideophonic foot to complete the meaning of what morpheme on A position may carry. Construction of this type is rather formulated that can be represented as a morpheme followed by an ideophonic affix and a foot. Take /tɕjɛn pə tsʰz ljɛ/ as an example, /tɕjɛn/ is a morpheme which serves as a vulgar slur to describe a 'bitchy scumbag'; /tsʰz ljɛ/ is an ideophonic foot which is used to depict the facial look or appearance of the person; whereas *-ba-* is semantically empty but is infixed for prosodic reasons.

(37)

-ba- or *-bu-*	English Gloss
gān <u>ba/bu</u> lā xiā	something really dried-out that may release bad tastings in the mouth
gā <u>ba/bu</u> liū cuì	sound of cutting something out or breaking things in one strike, or the manner of getting something done at the first take
guāng <u>ba/bu</u> cū liū	being naked without any coating or covering
hēi <u>ba/bu</u> cū liū	disgustingly black or dirty
hēi <u>ba/bu</u> liū qiū	disgustingly black or dirty
hú <u>ba/bu</u> làn kěn	overly burned or toasted without a good look
huá <u>ba/bu</u> liū diū	slippery like walking on icy surface
jiàn <u>ba/bu</u> cī liē	being a disgusting bitchy scumbag
niān <u>ba/bu</u> cū liū	lack of energy, robustless, dispirited
pò <u>ba/bu</u> lōu sōu	shabby, indecent, broken clothing
suān <u>ba/bu</u> līu dīu	intolerably sour
xī <u>ba/bu</u> lēng tēng	overly diluted, losing sincerity
xì <u>ba/bu</u> liān tiān	tall but skinny, like a standing pole
zhí <u>ba/bu</u> lēng tēng	tense and straight without curve or bend (of body), the way people stare

(38)

-le-, -li-, -la- or *-lu-*	English Gloss
dí <u>le/li</u> suàn guà	being hanged like a braiding of garlic
hēi <u>le/lu/la</u> gū dōng	insanely dark, almost invisible
hú <u>lu/le</u> bàn piàn	carelessly cleaning or drawing, roughly wiping
jí <u>le</u> guǎi wān'r	zigzagged, marked with random sharp turns and bends
nián <u>le</u> gu zhuā	disgustingly sticky

pí le pū lōng	dumping things into water, struggling on the surface of water
shuǐ le bā chā	overly diluted, losing sincerity or credibility
tí le tāng lāng	too saggy (the way wearing clothes), wearing dragging pants
tū lu/le fǎn zhàng	random changes of mind so that things cannot be done as planned
tū le guāng jī	barren, bald
wǔ le háo fēng	hysterical, acting like an insane person
xī le guāng tāng	overly diluted or watered
xí le mǎ hā	being careless and forgetful

Besides the above-mentioned T-Ideos with *-le-* and *-bu-* foot, and their variants *-la-, -lu-, -li-,* and *-ba-,* some other commonly seen ABCD types are cited in (39 a-f). One of the most common features shared is that each ideophone should consist of a morpheme unit and ideophonic unit. For example (39 a), *bí ti* 'nasal mucus' is a morpheme unit that carries the core meaning of the word, and ideophone foot *lā xiā* is used to depict the state of nasal mucus being gooey, sticky and stretchy. The meaning of the ideophone foot *lā xiā* may vary in different combinations, but serves as a complementary to enhance the idea of the morpheme. See *xuě/xiě* hu lā xiā* 'bloody scene' for a comparison, *lā xiā* in this case is used to depict the idea of blood being spilled everywhere. However, *lā xiā* cannot stand alone as a word in NEM lexicon.

(39) a. *bí ti-lā xiā*

    nasal mucus-state of being gooey, stretchy, scattered, etc.

   'the objectionable look of a snotty face.'

    b. *hú zi-lā chā*

        facial hair-state of uncleanliness

        'dirty look of a not clean-shaven face.'

    c. *dí liu-suàn guà*

       state of hanging-garlic braids

       'a bundle of things hanging on the neck or shoulders, too many ornaments.'

    d. *diǎo er-lāng dāng*

       male genital-quality of being lax

       'someone who is being lax, indecent dressing.'

    e. *hū chi-dài chuǎn*

       sound of puffing-catch breath

       'labored breathing.'

    f. *lèi yǎr-bā chā*

       watery eyes-sound of eye blinking

       'the look of teary eyes to arouse sympathy.'

4.5 Phonological Representation of AA'BB' T-Ideos

The proposed AA'BB' type is a frequently heard type of ideophone in which segments are copied within the onset-rhyme binary branching. The peculiar way of repetition distinguished themselves from other multisyllabic ideophones, especially ABCD type. Previously categorized under ABCD type by Meng (1983), Ma (1987) and Wei (2011) who believed that no reduplication was shown in this type, ideophones such as /pʰi li pʰa la/ 'sounds of fire cracking, firecrackers, face slapping or applause' are grouped into AA'BB' type in this dissertation considering the displayed segmental reduplication in the construction.

Let's first look at some AA'BB' examples in (40) for a taste of their particular phonological features. It is not difficult to observe that they are mostly segmentally identical. Here I cite again /pʰi li pʰa la/ as an example; its first two syllables rhyme in final /i/ and

the last two syllables rhyme in /a/. Onset consonants in A and A' positions /pʰ/ and B and B' positions /l/ are identical. /tʰi li tʰu lu/ 'slurping sound' rhymes in syllable final /i/ and /u/. The onset consonants on A and B positions /tʰ/ and those on A' and B' positions /l/ are the same. Other AA'BB' T-Ideos work in the same way, their onset consonants are mostly identical, with the rhyme in A and A', B and B' positions repeated at the segment level. Because the shared rhyme forms the nucleus of the syllable where sonority reaches the peak according to the Sonority Sequencing Principle (SSP, Selkirk, 1984), which makes the T-Ideo peculiar in prosodic patterns, the template AA' is used in this dissertation to represent the first two syllables that contain shared rhyme and BB' is used to represent the latter two syllables that share the rhyme.

(40)

AA'BB' T-Ideos	Gloss
/pʰi li pʰa la/	sound of popping firecrackers, explosive sounds, face slapping, applause, rainfalls, etc.
/tʰi li tʰu lu/	loud sound of slurping, sucking up noodles, or sucking up snot, etc.
/pʰiŋ liŋ pʰaŋ laŋ/	sound of awkward movements, things falling to the floor, smashing plates, striking metal instruments, etc.
/ti li tu lu/	the overload state of hanging bundles, over-decorated.
/tiŋ liŋ taŋ laŋ/	sound of wind-bells/windchimes, striking suspended percussion instruments

A flurry of debate sparked concerning whether the particular pattern in this type of T-Ideos should be accounted for as reduplication. Yin (1990) found that many SC onomatopoeia contain -*li*- affix in the second syllable, and categorized them as A-*li*-BC type. On the other hand, Zhu (1982) believed that this type of T-Ideos are reduplicated ideophone; however, they were grouped into ABCD type simply because the corresponding Chinese characters of this type of T-Ideos are distinct from each other. He believed that CD should be the base of reduplication and that the doubling happened leftward with some adaptations on the vowels. Further he proposed that there usually is a pause between AB and CD syllables in everyday speech, which made it possibly be represented as "AB_CD", like in the case of /pʰi li __ pʰa la/. Ma (1987) claimed that this kind of doubling is reduplication and that the base is copied from right to left. He suggested that in the case of /pʰi li pʰa la/, /li/ and /la/ in B and D positions be the base, that /pʰi/ and /pʰa/ in A and C positions be the reduplicant. Similarly, Liu (2012) in his paper concluded that there is no sufficient ground to conclude that these forms like /pʰi li pʰa la/ (as a typical example of ABCD group) do not belong to the domain of bona fide grammatical reduplication.

Following the above-mentioned research on this type of ideophone, AA'BB' type ideophones are accounted for as reduplication in this dissertation. But considering the size of reduplication in these words, whether they are foot-sized, syllable-sized or segment-sized reduplication, it is believed that segment-sized reduplication occurred in this type of T-Ideos; and that the seemingly vague reduplication in AA'BB' T-Ideos should not suffice them to be under ABCD category. Moving to ABCD ideophones listed in (41) for comparison purposes, phonological patterns of these ideophones are different from that of AA'BB' type in (40). As discussed in the previous analysis of ABCD ideophones, these forms show

less phonological reduplication but are mostly constructed with at least a morpheme unit and an ideophonic unit. However, reduplication in AA'BB' ideophones is at the phonological and prosodic level. Hence, these T-Ideos should branch out to form a category that can run in parallel with the ABCD type in terms of the way they are constructed.

(41)

ABCD type	English Gloss
zhī leng bá qiào	untamed frizzy hair or bushes, uneven surface with protruding in different directions, etc.
zhòu le bā jī	wrinkled in an ugly way.
xiā me kā chī	almost blind (an insult).
gōu lóu bā xiàng	leaning forward (of body), hunchbacked skinny person, not straight or stretched (of things).
guāng ba cū līu	naked without any coating.

To answer the question of the size of reduplication in AA'BB' T-Ideos, let's now take a closer look at the phonological pattern of AA'BB' T-Ideos. The same as in SC and some other Chinese dialects, a single NEM syllable structure can be represented as $CGVX^T$ (Duanmu, 2000; 2007) with five possible distinct tones, high [55], rising [35], falling rising [214], falling [51], and neutral tone- (Chao, 1933). Having adopted the syllable structure proposed by Lin (1989), Chiang (1992), Wan (1999) and Duanmu (2000, 2007), each single syllable structure of NEM can be represented as the following in (42). Within a single syllable, C represents the initial consonant, which is optional. GVX represents the final rhyme constitution. X in the rhyme represents an optional coda that can only be filled with either nasal coda /n/, /ŋ/ or rhotic coda /ɚ/. Tone is represented as the superscript ^{T}. In some

syllables, there is a medial vowel in G position that is usually filled with glides /j/, /ɥ/ or /w/, which is located before the nucleus vowel V and the coda X in the rhyme.

(42)

Syllable (σ)

Initial | Final | Tone

C / ∅

G
Medial
glide

V
Nucleus
monophthong/
diphthong

X
Coda
nasal
/rhotic/∅

T
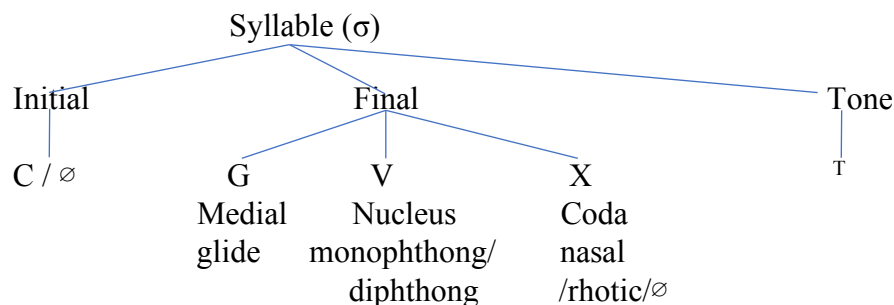
Mapping out the phonological sequence of two typical AA'BB' instances, as it is shown in (43), it is obviously seen that their initial consonants (C_1 & C_2) and final rhymes (V_1X & V_2X) in the pattern are identical. In each construction, onset consonants in A and A' are reduplicated alternatively in B and B' positions; the rhyme in A and A', B and B' positions are paralleled with some minor adaptations in adjacent syllables. Single segment standing alone may not carry semantic meanings, but when segments are reduplicated and paralleled to form a T-Ideo, the T-Ideo was endowed with a semantic meaning to provoke sensory imaginary of the utterance. Since segments duplicated are not morphological constituents that carry meanings, hence do not constitute as morphemes, reduplication in AA'BB' is not morphosemantically identical but is phonologically defined.

(43)

A	A'	B	B'		A	A'	B	B'
C_1V_1X	C_2V_1X	C_1V_2X	C_2V_2X		C_1V_1	C_2V_1	C_1V_2	C_2V_2
p ī ng	l i ng	p ā ng	l ā ng		p ī	l i	p ā	l ā

Unlike AABB or ABAB type ideophones in which reduplication occurred by copying the entire syllable, the construction in paralleled AA'BB' structure is segment reduplication. The rhyme in each syllable consists of a monophthong V or a diphthong VV, which

may or may not include a prenuclear glide that is represented as G on the medial position. Since coda X position can only be filled by nasal /n/, /ŋ/ and rhotic /ɚ/, the rhyme can be represented as either with a nasal closure Vn or a rhotic vowel Vr. For example, /xwaɚ/ 'flower' has a glide /w/ and a rhotic vowel /aɚ/, which is structured as CGVr. /xwaŋ/ 'yellow' has a glide /w/ and a nasalized ending /aŋ/, which is structured as CGVn. Following this idea, the reduplication in paralleled AA'BB' type is segment reduplication that copies the onset consonant and nucleus segment (excludes glides in G position). Onset consonants are usually paralleled in alternate syllables and nucleus segments are often reduplicated in adjacent syllables. Both of them can be reduplicated in alternate or adjacent syllables. The segment being copied in AA'BB' cannot stand alone as a lexicon in NEM hence does not constitute a meaning-bearing unit; therefore, doubling of this type of T-Ideo does not fall into the domain of morphological doubling. Four common examples of AA'BB' are schematized in (44).

(44)
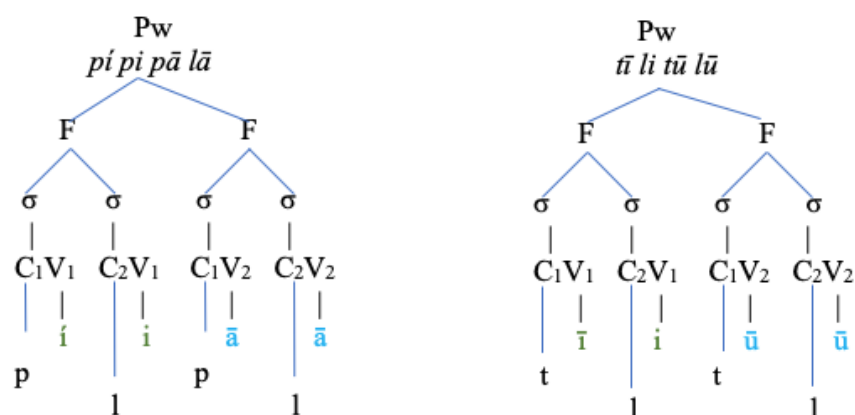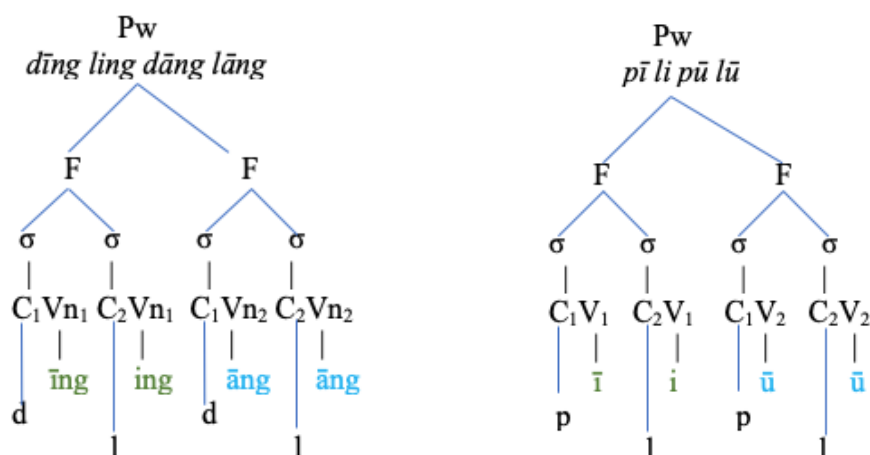
However, exceptions exist in AA'BB' reduplications. For example, *qí chi kā chā* 'get things done quickly as lightning, like a flash', *tīng ling kuāng lāng* 'clunk and plunk sound', and *xī li guāng tang* 'overly diluted'. The irregularity in their repetition does not suffice to exclude these ideophones from the regular AA'BB' ideophones. On the contrary, the irregularity shows that AA'BB' type allows onset substitutions in its doubling, which does not necessarily lead to a change in meaning. The fact that variants of AA'BB' ideophones exist in NEM colloquial discourse has made their patterns look paradoxical. For example, /tʰiŋ liŋ tʰaŋ laŋ/ versus /tiŋ liŋ taŋ laŋ/, both refer to 'clink sound made by suspended percussion instruments, such as windchimes, bells, etc,' the same as the frequently heard ideophones /tʰiŋ liŋ kwaŋ laŋ/, /tiŋ liŋ kʰwaŋ laŋ/, /tʰiŋ liŋ kʰwaŋ laŋ/ and /tiŋ liŋ kwaŋ laŋ/. The four T-Ideos are exchangeable and all refer to 'clunk and plunk sound'. In cases like these, onset substitutions occur between the same series of phonemes, such as denti-alveolar series /t/ and /tʰ/, velar series /k/ and /kʰ/, as shown in (45).

(45)

Pw
dīng ling kuāng lāng

F   F

σ   σ   σ   σ

CVn₁ C₂Vn₁ CGVn₂ C₂Vn₂

īng   ing   u āng   āng

t̶   g̶

d   l   k   l

Pw
tīng ling guāng lāng

F   F

σ   σ   σ   σ

CVn₁ C₂Vn₁ CGVn₂ C₂Vn₂

īng   ing   u āng   āng

d̶   k̶

t   l   g   l
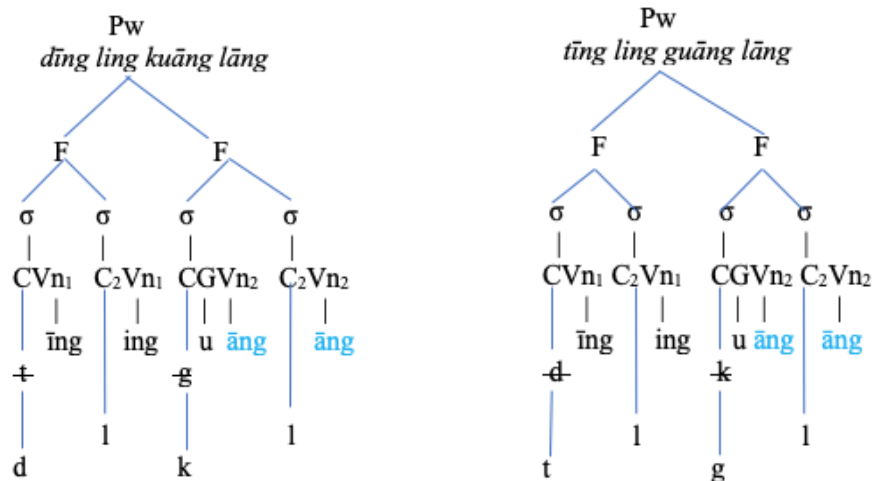
Patterns of onset substitution and dissimilation are a widespread areal phenomenon throughout Asia, and there is a vast literature on Chinese onset substitution (Inkelas, 2008). Onsetless or onset replacement in AA'BB' type is very common in NEM ideophones, which also does not impact the semantic meanings and syntactic functions in normal speech. Parallelism remains mainly in the rhyme segment of the syllable. For example, *wū lu āo lāo* 'sudden screaming or yelling at a high pitch' has a zero onset in its first and third syllables whereas its parallelism remains as a result of nucleus doubling. *xí li mǎ hā* which is used to describe 'the folly of forgetfulness', has a replaceable onset in the second syllable that can be substituted with /t/ without any change in the meaning. Reduplication in the nucleus makes its parallelism possible even though there is onset substitution. Table 4.5a below shows some commonly seen interchangeable phonemes in onset positions of NEM T-Ideos that share common linguistic features; Table 4.5b shows the actual examples that contain these consonants interchanged. Further research still needs to be done concerning the reason why certain consonants can be replaceable in AA'BB' ideophones, and on the relationship between possible replaceable variants and their phonetic symbolism.

Table 4.5a Interchangeable onset consonants in AA'BB' type

Replaceable onset	Shared features	Differences
/ɕ/, /x/	[-voice] [+fricative]	[alveolar-palatal] vs. [glottal]
/tʰ/, /t/	[-voice] [+alveolar] [+stop]	[±aspirated]
/kʰ/, /k/	[-voice] [+velar] [+stop]	[±aspirated]
/k/, /t/	[-voice] [+stop] [-aspirated]	[+alveolar] vs. [velar]
/kʰ/, /tʰ/	[-voice] [+stop] [+aspirated]	[+alveolar] vs. [velar]

Table 4.5b Examples of interchangeable onset consonants in AA'BB' type

*x*í li huā lā & *h*í li huā lā	/ɕ/, /x/	sound of splashing water, etc.
*x*ī *x*ī hā hā & *h*ī[9] *h*ī hā hā	/ɕ/, /x/	laughter sound
*d*īng ling *g*uāng lāng & *t*īng ling *k*uāng lāng	/tʰ/, /t/; /kʰ/, /k/	percussion sound
*d*í le *d*ū lū & *t*í le *t*ū lū	/t/, /tʰ/	the state of multiple dangling
*d*uāng *d*uāng dāng dāng & *g*uāng *g*uāng dāng dāng	/t/, /k/	striking sound
*t*uāng dāng *t*uāng dāng & *k*uāng dāng *k*uāng dāng	/tʰ/, /kʰ/	sound of heavy downfall

4.6 Phonological Markedness in ABCD T-Ideos

Despite of the seeming irregularity in ABCD T-Ideos' formation process, there is an

indispensable feature that is worth elaborating, i.e. the phonological markedness in their

second syllables. The peninitial syllable in majority of ABCD ideophones is usually weak-

ened and neutralized when being produced by native NEM speakers in daily conversations.

Take /ti ljəu swan kwa/ 'over-decorated with dangling decors' as an example which is

schematized in (46), the phonological pattern of the second syllable /ljəu/ standing in iso-

lation can be represented as CGV^T, but in real-life spontaneous speech, it is often reduced

into a neutral toned /lə/, which can be represented as *Cə*. If a minimal word in Chinese

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[9] Combination of glottal fricative onset /x/ and alveolar-palatal fricative /ɕ/ is ungrammatical in SC phonology, although it is acceptable and can sometimes be heard in NEM speech.

Mandarin must be a disyllabic compound (Prince, 1980; Duanmu, 1999), the metrical pattern of the ideophonic foot is a syllable trochee consisting of a stressed syllable followed by an unstressed one; whereas the disyllabic morpheme remains in CD positions with no phonological changes. As I discussed previously in the construction of the ABCD T-Ideo type, when the second syllable of this T-Ideo is occupied by an ideophonic unit, phonological and tonal changes will be triggered for prosodic reasons.

```
(46)                              Pw
            dí        liu       suàn       guà
            σ          σ          σ          σ
            |          |          |          |
            CV        CGV       CGVn       CGV
           / \        / | \      / | \      / | \
          /t  i     l  j  əu   s  w  an   k  w  a/
           |         |  | ∧     |  | ∧      |  |
           μ         μ  μμ      μ  μμ       μ  μ
           |         |          |          |
          LH¹⁰       HH         HL         HL

                          ⬇
                          Pw

           σs         σw         σs         σs
           |          |          |          |
           CV        CGV       CGVn       CGV
          / \        / \        / | \      / | \
         /t  i     l   ə      s  w  an   k  w  a/
          |         |          |  | ∧      |  |
          μ         μ          μ  μ μ      μ  μ
          |         |          |          |
         LH        [ ]         HL         HL
```
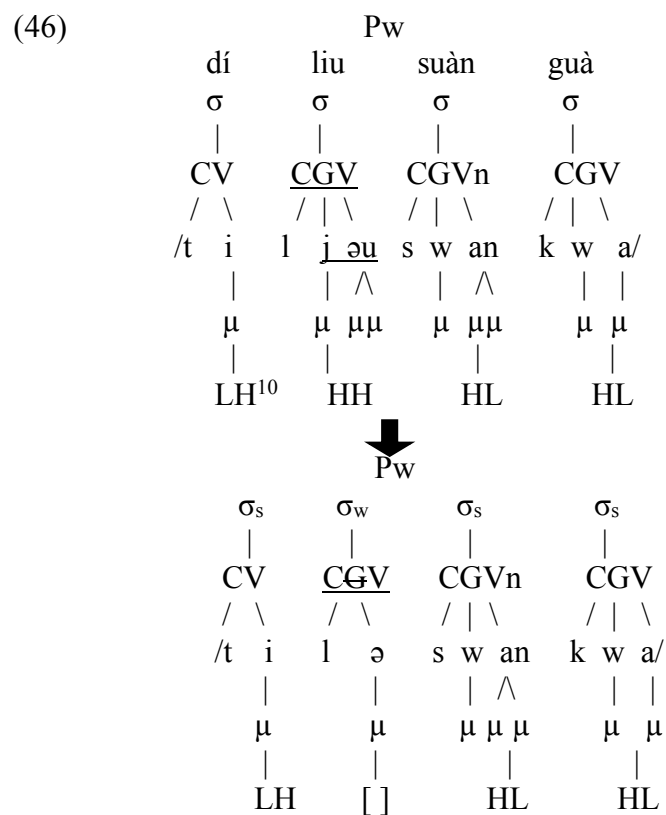
Ola (1995) and Ola Orie (2000) thoroughly discussed distributive reduplication in Standard Yoruba and syllable asymmetries in Ondo Yoruba under the framework of Pro-

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[10] Underlying representation of tones are adopted as described in book chapter of *Studies in Chinese Phonology,* edited by Wang, J. & Smith, N., Linguistic Models, 20, De Gruyter Mounton, 1997.

sodic Morphology and Optimality Theory. Itô (1989; 1990) analyzed the subsyllabic structure of Japanese reduplicated loanwords through prosodic licensing, properheadedness principal and templatic morphology. Their works shed light on the analysis of segment reduplication in NEM T-Ideos (mostly on AA'BB' and ABCD type). Within templatic morphology, it is believed in this dissertation that word binarity constraints allow Chinese maximal prosodic word to have two feet, and the minimal word restrictions require the reduplication in AA'BB' and ABCD to be expressed as a binary foot with some adjustments within syllables. Evidence from segment reduplication, truncation, glide deletion and vowel reduction have justified the assumption.

Reduction in the second syllable is not rare in ABCD T-Ideos. The vowel in these weak syllables are usually reduced and sounds close to a schwa in English (transcribed as /ə/ in IPA), as shown in (47). Especially those ideophones with *-ba-* and *-le-* infixations, although variants existed in different contexts due to unclear reasons, the second syllable is commonly reduced into /pə/ or /lə/. For example, /ɕi pə ljɛn tʰjɛn/ is used to describe someone who is 'too skinny that is very unattractive and almost unpleasant to look at'. Its second syllable is often reduced into a /pə/ in real-life spontaneous speech. Tone in this syllable is weakened into a neutral one. Likewise, /xu lə pan pʰjɛn/ 'roughly wiping a surface with hands or mop, get stuff done roughly.' Its second syllable is usually neutralized and produced as /lə/ in real-life speech.

(47)   Reduction in ABCD ideophones   Gloss

    góu /lou^{35}/ *bā xiàng* → *góu* /lə/ *bā xiàng*   'hunched over, distorted natural body.'
    xiā /ma^{51}/ *kā chī* → *xiā* /mə/ *kā chī*   'blind (insulting).'
    lèi /jɚ^{214}/ *bā chā* → *lèi* /jə/ *bā chā*   'teary eyed.'
    bí /tʰi^{51}/ *lā xiā* → *bí* /tʰə/ *lā xiā*   'snotty face.'

hú /tsz^{51}/ *lā chā* → *hú* /tsə/ *lā chā* 'dirty look of not clean-shaven face.'

hū /tʂʰz̩^{55}/ *dài chuǎn* → *hū* /tʂʰə/ *dài chuǎn* 'labored breathing.'

Using Praat speech analyzing software can better present the duration, pitch, intensity and vowel quality change in these peninitial syllables. In figure 1, spectrums of ABCD ideophone *qí chi kā chā* ('getting things done in a very quick and efficient manner, like a flash') that was produced by the same female NEM speaker are analyzed separately in isolated read aloud speech (top) and spontaneous speech (bottom). Selected parts between red lines display statistics on the syllable reduction from /tʂʰz̩^{55}/ to / tʂʰə-/ in the second syllable. The figure shows that duration of the peninitial syllable in isolated lexicon is 0.506363 second, which is longer than that of the extracted one from spontaneous speech (0.153897 second). When one zooms in to look at their vowel lengths, as shown in figure 2, vowel duration in the second syllable of the isolated lexeme is 0.347066 second and that of spontaneous speech is 0.075322 second. Vowel length is much shorter in spontaneous speech than in an isolated word read aloud. Other values of the vowel in different contexts, such as duration, pitch, intensity and first three formant frequencies are listed in Table 4.6.a, from which we can see clearly a comparison between vowel values of /tʂʰz̩^{55}/ and /tʂʰə-/ in read aloud word and spontaneous speech.

Figure 1. Spectrum of *qí chi kā chā* in isolated lexicon and spontaneous speech.
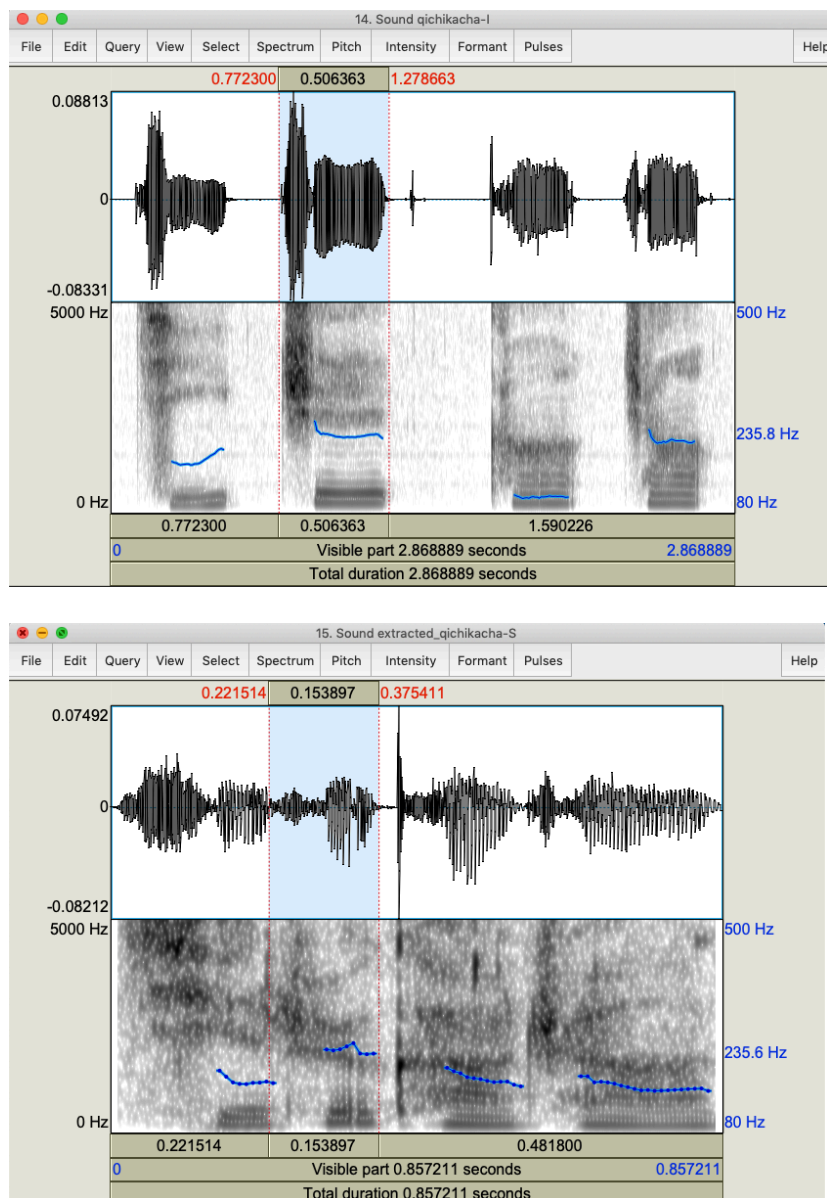
Figure 2. Visible sound pictures of the 2nd syllables *chi* in read aloud word (top) and spontaneous speech (bottom).
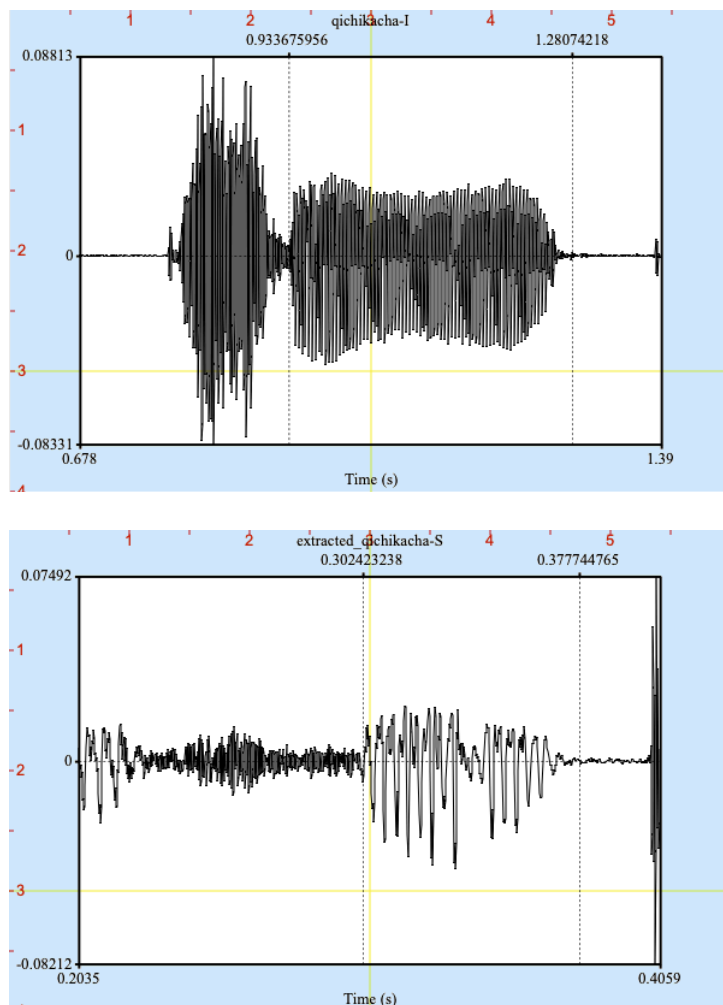
Table 4.6.1 Comparison of the 2nd syllable in Praat

qí chi kā chā		
	Read aloud word	Spontaneous speech
IPA	/ʐ̩/ as in /tʂʰʐ̩⁵⁵/	/ə/ as in /tʂʰə-/
Duration (s)	0.347066	0.075322
Pitch (Hz)	235.880	242.566
Intensity (dB)	59.34	55.77
Formant (Hz)	F1 394 F2 2172 F3 2457	F1 420 F2 1683 F3 2535

As is shown in Table 4.6.a, not only the duration is shortened but also formant frequencies have experienced some changes. It is known that F1 is inversely related to vowel height and F2 is related to vowel backness (Ladgeford, 2006). F1 in an isolated read aloud syllable is 394 hertz and lower than the F1(420 Hz) in spontaneous speech, which indicates that vowel height in the second syllable in the isolated word is higher than that in spontaneous speech; F2 in read aloud word is 2172 hertz and higher than the F2(1683 Hz) in spontaneous speech, which indicates that vowel backness in the second syllable of the isolated word is more front than that in spontaneous speech. Comparing formant frequencies of the vowel in spontaneous speech with those of the eight major vowels by Ladgeford (2015), position of the schwa-ized vowel can be seen in Figure 3 in red. The chart shows F1 on the vertical axis and F2 on the horizontal axis. The scales are marked in Hertz (Hz), arranged at Bark scale intervals (Ladgeford & Johnson, 2015:209).

Fig. 3 Formant frequencies of vowel in the second syllable of *qí chi kā chā* in spontaneous speech, comparing with eight American English vowels in formant chart.
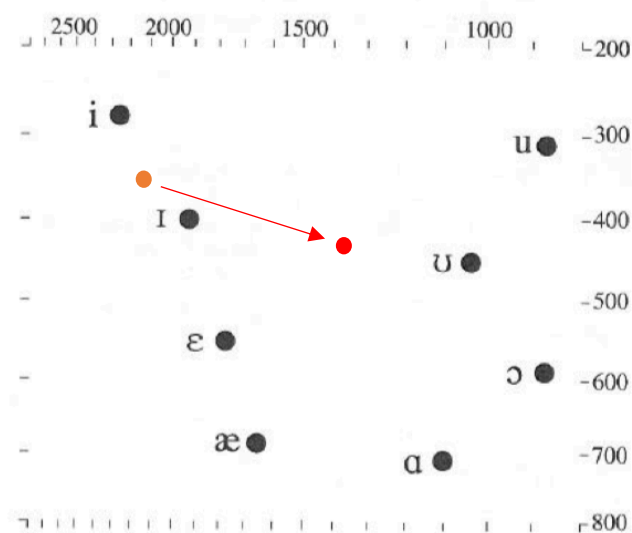
A schwa is often characterized as an unstressed or underlyingly toneless mid central vowel, usually taken as the outcome of syllable reduction or neutralization of vowel quality (Chomsky & Halle, 1968:110; Flemming, 2007). Based on Flemming's data analysis on word-final and word-internal schwa, mean F1 of a word-final schwa is 665 Hz and its mean F2 is 1772 Hz (Flemming, 2007:3), although a schwa's quality is variable and is largely depending on its adjacent consonants (Flemming, 2007; Browman & Goldstein, 1992). A series of studies on common monophthongs in Chinese Mandarin has also been conducted by Chao (1968), Cheng (1973), Xu (1980), Duanmu (2000), Lee & Zee (2003), Gu, Mori & Kasuya (2003) and Yang & Fox (2017). There is some disagreement on this mid central vowel and on how to transcribe it and its variants. Following Duanmu (2000), the mid vowel in SC is transcribed as /ə/ here. Although several variants such as [ɤ, o, e] exist in different dialects, mid vowel /ə/ has a rough formant frequency range of F1[420-700 Hz] and F2[1350-2000 Hz] (Gu, Mori & Kasuya, 2003). The major difference between NEM schwa in ABCD ideophone second syllables and the mid central vowel in SC lies in whether they are tone-bearing. The schwa in the second syllable of ABCD ideophones are usually neutral toned units, whereas the mid central vowel that appears mostly in isolated lexemes is usually a tone-carrying constituent in the syllable. For example, the mid vowel in /kʰə⁵⁵/ 'a piece of', /xə³⁵/ 'and', /zə²¹⁴/ 'to piss someone off', and /ʈʂə⁵¹/ 'this'. Comparing with the position of SC mid central vowel in yellow in the formant frequency chart, the reduced vowel in ABCD ideophones marked in red might suggest a contrastive behavior, as shown in Figure 3. In a nutshell, formant frequencies of the vowel in /ʈʂʰə/ as produced in spontaneous speech falls into the range of a mid-central vowel, which may in part due to a weakened second syllable hence making it sound close to the English schwa /ə/.

In Chinese linguistics, a neutral tone syllable is often characterized as loss of its original tone patterns. Its duration is systematically shorter than the syllable with normal tones (Cao, 1992). Although pitch and intensity range of a neutral tone syllable can be very complex and remains a controversial issue, and we still lack sufficient acoustic evidence to better present neutral tones in Chinese, it is believed that a neutral tone syllable does not have a fixed pitch and intensity value (Chao, 1968), furthermore, its pitch and intensity are not necessarily weakened but are largely influenced by its preceding syllable and by into-nation (Norman, 1988; Cao, 1992; Liu & Xu, 2007; Wang, 1997; Lin & Yan, 1980). The most critical element being considered which distinguishes neutral tone from the full tones is duration (Wang, 1997). Therefore, pitch and intensity are not taken as influencing factors in this paper. This leaves duration as the crucial factor reflecting syllable and vowel reduc-tion. As shown in Table 4.6.a, pitch and intensity of schwa in the reduced second syllable are not lower than those of the vowel in isolated read aloud words as expected, probably because of the influence from its preceding consonant. Vowel length in the second syllable is much shortened from 0.347066 second in read aloud word to 0.075322 second in spon-taneous speech, although their pitch and intensity didn't prove to have changed much. The duration reduction in vowel length suggests a neutralized second syllable in which the vowel was reduced in the schwa-ization process.

Reduced second syllables can be largely found in ABCD ideophones that are con-structed with affixes *-ba-, -le-* or any variants in the second syllable. The vowel in these second syllables is usually toneless and reduced into a schwa. Analyzing ABCD ideo-phones that contain *-ba-* affix in (37) of Section 4.4 via Praat acoustic analysis software, statistics of the vowel /ə/ in spontaneous speech and /u/ in isolated word are listed in Table

4.6.2 below. Their formant frequency F1 and F2 in unit of hertz (Hz) and duration in unit of millisecond (ms) can be found in the table. Sound profiles were produced by the same female NEM speaker. The ideophones in Table 4.6.2 share a common affix -*bu*-/pu[51]/ in isolated lexicon with some exceptions that randomly identified as -*ba*-. Vowels in this affix are often reduced into schwa /ə-/ in spontaneous speech. As shown below, average duration of the schwa-ized syllable in spontaneous speech (0.040307692 second) is shorter than that of the second syllable in isolated read aloud word (0.159461538 second). Average formant frequencies of the schwa show that the vowel has experienced some changes too. First formant frequency of the reduced vowel is a bit higher than that of /u/, which indicates that its vowel height is lower than the vowel in isolated lexicon. Second formant frequency of the reduced vowels are also raised when produced in spontaneous speech, which shows that they are more front than the vowels in isolated lexicon.

Table 4.6.2 Vowel reduction /u/ > /ə/ in ABCD ideophones with -*bu*- affix

	/ə/ in the 2nd syllable				/u/ in the 2nd syllable			
	F1	F2	Duration	average F1	F1	F2	Duration	average F1
gānbulāxiā	468	1510	48	491.9285714	474	1065	2070	434.1538462
gābuliūcuì	522	1586	58		475	783	160	
guāngbucūliū	554	1337	60	average F2	449	1167	202	average F2
hēibucūliū	462	1476	62	1503.357143	479	1134	92	952.4615385
hēibuliūqiū	533	1496	53		423	896	72	
húbulànkěn	463	1219	18	average duration	416	976	47	average duration
huábuliūqiū	471	1563	35	0.040307692	439	801	184	0.159461538
jiànbucīliē	401	1634	16		435	1269	169	
niānbucūliū	546	1617	61		458	887	159	
pòbulōusōu	466	1284	20		418	927	123	
suānbuliūdiū	537	1530	19		440	836	171	
xībulēngtēng	465	1594	36		415	931	133	
xìbuliāntiān	497	1769	41		369	764	282	
zhíbulēngtēng	502	1432	33		369	877	205	

Likewise, ABCD ideophones with -le- affix or any of its variants such as -la-, -lu-, -li- and -de- usually experience a vowel reduction /a, i, u/ > /ə/, as shown in Table 4.6.3 below. Statistics of vowel values in Praat are shown in Table 4.6.3 below, in which variants of -le- are marked with * at the end of the words. Average F1 of the vowel in an isolated lexeme is 591 hertz, which is a bit higher than the average F1 of the schwa which is tested as 515.69 hertz; average F2 of the vowel in an isolated lexeme is 1154.25 hertz, which is lower than average F2 of the schwa tested as 1444.5 hertz. Average duration of the reduced schwa is 0.0619375 second, which is much shorter than the average duration of the vowel in read-aloud speech, shown as 0.3269375 second. Average formant frequencies indicate that schwa-ized vowel height is lowered, and that the reduced vowel in fast speech is more front when comparing with the /u/ variant and is more back when comparing with the mid central vowel in isolated lexicon.

Table 4.6.3   Vowel reduction /e/, /u/> /ə/ in ABCD ideophones

	/ə/ in the 2nd syllable				vowel in the 2nd syllable			
	F1	F2	Duration	average F1	F1	F2	Duration	average F1
dílesuànguà	544	1671	53	515.6875	651	1395	275	591
hēilegūdōng	508	1197	63		603	1289	330	
húlubànpiàn	455	1114	60	average F2	425	817	299	average F2
jíleguǎiwār	516	1702	80	1444.5	617	1292	280	1154.25
niánlegūzhuā	454	1509	84		624	1278	334	
pílepūlōng	383	1468	77	average duration	624	1197	360	average duration
shuǐlebāchā	480	1519	66	0.0619375	609	1217	328	0.3269375
tíletānglāng	659	1550	73		624	1191	396	
tūlefǎnzhàng	564	1363	54		623	1184	362	
tūlufǎn-zhàng*	575	1367	51		458	854	311	
tūleguāngjī	399	1106	73		591	1120	382	

tūluguāngjī*	466	1299	70		419	799	391	
wǔleháofēng	692	1259	45		682	1173	379	
xīleguāngtāng	473	1609	55		621	1215	332	
xílemǎhā	648	1559	39		652	1254	259	
xídemǎhā*	435	1820	48		633	1193	213	

Scatterplot formant frequencies of the reduced vowels in Table 4.6.2 & 4.6.3 into a vowel formant frequency chart shown in Figure 5 to compare with the five common vowels /a, i, y, u, ə/ in SC that were produced by the same female speaker. F1 and F2 of the five common vowels as in /pa^{55}/, /y^{35}/, /i^{51}/, /u^{35}/ and /xə^{35}/ are listed in the sound spectrum below. Formant frequencies of the schwa in reduced second syllables are scattered in the mid central area comparing with the positions of the five common vowels. They did not overlap with the mid central vowel /ə/ in NEM. An exception exists only in the schwa that has F1 [692] and F2 [1259], which is relatively close to the mid central vowel [ə]. The scatterplot suggests that peninitial syllables of these ABCD ideophones have experienced a reduction process when being produced in spontaneous speech. Changes in formant frequencies indicate that both the vowel height and backness are moved in real-world speech. The reduced vowel in the peninitial syllables sounds close to an English schwa but is slightly different from the mid central vowel /ə/ in strong syllables in NEM. T-Ideos in 4.6.2 and 4.6.3 are just a small quantity of the ABCD type that share a reduced second syllable in their constructions; however, it is enough to show the phonological markedness in this type and, hence, to differentiate themselves from other categories of T-Ideos.

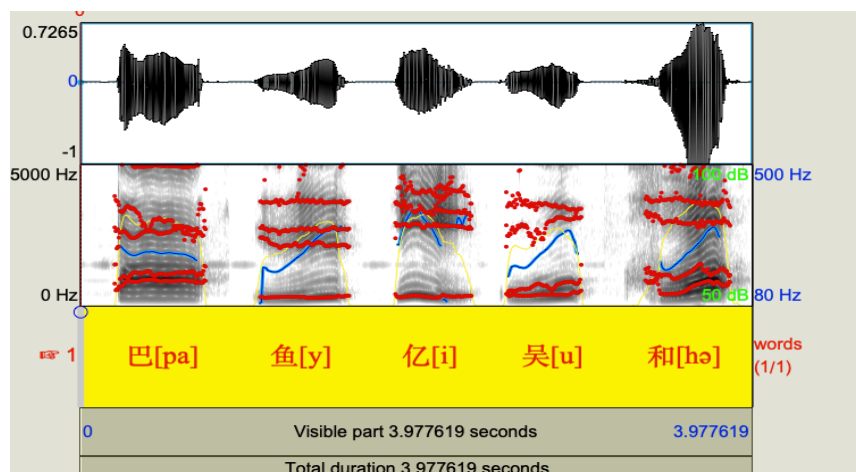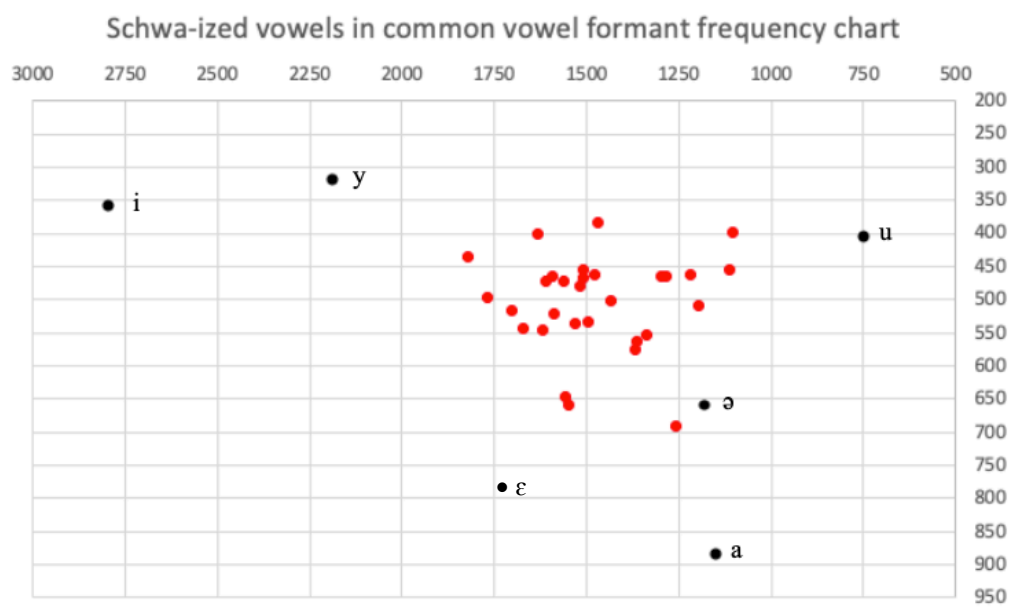Figure 4. Sound spectrum of the five common vowels produced by the same speaker.

Fig. 5 Scatterplot formant frequencies of the vowels in the 2nd syllable ideophones, comparing with formant frequencies of the 6 NEM common vowels in formant chart.

CHAPTER 5 SYNTACTIC FUNCTIONS OF NEM T-IDEOS

5.1 Grammatical Relations with Other Constituents within a Sentence

The grammatical function of ideophones varies by language, even within a language system between SC language and its regional dialects. Due to the fact that SC is a standardized language used as the official language in most formal written contexts, each ideophone has its corresponding Chinese characters to represent the word, and its grammatical function within a syntactic construction has to follow standardized grammar rules that are applied in the written language. The syntactic function of ideophones in NEM dialect enjoys some flexibility comparing with those in SC. One typical feature is that many onomatopoeia can function as the subject or predicate of the sentence in NEM colloquial and some informal written expressions, whereas it is considered nonstandard or ungrammatical in SC, especially in the written language to have onomatopoeia standing alone as either subject or predicate in a sentence. For example, *fẽr chi fẽr chi* /fɚ ʈʂʰʐ fɚ ʈʂʰʐ/ is an NEM onomatopoeia that uses noises of sobbing and other inarticulate sounds to evoke the auditory event of someone sobbing which is usually accompanied with convulsive gasping. Although this is not a standard ideophone adopted in SC vocabulary inventories and does not even have corresponding Chinese characters as written forms to represent the syllables, it is very common to hear the ideophone being used as the predicate in every day expression, as shown in (48) below.

(48)   a.   pjɛ   fɚ ʈʂʰʐ fɚ ʈʂʰʐ

            NEG   IDEO-V

            'Don't   sob!'

    b.   *fẽr chi fẽr chi* shì   tā (de)   qiáng xiàng.

IDEO-N   V   P-PRON   N

Sobbing   is   her   strength.

It was not until 1980s that research on SC onomatopoeia and various ideophonic expressions started to surface in the field of Chinese linguistics. In terms of syntactic functions of ideophones, it is more acceptable in SC to have onomatopoeia serving as adverbial phrase to modify the verb or inserted as an independent exclamatory phrase within a sentence structure to complement the meaning (Shao, 1981; Ma, 2002). A syntactic feature also peculiar to SC ideophones is that they are not modifiable, but are used to modify or intensify the meaning of adjectives and verbs. The meaning of the sentence is complete with or without ideophones, which made them being considered syntactically optional, however, ideophones as performative words that depict sensory imagery enhance the meaning of the sentence; their positions in a sentence are pretty flexible so that they can be inserted as an independent phrase, and sometimes ideophones can form a complete utterance on their own. From this perspective, grammatical relations between ideophones and other constituents within a sentence is relatively loose, comparing with the correlations between other lexical classes. In the following sections, I will demonstrate different grammatical functions of ideophones in various utterances.

5.1.1 Ideophones vs. interjections

Literature has lavished discussions on the difference between ideophones and interjections across languages and dialects. Ideophones are more often used to modify other utterances; whereas interjections are expressions of the speaker's mental state or emotions

and usually occur independently (Lee, 2017). Ideophones provide an illustration of a scene the utterance is about, whereas interjections are more like the direct response to what happened in the utterance but do not necessarily resemble the event per se (Ameka, 1992). Because of the similarity in their relative independence, SC ideophones used to be categorized under interjections in the latter half of the last century (Lü & Zhu, 1979; Ding, 1979; Liao, 1956; Li & Liu, 1951; Hong, 1980). As examples of NEM T-Ideos and NEM interjections in (49) show, ideophones *qí chi kā chā* /tɕʰi ʈʂʰə kʰa ʈʂʰa/ and interjections *éi ya mā ya* /ɛ ja ma ja/ in NEM can both be inserted as an independent phrase in the sentence, however, interjection cannot be used to modify any constituent in the sentence to enhance its meaning, and ideophones cannot be seen as a response to what the utterance is about. There might be semantic overlapping, but the two have different grammatical functions within a syntactic construction.

(49) a. tɕʰi ʈʂʰə kʰa ʈʂʰa,   ʈʂə   xwa   ʐaŋ   ni   ʂwə tə!

         IDEO-ADVL   DET   utterance C-V   you   spoke!

         Like being struck by a lightning, this is how you said it!

    b. ɛ ja ma ja,   ni   ʈʂə   xwa   ʂwə tə   tɕʰi ʈʂʰə kʰa ʈʂʰa   ja!

         INTJ   you   DET   utterance   spoke   IDEO-ADVL   EXCL!

         Oh my mom, you struck me like a lightning by saying that!

5.1.2 Ideophone as an insertion of complementary information

Different from other word classes such as verbs, adjectives, nouns, prepositions, ideophones (especially onomatopoeia) enjoy a relative independence in syntax, which allows them to stand alone in any position of a sentence without causing interference in sentence

comprehension. The independent ideophonic insertion stands apart from the main sentence yet provides a vivid depiction of the interaction between the subject and its predicate at the semantic level, although the correlation between ideophones and other constituents is relatively loose. In NEM, it is more common to hear and see onomatopoeia standing alone as insertions in the beginning, middle or at the end of the sentence, whereas other ideophone-derived parts of speech function the same as adjectives or adverbs which restricts their mobility to modifier's position in the sentence, as examples shown in (50 a-c) and (51 a-c).

(50) a. tsʰz tsʰz la la,   pa   zəu   tɕʰyɛn tau   kwə   li. (Independent insertion)

ONO   C-V   meat   all   pour   pan   inside.

Loud sizzling sound, pour all of the meat into the pan.

b. tsʰz tsʰz la la,   zəu   tɕjəu ʈʂə mə   ʂəu lə.   (Phrase complement)

ONO-CMPL   meat   like this   cooked.

Sizzling like this, the meat is cooked.

c. kə pə   tsʰz tsʰz la la tə   tʰəŋ.   (Adverbial)

SUB   IDEO-ADV   hurt.

Arms hurt like in sizzling burning pain.

(51) a. ɕi swɛ ɕi swɛ a,   wə tə ma ja!   (Independent insertation)

IDEO   oh my mom!

Shredded into small pieces (my heart is broken), oh my mom!

b. ɕi swɛ ɕi swɛ a, wə tə   ʈʂɛ kə   ɕin   tsʰau tə ja!   (Phrase complement)

IDEO   my   DET CL heart   worried!

My heart worried so much that it shredded into small pieces!

   c. wə tə   ʈʂɛ kə   ɕin   tsʰau tə ɕi swɛ ɕi swɛ ja!   (Adverbial)

      my   DET CL   heart   worried like being shredded!

      My heart worried so much that it shredded into small pieces!

5.1.3 Derived ideophones as adjectives

One of the grammatical features peculiar to ideophones lies in that they tend to be inflectional and derivational forms, which originated from verbs through reduplication, nouns, onomatopoeic notions, etc. (Childs, 1989) A large amount of NEM T-Ideos can be used to generate new word classes. For example, followed by an adjective marker *-de* (的), an onomatopoeia can function as an attributive adjective in the sentence to modify nouns or noun phrases. As shown in (52), /pʰja tɕi pʰja tɕi tə/ is a derived form from onomatopoeia which means "sound of loud eating, happily walking, loud shooting, slapping with oozy and sticky substance, etc." Considering the position of the derived ideophone in a sentence, the derived NEM ideophones basically take the position of adjectives: before the noun they modified (52 a), or at the end of the sentence as predicative adjective that usually comes after a linking verb modifying the subject rather than before a noun or noun phrase, as shown in (52 b).

(52)   a. nei   tɕjau   i kə   pʰja tɕi pʰja tɕi tə   tʰaŋ tɕʰjaŋ.

        DET   (is) called   a CL   IDEO-ADJ   killing of the innocent.

        That's called a blatant killing of the innocent.

      b. tʰa   tɕjəu   zwə zɛ   naɚ   pʰja tɕi pʰja tɕi tə.

        SUB   right   sitting   there   IDEO-ADJ.

        S/he is sitting right there, eating loudly.

5.1.4 Derived ideophones as adverbials

Other than functioning as adjectives, it is very common to see the derived ideophone functioning as adverbs or adverbial modifiers of the sentence by attaching an adverbial suffix -*di*[11] (地, pronounced as /tə/ in colloquial language) to the ideophone. I again cite as an example, /pʰja tɕi pʰja tɕi/. This is an onomatopoeia that depicts the sensory imagery of loud eating or sucking on a pipe loudly when smoking. It can also be derived by adding the suffix -*di* to form an adverb of manner that precedes the main verb in the sentence. The derived ideophone is therefore used to complement the meaning of the main verb by providing information on the manner in which the subject performs the action, as shown in (53 a-c). Considering the position of the derived adverbial phrase in a sentence, they normally come in a position before the verb when functioning as adverbs of manner; and it is generally possible to move these ideophone-derived adverbials to the start of the clause to modify the clause as a whole, which will not cause NEM native speakers to cringe. However, people from other regions and SC speakers would cringe hearing these ideophone-derived adverbials at the beginning of the utterance if said in NEM dialect without the NEM accent to mark it as the speech of the regional group, and in most cases, it would be taken as ungrammatical, non-standardized and sometimes inappropriate for formal occasions.

(53) a.   wə   tɕjəu zɛ naɚ   pʰja tɕi pʰja tɕi tə   zəu   a.

           SUB   right there   IDEO-ADV   walk EXCL

---

[11] Represented as "地" in written language; not the same character as the *de* used to mark possessive or relative, which is represented as "的" in written contexts.

I (am) right there walking with joy (like on bare feet).

b. jɛn lueɚ pʰja tɕi pʰja tɕi tə waŋ ɕja tjau.

  Tears IDEO-ADV   downward drop

  Tears drop down in the manner of making splashing sound with huge drops.

c. pʰja tɕi pʰja tɕi tə waŋ wə ljɛn ʂaŋ pɛ.

  IDEO-ADV   toward I face on slap.

  In a loud manner, (SUB) slapped on my face.

5.1.5 Ideophones as the verb

 Interesting as it is, NEM ideophones are allowed to replace the verb of the sentence. They are sufficient to express the whole meaning that the verb is supposed to carry, and in most cases arouse more subtle sensory resonance than what the verb may carry. For example, a typical NEM onomatopoeia /au lau au lau/ represents the sound of people making a sudden burst of high-volume yelling. Other than deriving an adverb, or an attributive or predicative adjective, this onomatopoeia can also be used as the verb of the sentence, as shown in (54 a-d). Comparing with the action verb /xɛn^{214}/ 'to yell', /au lau au lau/ being used as the verb of the sentence carries a more intense and negative connotation of showing contempt towards the subject it describes, although they both refer to the same action of *'yell'*.

(54) a. ni   au lau au lau ʂən mə wɛ jiŋɚ!

   SUB IDEO-V   what nonsense (to show contempt)!

   What the hell of nonsense are you yelling about!

 b. ni zɛ naɚ au lau au lau xɛn ʂən mə wɛ jiŋɚ!

SUB   over there   IDEO-ADV   yell   what nonsense (to show contempt)!

You burst a yelling about what nonsense over there!

c.   tʰa   tɕjəu ʈʂə   au lau au lau tə   kə ɕiŋ.

    SUB   like this   IDEO-ADJ (attr.)   personality.

    S/he is like this, who has a loud-yelling personality.

d.   ʈʂə   i tʰjɛn,   zʊŋ   au lau au lau tə!

    This   whole day, always   IDEO-ADJ (pred.)

    Such a day like this, it has always been loud-yelling!

5.1.6 Ideophones as nouns or noun phrases

    Some NEM ideophone-derived nouns or noun phrases can stand at the beginning of the sentence, functioning as the subject (55 a), or at the end of the sentence functioning as the object (55 b); and further be modified by other words such as adjectives or nouns.

(55) a.   ʈʂə   kɚ kɚ kɚ kɚ tə   ɕi ɕi xa xa   ʂʐ̩   mei wɛn mei ljau   a!

        This IDEO-ADJ   IDEO-N   is   endless   EXCL!

        This way of joking around with giggling and gasping seems to be endless!

   b.   ni   pu   hɛ pʰa   ʈʂə   lan bu ʈʂu tə   ti ti ta ta?

      SUB NEG   fear   this   unstoppable   IDEO-N?

      Don't you fear this unstoppable fleeing (of time)?

CHAPTER 6 SEMANTIC-PRAGMATIC APPLICATIONS OF NEM

T-IDEOS

6.1 Sound Symbolism and Iconicity

Hinton et al (1994:12) define sound symbolism as "the direct linkage between sound and meaning". Ideophones in certain languages are characterized by onomatopoeia, the direct imitation of sounds in nature, which is generally regarded as just one side of sound symbolism. Onomatopoeia is "a word, or a combination of words, whose sound seems to resemble closely the sound it denotes (Ferber, 2019: 86)". They usually go on to describe an extended meanwhile more subtle sense of not just sound, but more about size, form, speed, solidity, duration, or almost anything else, which makes them ideophones. The broader sense of onomatopoeia overlaps with *sound symbolism* or sometimes called *sound iconicity* or *iconicity*.

Research on sound symbolism and iconicity has long focused on how the iconic associations are made, trying to find a universal cross-modal association and understand how ideophones are iconic from a cognitive linguistic perspective (Dingemanse, 2017). Thomas and Do (2019) further proposed that universal accessibility of articulatory gestures and human ability to generate analogy is what makes iconicity universal and thus easily acquirable by speakers regardless of their language background. This is also being observed in classroom settings of second language teaching and learning. Most of NEM ideophones have become acquirable and learnable to Chinese as Second Language (CSL) learners once they were told with full explanation on the association between the word form and semantic meanings, without the necessity of comprehending the mechanism of their phonological structure. For example, NEM T-Ideo /kwa tɕi kwa tɕi/ is an onomatopoeia resembling

sound of human applause, which can also be used as the verb of the sentence to mean "to applaud in a scattered manner". Once CSL learners were instructed (sometimes repetitively) with an explanation on how the associations are built between the ideophone and its semantic meanings, it is usually difficult to not know how it is used in different utterances, and CSL learners could always generate an analogy to infer its meanings from a new context and pick up these ideophones really quickly in their speech production. Although it seems that ideophones are exclusive to native speakers, and second language learners do not usually feel the urge to learn this peripheral vocabulary due to the fact that ideophones have been marginalized by linguists for decades, ideophones together with their sound symbolism and iconicity are still learnable and reproducible to second language learners. It is also advocated to research more on breaking iconicity in order to have a better understanding of the internal correlation of ideophones and their iconicity, according to Dingemanse (2017). However, so far there is no proposal explaining how to break iconicity between ideophones and the meanings they depict.

6.2 Pragmatic Usage

NEM ideophones are frequently used in real-world contexts, which is seen as the essence of humor due to their associations with the senses or images evoked throughout the utterance. Because of the iconicity and symbolism ideophones carry, the utterance embedded with these ideophones are performative, depictive and expressive, and thereby being widely used by comedians as "punch lines" in stand-up comedies, talk shows, sitcoms, sketch comedies, TV shows, and some other informal talks. For example, NEM ideophone /kaŋ kaŋ kaŋ kaŋ/ is commonly used to evoke the sensory characteristic of hardness of a

solid matter (wood, iron, etc.) or an abstract substance (rapport, friendship, etc.). Its derived

adverb /kaŋ kaŋ kaŋ kaŋ tə/ is often used to depict severe knocking or hitting. When it is

adopted via contrasting as a means of creating comic effect, as shown in (56), humor is

evoked when this T-Ideo as a trigger is used to depict an image of a beautiful woman tap-

ping her own laps forcefully like a man, which causes the audience to abruptly shift its

understanding from the original or more obvious impression (a beautiful woman should be

elegant and gentle, shouldn't behave like a man) to the consequential, opposing depiction

(this beautiful woman is macho).

(56) kʰɛn kei ʈʂei mei ny lə tə,   kaŋ kaŋ kaŋ kaŋ tə ʈʂʐ pʰɛ ta tʰwei.

　　 Look C-V this beautiful woman laugh, IDEO-ADV   always tap lap.

　　 Look at this beautiful, she's laughing, while tapping her lap forcefully.

 Exaggeration and displacement are also commonly adopted linguistic techniques in

comedies, especially when NEM ideophones being used in a seemingly inappropriate con-

text. For example, T-Ideo /pʰu ʈʂz pʰu ʈʂz/ is an onomatopoeia resembling the sound of loud

explosive diarrhea due to the escaping gas. With the aim of causing laughter, its derived

adverb can be used to depict the image of spitting or sneezing in an unstoppable, repetitive

and explosive manner, as shown in (57). Although the displacement of context (from where

gastrointestinal tract ends to mouth and nostrils) and the exaggeration of the intensity of

expelling fluid and air seem to be inappropriate, this is what triggers the humor when ac-

companied with comedian's humorous intonation, proper pauses, and other narrative tech-

niques.

(57)　　na　　pi ɕjɛ　　　pʰu ʈʂz pʰu ʈʂz tə　　waŋ wɛ　　pən　　a.

That   nosebleed   IDEO-ADV   outward   gust   EXCL.

That nosebleed is gusting out like an explosive diarrhea.

6.3 Future Research

There are, of course, many undiscovered, unarchived NEM ideoponic expressions that happen not to be covered in this study. Hopefully future research will lead us to conduct more systematic analyses of morphophological construction in ideophones and phonosemantic interface in their iconicity for an ever-wider variety of languages and to compare the results cross-linguistically. There is also a vast amount of research yet to be done however is worthy of discussion in terms of T-Ideos' prosodic patterns and second syllable reduction under the framework of prosodic morphology. It would also be interesting to know if the syllable reduction in these T-Ideos is a process of shortening as a result of affixation due to binarity restrictions and weakening into affixed syllabic consonants, considering the fact that maximal and minimal word requirements for each Chinese tetrasyllabic word to have two binary feet, as was suspected in Duanmu (2007) and previously briefly discussed in section 4.6 (pp. 70). This will also be further analyzed in my upcoming paper on the root-affix asymmetry in NEM T-Ideo reduplication.

6.4 Concluding Remarks

There has been a recurring tide of interest in ideophones, phonosemantics, sound symbolism and iconicity in recent years. The very first sound symbolism conference was held in 1993; In 1998, the Linguistic Iconism Association was formed, and it now has nearly 300 members (Magnus, 2001). This dissertation is contributing to sound symbolism,

iconicity and phonosemantics in an attempt to provide a descriptive documentation and detailed overview of NEM tetrasyllabic ideophones that have been marginalized from the mainstream for decades. I anticipate that the reader may not agree with all the thoughts I offer, but I believe that I have presented strong evidence that the linguistic properties of NEM ideophones and their iconicity as well as pragmatic useage deserve a wider, continuing attention.

APPENDIX 1: THE NORTHEASTERN MANDARIN TETRASYL-

LABIC IDEOPHONE DICTIONARY

[*Dongbei Fangyan Si Yinjie Nishengci Cidian*[12]]

This dictionary includes 248 NEM four syllable ideophones plus their variants col-

lected from archived written contexts and audiovisual documents. Due to these ideophones'

flexibility in syntactic positions and functions within a sentence construction, every single

ideophone may serve as different parts of speech and acquire the syntactic function of the

derived parts of speech in different contexts. Therefore, there might be multiple parts of

speech under each inventory entry. The main entry and its variants are in boldface in ex-

actly the same font. Pronunciation of the entries are transcribed in IPA, representing the

way in which majority of NEM speakers produce these words. Each part of speech is ab-

breviated and listed in italics, representing the syntactic function that the ideophone may

acquire in various contexts. Example: the main entry "**cū liū cū liū** /tsʰu ljəu tsʰu ljəu/" has

a varirant "(*var*. **chū liū chū liū** /ʈʂʰu ljəu ʈʂʰu ljəu/)". In a syntactic construction, they may

function as verb: *"v.* walk or slide on the ice;" adverb: "*adv.* way or manner of walking on

icy surface;" or adjective, "*adj*. -de, slippery (surface)". English abbreviations for parts of

speech are listed as follows:

ono. onomatopoeia	*v.* verb
n. noun	*adv*. adverb
adj. adjective	-*de*, followed with an adjective suffix *de*

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[12] In terms of translating the corresponding word of '*ideophone*', this dissertation adopted *Nishengci* to re-
fer to ideophones and onomatopoeias.

A a

āo nao āo nāo /au nau au nau/ (*var.* **āo lao āo lāo** /au lau au lau/) *ono.* Sound of sudden, high-pitch yelling; *adj.* **-de**, loud arguing or yelling; *v.* making sudden loud noises by yelling.

B b

bāng lang bāng lāng /paŋ laŋ paŋ laŋ/ *ono.* Sound of stick pounding; *adj.* **-de**, stiffened or stoned.

bér lou wǎ kuàr /pɚ lə wa kʰwaɚ/ *n.* bumps on the surface; *adj.* **-de**, repulsing, objectionable (due to the appearance of uneven surface or defected face).

bǐ bǐ huā huā /pi pi xwa xwa/ *v.* to draw with fingers, to demonstrate with body language; *adj.* **-de**, full of body language.

bí ti lā xiā /pi tʰi la ɕja/ *adj.* unpleasant looking (due to excess watery nasal mucus); *v.* to discharge excess watery nasal mucus.

biā ji biā jī /pja tɕi pja tɕi/ (*var.* **piā ji piā jī** /pʰja tɕi pʰja tɕi/) *ono.* sound of loud eating, slapping, toothless eating or smoking pipes like the elderly; *v.* to slap, applause, to walk on bare feet, to land on watery surface; *adj.* **-de**, pleasant and loud (eating, walking, etc.) *adv.* (to eat, walk, applause, etc.) in a pleasant and loud manner.

biě biě xiā xiā /pjɛ pjɛ ɕja ɕja/ *adj.* w/ or w/o **-de**, saggy, lacking of inside air or stuffing (balls, plants, fruits, etc.), too skinny (person, animal, etc.).

biē qu bā lā /pjɛ tɕʰy pa la/ *adj.* w/ or w/o **-de**, feeling heaviness in the chest due to frustration, anger and unable to relieve; narrow space.

bū bū lēng lēng /pu pu ləŋ ləŋ/ *v.* to struggle from choking; to flutter wings; *adj.* not being obedient, struggling from death, fluttering like birds.

bū līng bū līng /pu liŋ pu liŋ/ *n.* (loanword from English 'bling-bling') sparkly things, decorations, jewelry and ornamented accessories; *adj.* blinky, sparkly, flashy, ostentatious.

C c

cēng cēng cēng cēng /tsʰəŋ tsʰəŋ tsʰəŋ tsʰəŋ/ (*var.* **cēng cēng cēng cēng** /tsʰəŋ tsʰəŋ tsʰəŋ tsʰəŋ/) *ono.* sound of walking rapidly, walking up stairs; *v.*

move rapidly; *adj*. **-de**, (walking/driving/running/passing by) very fast.

chāo chāo bā huǒr /tʂʰau tʂʰau pa xwɚ/ *n*. loud speaking, arguing or yelling; *v*. talk aloud; *adj*. **-de**, talking too loudly.

cī cī lā lā /tsʰz tsʰz la la/ *ono*. sizzling sound; *n*. burning pain; *adj*. **-de**, painful (burned skin); sizzling hot (weather).

cū liū cū liū /tsʰu ljəu tsʰu ljəu/ (var. **chū liū chū liū** /tʂʰu ljəu tʂʰu ljəu/) *v*. walk or slide on the ice; *adv*. way or manner of walking on icy surface; *adj*. -de, slippery (surface).

D d

dǎ da hā ha /ta ta xa xa/ *v*. joke around; n. joking around

dáo chi dáo chi /tau tʂʰʐ tau tʂʰʐ/ *v*. dress up, decorate, renovate, clean up (house); *adv*. in a neat and trimmed way.

dáo dáo gū gū /tau tau ku ku/ (*var*. **dáo leng gū gū** /tau ləŋ ku ku/) *n*. soft, low, indistinct sounds; *v*. murmur; *adj*. **-de**, murmuring; *adv*. in a murmuring way.

dè de soū soū /tə tə səu səu/ *v*. get carried away; *adj*. being carried away.

dè le bā sōu /tə lə pa səu/ *v*. get carried away, show off; *adj*. **-de**, having objectionable look of being carried away.

dī dā dī dā /ti ta ti ta/ (*var*. **dī dī dā dā** /ti ti ta ta/) *ono*. sound of water dripping, clock ticking; *n*. fleeing (of time); *adj*. **-de**, fast (time elapses).

dí gu dí gu /ti ku ti ku/ (*var*. **dí di gū gū** /ti ti ku ku/, **jí ji gū gū** /tɕi tɕi ku ku/) *ono*. sound of murmuring; *v*. spek unintelligible murmurs or foreign languages; *n*. indistinct murmurs; *adv*. **-de**, (talk) in a soft, low, indistinct way.

dí li dāng lāng /ti lə taŋ laŋ/ *n*. hanging bundles; *adj*. **-de**, excess dangles. *adv*. dangly.

dí li dū lū /ti lə tu lu/ *n*. a bundle of dangling things; *adj*. **-de**, dangling.

dí li suàn guà /ti lə swɛn kwa/ (*var*. **dí līu suàn guà** /ti ljəu swɛn kwa/) *adj*. **-de**, hanging, dangling like a bundle of garlic braids, overloaded with dangling decorations; *n*. excess dangling things.

diǎo er lāng dāng /tjau ɚ laŋ taŋ/ *adj*. **-de**, state or quality of being lax, slur for derelict, indecent dressing, behaving like a hooligan; *adv*. in a manner of the hooligans.

dīng dīng dāng dāng /tiŋ tiŋ taŋ taŋ/ (*var*. **dīng dīng dōng dōng** /tiŋ tiŋ tʊŋ tʊŋ/; **dīng dīng duāng duāng** /tiŋ tiŋ twaŋ twaŋ/) *ono*. sound of loud hammering, hitting or pounding; *adj*. **-de**, producing loud noises.

dīng ling dāng lāng /tiŋ ləŋ taŋ laŋ/ (*var*. **dīng ling guāng lāng** /tiŋ ləŋ kwaŋ laŋ/) *n*. loud noises of hammering, knocking, playing percussion instruments, *adj*. **-de**, dangling (earrings, windchimes, bells, etc.); *adv*. in a dangle way (like earrings, windchimes, bells, etc.)

dū lū dū lū /tu lu tu lu/ *n*. a bundle of dangling things (like grapes); *adv*. in the manner of dangling bundles.

dū nāng dū nāng /tu naŋ tu naŋ/ (*var*. **dū dū nāng nāng** /tu tu naŋ naŋ/) *v*. murmur, produce low, indistinct sound, talk to oneself in a low, unintelligible voice; *adv*. in the manner of murmuring.

duāng duāng dāng dāng /twaŋ twaŋ taŋ taŋ/ *ono*. noises of heavy things fall, hammering, hitting, banging, etc. *adv*. in the manner of loud hammering, heavy downfall (hail), etc.

duáng duáng duáng duáng /twaŋ twaŋ twaŋ twaŋ/ (*var*. **duāng duāng**

dāng dāng /twaŋ twaŋ taŋ taŋ/) *ono*. noises of kongfu, punching, loud hammering, knocking, firecrackers, heavy downfall of hail, etc.

duī suī duī suī /twei swei twei swei/ (*var*. **duī duī suī suī** / twei twei swei swei/) *v*. to lose shape; *adv*. in the manner of losing shape, sitting without support; *adj*. **-de**, sitting without support, losing shape.

E e

èr hǔ bā jī /ɚ xu pa tɕi/ (*var*. **hǔ le bā jī** /xu lə pa tɕi/) *adj*. **-de**, bold, relentless, *adv*. boldly, relentlessly.

F f

fèi jìn bā lā /fei tɕin pa la/ *adj*. **-de**, arduous, requiring strenuous effort; *adv*. in the manner of making excessive effort.

fēr chi fēr chi /fɚ tʂʰʐ fɚ tʂʰʐ/ *n*. crying, weeping; *v*. weep, sob; *adj*. **-de**, weeping, sobbing.

G g

gā ba liū cuì /ka pə ljəu tsʰwei/ (*var.* **gā bu liū cuì** /ka pu ljəu tsʰwei/, **gā beng liū cuì** /ka pəŋ ljəu tsʰwei/) *adj.* **-de**, crispy and crunchy, efficient (in working, talking, pronouncing, etc.) adv. crispy and crunchy, efficient (in working, talking, pronouncing, etc.)

gā bēng gā bēng /ka pəŋ ka pəŋ/ *ono.* noises of chewing solid food, crunchy, sound of breaking solid things; *adj.* **-de**, crunchy, articulate in talking, insensitive and offensive talking.

gā bū gā bū /ka pu ka pu/ *ono.* sound of babies chewing and drinking; adv. in the manner of chewing and drinking like babies.

gā dēng gā dēng /ka təŋ ka təŋ/ *ono.* noises of walking in highheels, loud walking on wood floor; *adj.* **-de**, catwalking like a model; *adv.* in the manner of catwalking.

gà dér gà dér /ka tɚ ka tɚ/ *ono.* noises of a moving wood sedan chair, walking horses or donkeys, etc. *adv.* in the manner of wood sedan chairs or hammocks swaying and bouncing; *adj.* being carried away like riding in a sedan chair.

gā ga dā dā /ka ka ta ta/ (*var.* **gē gē dā dā** /kə kə ta ta/) n. unsolved issues, *adj.* **-de**, uneven, bumpy surface; holding grudges due to unsolved issues.

gá gá gá gá /ka ka ka ka/ *adv.* rather, very (cold, salty, sweet, new).

gá kǔ gá kǔ /ka kʰu ka kʰu/ *adj.* **-de**, overly bitter

gǎ la mō mō /ka lə mə mə/ *adj.* be like seashells or seasnails.

gà you gà you /ka jəu ka jəu/ *v.* move slowly or rhythmically backward and forward or from side to side; *adv.* (to sway or bounce) in the manner of wood sedan chairs or hammocks swaying and bouncing; *adj.* **-de**, being unsteady like sitting on hammocks or sedan chairs.

gā zhī gā zhī /ka ʈʂʐ ka ʈʂʐ/ *ono.* noises of cracking door, wood floor; *adj.* **-de**, walking on wood floor, cracking door opening.

gān bu lā xiā /kan pə la ɕja/ *adj.* **-de**, dry, crumbled or cracked food or things.

gān gan bā bā /kan kan pa pa/ *adj.* **-de**, dry, crumbled or cracked food, land, or things.

gáng gáng gáng gáng /kaŋ kaŋ kaŋ kaŋ/ *adv.* rather, very (solid, hard, well-connected, firm in rapports).

gér gér gér gér /kəɚ kəɚ kəɚ kəɚ/ *ono*. sound of giggling accompanied with gasping; *adj*. **-de**, giggling and gasping; *adv*. (to giggle and gasp) like fish spitting bubbles.

gè ge jī jī /kə kə tɕi tɕi/ (*var*. **gè ji gè jī** /kə tɕi kə tɕi/) *n*. battering in couples over trivial things; *v*. batter; *adj*. **-de**, repeated battering.

gè ying bā lā /kə jiŋ pa la/ *adj*. **-de**, objectionable, repulsive look of something.

gěn gěn jīu jīu /kən kən tɕjəu tɕjəu/ *adj*. **-de**, (food) chewy.

gěn jīu gěn jīu /kən tɕjəu kən tɕjəu/ *n*. sound of chewing on solid food.

gōu gōu dā dā /kəu kəu ta ta/ *v*. wrap an arm around someone's shoulder when walking, to flirt; *adj*. **-de**, flirting in an inappropriate time or place.

gǒu gǒu sōu sōu /kəu kəu səu səu/ (*var*. **gǒu sōu gǒu sōu** /kəu səu kəu səu/) *n*. ungenerous behaviors; *adj*. **-de**, miserly, ungenerous, in the manner of turning empty pocket inside out.

gōu lóu bā xiàng /kəu ləu pa ɕjaŋ/ (*var*. **gōu le bā xiàng** /kəu lə pa ɕjaŋ/) *adj*. objectionable look of being unstretched, distorted natural body, not standing straight up but hunched over or tilted.

góu lou góu lou /kəu ləu kəu ləu/ *v*. lean forward, hunch over; *adj*. **-de**, hunchbacked thin person, not standing upright.

gù dong bā lā /ku tʊŋ pa la/ *adj*. **-de**, being a weirdo, not able to build normal interpsonal relationships;

gū dū gū dū /ku tu ku du/ *ono*. sound of boiling liquid in a pot; *v*. to boil liquid in a pot, to make stew.

gǔ gǔ náng sāi /ku ku naŋ sɛ/ (*var*. **gǔ gǔ nāng sāi** / ku ku naŋ sɛ/) *adj*. overly stuffed.

gǔ gǔ qiū qiū /ku ku tɕʰjəu tɕʰjəu/ *v*. perform undercover activities, manipulate behind the scenes; *adj*. **-de**, being secretive, manipulative.

gǔ jí gǔ jí /ku tɕi ku tɕi/ *ono*. sound of sqeezing slimy balls or stepping in muddy puddles; *v*. to squeeze slimy balls.

gū lu gū lu /ku lu ku lu/ *ono*. noises of rolling, rumbling, growling stomach; *v*. roll over; *adv*. in a rolling manner.

gū nāng gū nāng /ku naŋ ku naŋ/ *v*. murmur, produce soft, low sounds; *adj*. **-de**, murmuring, moaning.

guā jī guā jī /kwa tɕi kwa tɕi/ *ono*. sound of applause; *v*. to applaud; *adj*. **-de**, scattered applause.

guāng bu cū liū /kwaŋ pə tsʰu ljəu/ (*var.* **guāng bu chū liū** /kwaŋ pə ʈʂʰu ljəu/) *adj.* **-de**, being naked, barren (land) without any coating or covering.

guāng lāng guāng lāng /kwaŋ laŋ kwaŋ laŋ/ *ono.* sound of operating machines, trains, etc. *adj.* **-de**, loud machines noises.

gūr guā gūr guā /kwɚ kwa kwɚ kwa/ *ono.* sound of frog croaking; *adj.* **-de**, croaking like a frog.

H h

hēi ba lā xiā /xei pa la ɕja/ (*var.* **hēi la bā xiā** /xei lə pa ɕja/) *adj.* insanely dark surroundings.

hēi bu lā jī /xei pə la tɕi/ (*var.* **hēi le bā jī** /xei lə pa tɕi/) *adj.* insanely dark surroundings, disgustingly black or dirty, dark skinned.

hēi bu liū qiū /xei pə ljəu tɕʰjəu/ (*var.* **hēi ba liū diū** /xei pə ljəu tjəu/) *adj.* dirty black, tanned skin tone.

hēi gu lōng dōng /xei ku lʊŋ tʊŋ/ (*var.* **hēi le gū dōng** /xei lə ku tʊŋ/) *adj.* insanely dark surroundings.

hēi xiū hēi xiū /xei ɕjəu xei ɕjəu/ *ono.* labor noises, sound of moaning during sex; *n.* sexual intercourse; *v.* make out; *adj.* **-de**, strenuous.

hēng hēng hā hā /xəŋ xəŋ xa xa/ *n.* the attitude of fudging in doing something; *adv.* in the manner of fudging and bungling.

hēng hēng jī jī /xəŋ xəŋ tɕi tɕi/ (*var.* **hēng jī hēng jī** /xəŋ tɕi xəŋ tɕi/) *ono.* moaning sound; *n.* loud moaning when sick, during sex, in labor, etc. *v.* to pretend to be sick, to moan.

hōng hōng lōng lōng /xʊŋ xʊŋ lʊŋ lʊŋ/ (*var.* **hōng lōng hōng long** /xʊŋ lʊŋ xʊŋ lʊŋ/) *ono.* sound of thunder, bombs, building clapse, etc. *adv.* like loud thunder, bumbs.

hōu jiān hōu jiān /xəu tɕjan ljəu tɕjan/ (*var.* **hōur jiān hōur jiān** /xəuɚ tɕjan xəuɚ tɕjan/) *adj.* cunning, crafty, (person) as slippery as an eel.

hōu tián hōu tián /xəu tʰjɛ xəu tʰjɛ/ *adj.* overly sweet, cloying.

hōu xián hōu xián /xəu ɕjɛn xəu ɕjɛn/ *adj.* overly salty.

hú ba lā qū /xu pə la tɕʰy/ (*var.* **hú le pā qū** /xu pə la tɕʰy/) *adj.* **-de**, overly burned things, indiscernible overcooked food.

hú ba làn kěn /xu pə lɛn kʰən/ *adj*. **-de**, indistinguishable burned things (dead bodies, food, etc.), indistinguishable animal or human remains after being eaten.

hū chī dài chuǎn /xu ʈʂʰʐ̩ tɛ ʈʂʰwan/ *adv*. strenuously, with a great effort accompanied with puffing and blowing when walking, running, in labor, etc.

hū chī hū chī /xu ʈʂʰʐ̩ xu ʈʂʰʐ̩/ *ono*. sound of puffing and blowing, heavy breathing; *v*. pant, gasp; *adj*. **-de**, gasping or panting from exertion, exhaustion, excitement, etc.

hū hū yōu yōu /xu xu jəu jəu/ *adv*. in the state of floating on running water, bouncing on sedan chairs, swaying on hammocks, walking on clouds, losing consciousness.

hú làn liē lie /xu lɛn ljɛ ljɛ/ *v*. babble, talk non-sense, brag.

hǔ le bā chāo /xu lə pa ʈʂʰau/ *adv*. ruthlessly, relentlessly, bold.

hǔ le bā jī /xu pə la tɕi/ (*var*. **hǔ ba lā jī** /xu pə la tɕi/) *adv*. ruthlessly, relentlessly, bold.

hú lu bàn piàn /xu lə pan pʰjan/ *adv*. get something roughly done, roughly wiping a surface with hands; *adj*. **-de**, unthorough cleaning.

hū shār hū shār /xu ʂaɚ xu ʂaɚ/ *v*. (long eyelashes) blink; (paper, wood floor, billboard or wall) swing in the wind, (house) about to fall apart; *adj*. **-de**, blinking, swinging in the wind, almost falling apart; *adv*. in the state of floating on running water, bouncing on sedan chairs, swaying on hammocks, walking on clouds, losing consciousness.

hú zi lā chā /xu zz la ʈʂʰa/ *adj*. untidy, dirty look of an unshaved face, covered with facial hair.

huá bu liū diū /xwa pə ljəu tjəu/ (*var*. **huá ba liū qiū** /xwa pə ljəu tjəu/) *adj*. **-de**, slippery, too slippery to catch or hold like a fish or soap, (person) crafty, cunning as slippery as an eel.

huā hua lā lā /xwa xwa la la/ (*var*. **huā la huā lā** /xwa la xwa la/) *ono*. sound of splashing water or rainfall; *adj*. **-de**, splashy, continuous rainfall.

huáng bu lā jī /xwaŋ pə la tɕi/ *adj*. **-de**, unpleasant brownish-yellow color (weather, etc.)

hún er huà er /xwn ɚ xwa ɚ/ *adj*. **-de**, dirty (face, surface, etc.), indistinguishable (oil painting).

J j

jī chi bái liē /tɕi ʈʂʰʐ pɛ ljɛ/ (*var*. **jī chi bái liǎn** /tɕi ʈʂʰʐ pɛ ljan/, **jī tóu bái liǎn** /tɕi təu pɛ ljan/**)** *adv*. (talk) in an unfriendly way, (argue) in an angry and unpleasant way.

jī ji gū gū /tɕi tɕi ku ku/ *v*. produce unintelligible sounds, murmur; *adj*. **-de**, murmuring, talking unintelligible foreign language, speaking in soft, low, indistinguishable voice.

jī jī wāi wāi /tɕi tɕi wɛ wɛ/ *adj*. **-de**, whining, complaining; *v*. to complain, whine.

jī jī zhā zhā /tɕi tɕi ʈʂa ʈʂa/ *ono*. sound of birds chirping, girls' jibber-jabbering; *adj*. **-de**, chirping (birds), chit-chatting, jibber-jabbering (women, girls).

jǐ jiǎo gā lá /tɕi tɕjau ka la/ *n*. corner, corner-like place; *adj*. **-de**, tiny, corner-like space.

jí le guǎi wār /tɕi lə kwɛ waɚ/ *adj*. **-de**, zigzag, snake shaped, having abrupt sharp turns.

jí li gū lū /tɕi lə ku lu/ *ono*. sound of rumbling stomach; *adj*. **-de**, (talk, speech sound) unintelligible or murmuring, *adv*. (walk, run) in a rolling manner, (work, get things done) in a hasty, unorganized manner.

jī li guā lā /tɕi lə kwa la/ *ono*. sound of speaking foreign languages; *adj*. **-de**, indistinguishable speech, speaking unintelligible foreign language.

jiàn ba cī liē /tɕjan pə tsʰz ljɛ/ *adj*. **-de**, dispicable (behaviors, person, etc.)

jiāo huáng jiāo huáng /tɕjau xwaŋ tɕjau xwaŋ/ (*var*. **jiáo huáng jiáo huáng** /tɕjau xwaŋ tɕjau xwaŋ/) *adj*. **-de**, super rich yellow.

jiāo lǜ jiāo lǜ /tɕjau ly tɕjau ly/ (*var*. **jiáo lǜ jiáo lǜ** /tɕjau ly tɕjau ly/) *adj*. super rich green.

jiáo suān jiáo suān /tɕjau swan tɕjau swan/ (*var*. **jiāo suān jiāo suān** /tɕjau swan tɕjau swan/) *adj*. **-de**, intolerably sour.

jìn er jìn er /tɕin ɚ tɕin ɚ/ *adv*. (talk) in a confident and convincing manner, (hard work) performed in a disciplined manner; *adj*. **-de**, energetic, well-disciplined (person).

K̲ ̲k̲

kā chā kā chā /kʰa ʈʂʰa kʰa ʈʂʰa/ *ono*. sound of crunching, breaking branches, screen/snapshots on computer, camera shots, etc. *adj*. **-de**, crunchy, flashy, etc.

kǎ me kǎ me /kʰa mə kʰa mə/ (var. **kǎ ma kǎ ma** /kʰa ma kʰa ma/) *adj*. excessive eye blinking, small-eyed; *v*. blink (small eyes).

kē chēn kē chēn /kʰə ʈʂʰən kʰə ʈʂʰən/ *v*. to shame, disgrace, humiliate, embarrass someone or organizations.

kē da kē da /kʰə ta kʰə ta/ (*var*. **kē de kē de** /kʰə tə kʰə tə/) *v*. to dust off by knocking against something, to warn or remind somebody in polite, unnice and indirect way.

kēng chi biě dù /kʰəŋ ʈʂʰʐ pjɛ tu/ *adj*. **-de**, speaking broken sentences, stuttering, stammering.

kēng chi kēng chī /kʰəŋ ʈʂʰʐ kʰəŋ ʈʂʰʐ̩/ *adv*. (speak) in a stuttering and stammering way, (work) arduously, (work) in a procrastinating manner.

kēng ji kēng jī /kʰəŋ tɕi kʰəŋ tɕi/ *adv*. in the state of pain crying, moaning; *adj*. **-de**, pain crying like babies.

kēng kēng jī jī /kʰəŋ kʰəŋ tɕi tɕi/ *adv*. (talk) in a hesitatant way in a low voice; *adj*. **-de**, hesitant, tentative, pausing before speaking.

kōu kou sōu sōu /kʰəu kʰəu səu səu / *adj*. **-de,** being miserly, overly stingy, ungenerous.

kū chā kū chā /kʰu ʈʂʰa kʰu ʈʂʰa/ *ono*. sound of explosive or relaxing diarrhea, running train, scrubbing skin with puff, sponge, pumice, etc. *adj*. **-de**, having relaxing or explosive diarrhea, *adv*. passing by like a running train.

kū kū jī jī /kʰu kʰu tɕi tɕi/ *adj*. **-de**, sobbing with convulsive gasping; *adv*. (sob) in a nonstop and gasping manner.

kuǎi le kuǎi le /kʰwɛ lə kʰwɛ lə/ *adv*. (walk) in an awkward way due to pain from injury or illness such as poliomyelitis; *v*. hobble.

kuāng chi kuāng chī /kʰwaŋ ʈʂʰʐ kʰwaŋ ʈʂʰʐ̩/ *ono*. loud noises of running train wheels; *adv*. eat in a devouring manner.

L l

lài lài jī jī /lɛ lɛ tɕi tɕi/ *adj*. **-de**, showing objectionable weakness and laziness, lack of robustness; *adv*. in the state of being a couch-potato or bed-potato.

lài le bā jī /lɛ lə pa tɕi/ *adv*. in the state of being a couch-potato or bed-potato; *adj*. **-de**, showing objectionable

weakness and laziness, lack of robustness.

làn làn hū hū /lan lan xu xu/ *adj*. **-de**, mashed (food or other substance).

lǎo me kā yǎn /lau mə kʰa jɛn/ *adj*. **-de**, doddering, *adv*. in the state of being a dodderer, (see) things with squinting due to old age and weakness.

lǎo tiān bā dì /lau tʰjan pa ti/ *adj*. **-de**, old (bachelor).

lē le tē tē /lə lə tʰə tʰə/ (*var*. **lā la tā tā** /la la tʰa tʰa/, **lē te lē tē** /lə tʰə lə tʰə/, **tē lē tē lē** /tʰə lə tʰə lə/) *adj*. **-de**, unorganized, untidy, unneatly dressed (person); *adv*. (walk) in a foot-dragging manner.

lèi yǎr bā chā /lei jaɚ pa tʂʰa/ *adj*. teary, watery-eyed, regretful; *adv*. (weep) in a regretful way.

lèng le bā jī /ləŋ lə pa tɕi/ *adj*. **-de**, being stupefied, distracted or zoning out, relentless.

liáo sāo liáo sāo /ljau sau ljau sau/ *v*. pick up flirty lines, flirt.

liū jiān liū jiān /ljəu tɕjan ljəu tɕjan/ (*var*. **liūr jiān liūr jiān** /ljəuɚ tɕjan ljəuɚ tɕjan/) *adj*. **-de**, extremely pointed and sharp, (person) cunning, crafty.

līu suān līu suān /ljəu swan ljəu swan/ (*var*. **līur suān līur suān** /ljəuɚ swan ljəuɚ swan/) *adj*. **-de**, overly sour.

liū zhí liū zhí /ljəu tʂʐ ljəu tʂʐ/ (*var*. **liūr zhí liūr zhí** /ljəuɚ tʂʐ ljəuɚ tʂʐ/) *adj*. **-de**, extremely straight and slippery (road, pole, etc.)

luō li luō suō /lwə lə lwə swə/ *adj*. **-de**, nagging, winding; *adv*. (talk) in a nagging, unpleasant way.

M m

mā sou mā sou /ma səu ma səu/ *v*. roughly wipe out on a surface; *adv*. (wipe) in a rough manner.

mái le ba tāi /mɛ lə pa tʰɛ/ *adj*. **-de**, objectionably, repulsively dirty.

mái mái tāi tāi /mɛ mɛ tʰɛ tʰɛ/ *adj*. **-de**, repulsively dirty.

máo lēng sān guāng /mau ləŋ san kwaŋ/ *adj*. **-de**, carelessly bold, clumsy and awkward, usually accompanied with bumping into furniture or dropping things; *adv*. in the state of clumsy.

máo máo lēng lēng /mau mau ləŋ ləŋ/ *adj*. relentless, carelessly bold; clumsy and awkward, usually accompanied with bumping into furniture or

dropping things; *adv.* in the state of clumsy.

mī feng mī feng /mi fəŋ mi fəŋ/ *adv.* (look) in a squinting manner; *adj.* **-de**, squinting (eyes).

mī lēng mī lēng /mi ləŋ mi ləŋ/ *v.* to take a short nap, have a brief rest; *adj.* **-de**, sleepy, drowsy.

mí mi hū hū /mi mi xu xu/ *adv.* in the state of being sleepy and drowsy; *adj.* **-de**, sleepy, drowsy, forgetful, unsober.

mī mī lēng lēng /mi mi ləŋ ləŋ/ (*var.* **mī mī dēng dēng** /mi mi təŋ təŋ/) *adv.* in the state of being sleepy and drowsy; *adj.* **-de**, sleepy, drowsy.

mī xī mī xī /mi ɕi mi ɕi/ *v.* to eat (loanword from Japanese).

miā ji miā jī /mja tɕi mja tɕi/ *ono.* sound of loud eating; *v.* chew loudly; *adv.* eat and chew in a noisy way.

mò mò jī jī /mə mə tɕi tɕi/ *adv.* in the state of procrastinating; *adj.* **-de**, nagging, winding, fudging with procrastination, leaving things unfinished or incomplete.

<u>N n</u>

náo chi náo chi /nau tʂʰʐ̩ nau tʂʰʐ̩/ *v.* to itch (skin); *adv.* in the state of uneasy; *adj.* being uneasy, anxious.

nào xin bā lā /nau ɕin pa la/ *v.* concern, worry; *adj.* **-de**, anxious, worrisome.

nè chòu nè chou /nə tʂʰəu nə tʂʰəu/ (*var.* **è chòu è chou** /ə tʂʰəu ə tʂʰəu/) *n.* sickeningly stinky smell; *adj.* **-de**, sickeningly stinky.

nēng chi nēng chī /nəŋ tʂʰʐ̩ nəŋ tʂʰʐ̩/ *adj.* **-de**, talking, breathing with nasal congestion; *adv.* (breathe, talk) in the manner of having nasal congestion.

nì ni hū hū /ni ni xu xu/ (*var.* **nì hū nì hū** /ni xu ni xu/) *v.* show physical affection, intimacy with someone; *adj.* **-de**, expressing physical affection.

nì ni wāi wāi /ni ni wɛ wɛ/ *adj.* overly intimate with someone, expressing too much intimacy; *adv.* overly affectionate; *v.* express affection through physical contact.

niān bu cū liū /njɛn bə tsʰu ljəu/ (*var.* **niān bu chū liū** /njɛn bə tʂʰu ljəu/, **niān bu lā jī** /njɛn bə la tɕi/, **niān la bā jī** /njɛn lə pa tɕi/) *adj.* **-de**, (person) don't talk much, being inactive and sedative.

nián bu lā jī /njɛn bə la tɕi/ (*var.* **nián la bā jī** /njɛn lə pa tɕi) *adj.* **-de**, unpleasantly sticky.

niǎn gu niǎn gu /njɛn ku njɛn ku/ *v.* use thumb and index fingers to twist threads.

niān le gū zhuā /njɛn lə ku ʈʂwa/ (*var.* **nián gu zhuā jī** /njɛn ku ʈʂwa tɕi/) *adj.* **-de**, unpleasantly sticky.

nián le hū xiā /njɛn lə xu ɕja/ *adj.* **-de**, annoyingly sticky.

niān niān bā bā /njɛn njɛn pa pa/ *adj.* **-de**, (person) don't talk much, being inactive and sedative.

nián nián hū hū /njɛn njɛn xu xu/ *adj.* **-de**, unpleasantly sticky, showing too much physical affection or intimacy with someone; *v*, express physical affection.

niāo niāo qiāo qiāo /njau njau tɕʰjau tɕʰjau/ (*var.* **niāo er qiāo er** /njau ɚ tɕʰjau ɚ/, **niāo niāor qiāo qiāo** /njau njauɚ tɕʰjau tɕʰjau ɚ/) *v.* to sneak into a place; *adv.* (move, act) in a secret manner.

niār bu chū liū /njɛɚ bə tsʰu ljəu/ (*var.* **niār bu chū liū** /njɛɚ bə ʈʂʰu ljəu/, **niār bu lā jī** /njɛɚ bə la tɕi/, **niār la bā jī** /njɛɚ lə pa tɕi/) *adj.* **-de**, (person) don't talk much, being inactive and sedative.

nǐng nǐng bā bā /niŋ niŋ pa pa/ *adj.* **-de**, twisted, being struggled to follow the rules; *v.* unwilling to obey, struggle to follow the rules.

níu bī hōng hōng /njəu pi xʊŋ xʊŋ/ *adj.* **-de**, cocky, flippant, insolent; *adv.* in the manner of being cocky and insolent.

nuǎn nuǎn hū hū /nwan nwan xu xu/ (*var.* **nuǎn nuǎn huō huō** /nwan nwan xwə xwə/, **nǎo nǎo hū hū** /nau nau xu xu/, **nǎo nǎo huō huō** /nau nau xwə xwə/) *adj.* **-de**, cozy warm; *v.* to get warm.

O o

ō shi ō shi /əu ʂʐ̩ əu ʂʐ̩/ *ono.* sound of chasing away animals, especially pigs, chickens, geese, etc; *v.* to chase animals away.

P p

pēr xiāng pēr xiāng /pʰəɚ ɕjaŋ pʰəɚ ɕjaŋ/ *adj.* **-de**, fragrant meal, rice, perfume, etc.

pī li pā lā /pʰi li pʰa la/ (*var.* **pí le pā lā** /pʰi lə pʰa la/) *ono.* sound of blast of water, rainfall, fire crakcers, etc. *adj.* **-de**, producing nonstop loud noises; *adv.* in a manner of a sudden

blast of water, rainfall, fire crackers, etc. in a nonstop scolding manner.

pí li pū lōng /pʰi lə pʰu lʊŋ/ (*var*. **pí li pū tōng** /pʰi lə pʰu tʰʊŋ/) *ono*. sound of a group of frogs or people jump into the water, loud noises of a person getting the rush and tumble; *adv*. in a hasty and tumbling manner.

pī li pū lū /pʰi lə pʰu lu/ *ono*. sound of a group of frogs or people jump into the water, loud noises of a person getting the rush and tumble; *adv*. in a hasty and tumbling manner.

pī pi pā pā /pʰi li pʰa la/ *ono*. sound of firecracking, slapping, firecrackers, etc. *adj*. **-de**, making loud noises of firecracking, slapping, firecrackers.

piā jī piā jī /pʰja tɕi pʰja tɕi/ (*var*. **biā jī biā jī** /pja tɕi pja tɕi/) *ono*. sound of loud eating, sucking toothless; *adj*. **-de**, eating with loud noises, sucking toothless.

piār piār piār piār /pʰjaɚ pʰjaɚ pʰjaɚ pʰjaɚ/ *adj*. **-de**, walking, running, skipping in a pleasant manner; *adv*. in the state of being carried away.

pīng ling pāng lāng /pʰiŋ liŋ pʰaŋ laŋ/ (*var*. **pīng le pāng lāng** /pʰiŋ lə pʰaŋ laŋ/) *ono*. sound of hammering, renovating houses, fire crackers, playing pingpang/table tennis, loud noises

from rush and tumble; *adv*. in the loud manner.

pīng pīng pāng pāng /pʰiŋ pʰiŋ pʰaŋ pʰaŋ/ *ono*. sound of hammering, gunshots, renovating houses, heavy things falling onto wood floor, firecrackers; *adv*. in the loud manner.

pír le piàr le /pʰiɚ lə pʰjaɚ lə/ *adj*. **-de**, untidy (room), scattered (odds and ends), unclean and disorganized (person).

pò bu lōu sōu /pʰə pə ləu səu/ (*var*. **pò yi lōu sōu** /pʰə i ləu səu/) *adj*. **-de**, broken, shabby (clothes, houses), underdressed.

pó pó mā mā /pə pə ma ma/ *n*. nagging and winding; *adj*. **-de**, (usually of a man) behaving womanishly, being fussy, whinny, winding and nagging like a woman.

pū chī pū chī /pʰu tʂʰʐ pʰu tʂʰʐ/ (*var*. **pū cī pū cī** /pʰu tʂz pʰu tʂz/) *ono*. sound of sudden burst of laughing, explosive diarrhea; *adv*. to spit up in an explosive manner; *adj*. **-de**, spitting out in a short burst, having explosive diarrhea, laughing in a sudden burst.

pū cī pū cī /pʰu tʂz pʰu tʂz/ *ono*. sound of delating balloon, tire, etc. *adv*. (deflate) slowly.

pú lu pú lū /pʰu lu pʰu lu/ *v.* to dust off.

pū pū tēng tēng /pʰu pʰu tʰəŋ tʰəŋ/ *v.* (birds) flap, flail, flutter wings prior to death, unwilling to obey the rules; *adj.* **-de**, flapping, flailing, fluttering around prior to death.

pū tōng pū tōng /pʰu tʰʊŋ pʰu tʰʊŋ/ *ono.* sound of jumping into water, heart beat; *adj.* **-de**, jumping into water consecutively, quickened heart beats due to nervousness, shyness, anger, etc.

Q q

qí chi kā chā /tɕʰi ʈʂʰə kʰa ʈʂʰa/ *ono.* sound of thunder and imagery of lightning; *adj.* **-de**, getting things done efficiently like lightning/flash;

qū gu qū gu /tɕʰy ku tɕʰy ku/ (*var.* **qū qu gū gū** /tɕʰy tɕʰy ku ku/) *n.* sound and imagery of whispering; *v.* squint (eyes), whisper in low voice; *adv.* in a whispering manner.

què qīng què qīng /tɕʰyɛ tɕʰiŋ tɕʰyɛ tɕʰiŋ/ *adj.* **-de**, (bruise, dark circles under eyes) purplish, bluish black.

què zǐ què zǐ /tɕʰyɛ zz tɕʰyɛ zz/ adj. **-de**, rich purple.

R r

rè hu rè hu /ʐə xu ʐə xu/ *v.* to warm up, heat up, cuddle, express physical affection or intimacy.

rè rè hu hu /ʐə ʐə xu xu/ *adj.* **-de**, warm, loving, affectionate.

rí rí rí rí /ʐʐ̩ ʐʐ̩ ʐʐ̩ ʐʐ̩/ *adv.* in a very fast manner like spinning wheels.

ruǎn ba lā tā /ʐwan pa la tʰa/ (var. **ruǎn le bā tā** /ʐwan lə pa tʰa/) *adj.* **-de**, oozy substance without a form or shape, can't hold together, sitting without support.

S s

sà bái sà bái /sa pɛ sa pɛ/ *adj.* **-de**, pale white.

shǎ bu lā jī /ʂa bə la tɕi/ (*var.* **shǎ lā bā jī** /ʂa lə pa tɕi/) *adj.* **-de**, being stupid, retarded, moron-like, usually with disrespectful connotations.

shā lēng shā lēng /ʂa ləŋ ʂa ləŋ/ *adj.* **-de**, being an efficient go-getter; *adv.* in an efficient manner.

shén shen dāo dāo /ʂən ʂən tau tau/ *adj.* **-de**, being superstitious, being objectionable mysterious; *v.* to perform spiritual or ritual related activities.

shí shi chēng chēng /ʂʐ̩ ʂʐ̩ ʈʂʰən ʈʂʰən/ *adj*. **-de**, overly stuffed; being honest and sincere; *adv*. (fall, punch, etc.) in a heavy manner.

shuǐ ba lāng jī /ʂwei pa laŋ tɕi/ *adj*. **-de**, overly diluted.

shuǐ dāng niào kù /ʂwei taŋ njau ku/ *adj*. **-de**, underdressed, unneatly dressed up, especially someone who is wearing saggy pants; *adv*. in an untidy, disorganized way.

shuǐ la guāng jī /ʂwei lə kwaŋ tɕi/ *adj*. **-de**, overly diluted.

shuǐ le bā chā /ʂwei lə pa ʈʂʰa/ *adj*. **-de**, overly diluted, losing sincerity or credibility, untrustworthy.

sī si bā bā /sz sz pa pa/ *v*. drag back and push forward, fighting over the paying bills; *adj*. **-de**, dragging and pushing back and forth for paying the bills; *n*. physical fights.

sī si hā hā /sz sz xa xa/ *adj*. **-de**, freezing cold, feeling hot and spicy; *adv*. in a shivering manner; *n*. mouth exhaling.

sōu le bā jī /səu lə pa tɕi/ *adj*. **-de**, bad smell of rotten food.

suān bu līu dīu /swan pə ljəu tjəu/ *adj*. **-de**, bitterly sour, having vinegar smell.

T t

tí le tāng lāng /tʰi lə tʰaŋ laŋ/ *adj*. **-de**, too long and over-stretched, saggy (pants); *adv*. (walk) in a foot-dragging way.

tí le tē lē /tʰi lə tʰə lə/ (*var*. **tí le tā lā** /tʰi lə tʰa la/) *ono*. sound of walking in flip-flops; *adj*. **-de**, untidy, unneatly, long, saggy and strechy (pants), sloppy appearance (person); *adv*. (walk) in a foot-dragging manner.

tí li dū lū /tʰi lə tʰu lu/ (*var*. **dí li dū lū** /ti lə tu lu/) *adj*. **-de**, hanging like a bundle of danglings; *adv*. in a dangling manner.

tí li tū lū /tʰi lə tʰu lu/ *ono*. sound of sniffling nasal mucus back up, slurping noodles; adv. (eat noodles) in a slurping manner.

tī tī tā tā /tʰi tʰi tʰa tʰa/ *ono*. sounds of walking with slippers or highheels; *adj*. **-de**, multiple people walking in a rushing manner, clock ticking.

tiē gu tiē gu /tʰjɛ ku tʰjɛ ku/ *v*. express intimacy by touching with cheek, show affection through physical closeness; *adj*. overly expressive of affection.

tīng ling guāng lāng /tʰiŋ liŋ kwaŋ laŋ/ (*var*. **tīng ling kuāng lāng** /tʰiŋ

liŋ kʰwaŋ laŋ/, **dīng ling kuāng dāng** /tiŋ liŋ kʰwaŋ laŋ/, **tīng ling dāng lāng** /tʰiŋ liŋ taŋ laŋ/, **dīng ling dāng lāng** /tiŋ liŋ taŋ laŋ/) *ono.* sound of clink, clang, loud hammering, noises of renovating houses, playing percussion instruments, etc.

tōng hóng tōng hóng /tʰʊŋ xʊŋ tʰʊŋ xʊŋ/ (*var.* **tòng hóng tòng hóng** /tʰʊŋ xʊŋ tʰʊŋ xʊŋ/, **tòng'er hóng'er tòng'er hóng'er** /tʰʊŋɚ xʊŋɚ tʰʊŋɚ xʊŋɚ/) *adj.* **-de**, rich red; blushed (face); *v.* blush, become red.

tǒng tǒng gū gū /tʰʊŋ tʰʊŋ ku ku/ *v.* poke someone secretly; *adj.* **-de**, secretive, hidden; *adv.* in a secretive manner.

tū lu fǎn zhàng /tʰuꞱ lə fɛn ʈʂaŋ/ *adv.* (work, talk) in an inconsistent manner; *adj.* **-de**, being in consistent in words, behavior, etc. untrustworthy (person), ineffective (work).

tū lu guāng jī /tʰu lə kwaŋ tɕi/ *adj.* **-de**, bald-headed, barren (mountain, land, etc.)

W w

wà lán wà lán /wa lan wa lan/ (*var.* **wàr lán wàr lán** /waɚ lan waɚ lan/)

adj. **-de**, super rich blue (sky, water, etc.)

wū jī liù shòu /u tɕi ljəu ʂəu/ *adj.* **-de**, feeling bored to death, feeling imprisoned.

wǔ le háo fēng /u lə xau fəŋ/ *adj.* **-de**, being hysterical, screaming, yelling, flailing with extreme emotions.

wū le wū le /u lə u lə/ *ono.* sound of murmuring; *v.* (man) produce nonstop soft, low sounds, talk annoying indistinguishable language; *adv.* (talk) in a nonstop, distractive, indistinguishable manner.

wū lu āo lāo /u lu au lau/ (*var.* **wū lu nāo nāo** /u lu nau nau/, **wū wu nāo nāo** /u u nau nau/, **wū wu āo āo** /u u au au/) *adj.* **-de**, loud screaming, yelling, arguing; *v.* yelling loudly.

wū qi mō hēi /u tɕʰi mə xei/ (*var.* **wū qi mā hēi** /u tɕʰi ma xei/) *adj.* completely invisible dark; *n.* deep darkness, insanely dark surroundings.

wǔ wǔ xuān xuān /u u ɕwɛn ɕwɛn/ *v.* bluffing, chasing something away through flailing arms; *adv.* (talk) with flailing and body languages; *adj.* **-de**, bluffing, flailing.

wū wū yā yā /u u ja ja/ *ono.* sound of Peking opera; *adj.* **-de**, producing

sounds of Peking opera, mimicking Peking opera.

wǔ wǔ zhā zhā /u u ʈʂa ʈʂa/ *adj.* **-de**, flailing, hovering, dancing with stretched arms and legs; *adv.* (behave) exaggerately, (act, behave) in an overdramatic or artificial manner.

X x

xí ba làn jiàn /ɕi pa lan tɕan/ *adj.* **-de**, surprisingly cheap in price.

xī bu lēng tēng /ɕi pə ləŋ tʰəŋ/ *adj.* **-de**, watery, diluted liquid.

xì bu liān tiān /ɕi pə ljan tʰjan/ *adj.* **-de**, (person) skinny and tall like a stick/pole; *adv.* like a pole.

xī gu nāng nāng /ɕi ku naŋ naŋ/ (*var.*

xī gu nāng sāi /ɕi ku naŋ sɛ/) *adj.* **-de**, overly diluted, filled with oozy and slimy substance; *adv.* in a manner of watery, oozy and slimy.

xī le guāng tang /ɕi lə kwaŋ tʰaŋ/ *adj.* **-de**, overly diluted, filled with liquid; *adv.* difficult to hold (liquid).

xí le mǎ hā /ɕi lə ma xa/ (*var.* **xí de mǎ hā** /ɕi tə ma xa/) *adv.* in a manner of forgetful, careless, inconsiderate; *adj.* **-de**, being forgetful, careless, inconsiderate, etc.

xī li hú tū /ɕi li xu tʰu/ (*var.* **xī le hú tū** /ɕi lə xu tʰu/, **xī le hú dū** /ɕi lə xu tu/) *adj.* **-de**, being folly, forgetful, careless, inconsiderate, etc.

xī li huā lā /ɕi li xwa la/ (*var.* **xī le huā lā** /ɕi lə xwa la/) *adj.* **-de**, a sudden blast of water, rainfall, etc., being defeated completely; *adv.* in a diluted, watery manner, in the state of being defeated, being unable to hold together.

xí suì xí suì /ɕi swei ɕi swei/ *adj.* **-de**, (glass, bread, cars) being crushed into pieces, (heart) being broken into pieces; (analysis) providing with full details; *adv.* in a detailed manner, in the state of being crushed, broken, not able to hold together.

xī tǎng huā lā /ɕi tʰaŋ xwa la/ (*var.* **xí tǎng huā lā** /ɕi tʰaŋ xwa la/) adj. **-de**, dripping, spilling all over the place, dripping from the roof, melting ice dams, being defeated completely.

xī xi hā hā /ɕi ɕi xa xa/ *ono.* sound of giggling, human laugher; *adj.* **-de**, unserious, casual; adv. in the manner of unserious, casual, joking around.

xiā me kā chī /ɕja mə kʰa ʈʂʰz̩/ *adj.* **-de**, being blind; adv. in a manner of squinting, being blind.

xū tóu bā nǎo /ɕy tʰəu pa nau/ *adj.* **-de**, objectionable behavior of being a "yes-man"; *v.* to endorse or support without criticism every opinion from superiors or people around.

xù xù dāo dāo /ɕy ɕy tau tau/ *adj.* **-de**, talkative, talking endlessly and repetitively, nagging about something; *adv.* (complain, criticize) in a nonstop, repetitive manner.

xuě le hū lā /ɕyɛ lə xu la/ (*var.* **xiě le hu lā** /ɕjɛ lə xu la/, **xuě hu lā xiā** /ɕyɛ xu la ɕja/, **xiě hu lā xiā** /ɕjɛ xu la ɕja/) *n.* bloody scene; *adj.* **-de**, bloody, spilled, covered with blood; *adv.* cover or stain with blood.

Y y

yáng de èr zhèng /jaŋ tə ɚ ʈʂəŋ/ *adj.* **-de**, being mentally absent, unable to focus, feeling spacey, *adv.* in the state of being spacey, zoning out, mentally absent; *v.* be absent-minded, zone out.

yī yī yā yā /i i ja ja/ *ono.* sound of babies' first sounds, of singing Peking opera, of producing basic sounds in a foreign language; *adj.* **-de**, babbling, singing Peking opera, producing basic sounds in a foreign language; *v.* (babies) produce first sounds, (people)

learning basic sounds in a foreign language, sing Peking opera.

yóu hēi yóu hēi /jəu xei jəu xei/ (*var.* **yóu hēr yóu hēr** /jəu xəɚ jəu xəɚ/) *adj.* **-de**, oily, shiny black.

Z z

ze ze ze ze /zə zə zə zə/ *ono.* sound produced when feeling pity, shocked, disagree, distain, sympathetic; *adv.* in a manner of pity, shocked, demean, disagree or distain.

zhèng zhèng hē hē /ʈʂəŋ ʈʂəŋ xə xə/ *adj.* **-de**, being spacey, absent-minded; *adv.* in the state of being spacey.

zhí ba lēng dēng /ʈʂʐ̩ pa ləŋ təŋ/ (*var.* **zhí ba lēng tēng** /ʈʂʐ̩ pa ləŋ tʰəŋ/) *adv.* in a manner of overly straightforward, insensitive and blatant; *adj.* **-de**, being overly straightforward, brutally honest, having an unconfortable and objectionable look of standing straight up.

zhī leng bá qiào /ʈʂʐ̩ ləŋ pa tɕʰjau/ *adj.* **-de**, untamed and puffy (hair, bushes, etc.), unobedient (personality); *adv.* in an untamed, unconquerable manner.

zhòu ba lā jī /ʈʂəu pə la tɕi/ (*var.* zhòu la bā jī /ʈʂəu lə pa tɕi/, zhòu bu lā jī

/ʈʂəu pə la tɕi/) *adj*. **-de**, having a repulsive look of a wrinkled surface; *adv*. in an unpleasantly wrinkled manner.

zhòu zhòu bā bā /ʈʂəu ʈʂəu pa pa/ *adj*. **-de**, wrinkled; *adv*. in a wrinkled manner.

zhuàn zhuàn mē me /ʈʂwan ʈʂwan mə mə/ *v*. spin around; *adj*. spinning.

zī zī wā wā /zz zz wa wa/ (*var*. **zī wā zī wā** /zz wa zz wa/) *ono*. sound of high-pitched screaming, squeaking, white noise; *adv*. with high-pitched screaming, squeaking sounds.

APPENDIX 2: ABBREVIATIONS

ADJ	adjective	IDEO-ADVL	ideophone as adverbial
ADV	adverb	IDEO-V	ideophone as verb
attr.	attributive	N	noun
C-V	causative verb	NEG	negative
CL	classifier	OBJ	object
CMPL	complements	ONO	onomatopoeia
DET	determiner	pred.	predicative
EXCL	exclamation	SUB	subject
Ideo	ideophone	T-Ideos	tetrasyllabic ideophones
IDEO-ADJ	ideophone as adjective	V	verb
IDEO-ADV	ideophone as adverb		

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