A basic description of Yilan Creole phonology: with a special focus on the Aohua dialect

宜蘭クレオール音韻論の基礎的記述：澳花方言に着目して

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Abstract

This study aims to provide a basic description of the phonology of the Aohua dialect of Yilan Creole, which is a Japanese-based creole which imports features of Atayal, an Austronesian language. In Chapter 1, the basic information about Yilan Creole and the background knowledge are introduced. Then the segmental phonology of the Aohua dialect is discussed in Chapter 2. Next, syllable structure and phonotactics are discussed in Chapter 3. Chapter 4 describes the stress system of the Aohua dialect. The intonation of the Aohua dialect is described in Chapter 5, and the conclusion is given in Chapter 6.

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Abbreviations

1	first person
2	second-person
ADV	adverbial
ASP	aspect
AUX	auxiliary
EXCLM	exclamative
GEN	genitive
IMP	imperative
NEG	negative
NOM	nominative
NPST	non past
PROG	progressive
PST	past
Q	question particle
SG	singular
SPF	sentence-final particle

Chapter 1

Introduction

This chapter gives basic information about Yilan Creole and introduces the background knowledge of current study. This chapter is arranged as follows.

Section 1.1 includes the basic status of Yilan Creole. The population, geographic information, current situation and so on. Section 1.3 provides the historical background of Yilan Creole and its formation process. In Section 1.5, an overall review of previous studies is given. Section 1.6 provides necessary information of current studies, including the dialect under study, the method and information of the data, and the sources.

1.1 Yilan Creole: a Socialinguistics Introduction

Yilan Creole is a Japanese-based creole that is spoken in north-eastern Taiwan[1]. Its superstratum is Japanese, the substratum is said to be Atayal (and Seediq[2]), which are both Austronesian languages spoken in Taiwan, and is also contributed by Taiwanese Mandarin and Taiwanese Minnan (Sanada and Chien, 2012). It is first reported by Sanada and Chien in 2007, and the name "Yilan Creole" was given at the same time. In some previous studies, Yilan Creole is also called the "Hanhsi (or Hanxi) dialect of Atayal". However, it is a completely different language from Atayal, thus defining it as a dialect of Atayal is inappropriate. Moreover, "Hanhsi dialect" is a dialect of Yilan Creole, while there are different variations within it.

[1]The map of Taiwan as illustrated in Figure 1.1 is adapted from d-maps.com (https://d-maps.com/carte.php?num$_c$ar=75&lang=en).

[2]The first generation of Yilan Creole are the indigenous people of Atayal and Seediq, so it is possible that Seediq also contributed to Yilan Creole. However, there is no clear evidence indicating that Seediq also contributed to Yilan Creole. Therefore, in most previous studies, the substratum of Yilan Creole is said to be Atayal. According to Sanada (2013), the stress system may be affected by Seediq.

The speakers of Yilan Creole are mainly distributed in four villages located in Yilan (宜蘭) County. The location of Yilan County is as illustrated in Figure 1.2. The four villages are Tungyueh (東岳), Hanhsi (寒溪), Aohua (澳花) and Chinyang (金洋), as illustrated in Figure 1.3. Officialy, Tungyueh, Aohua and Chinyang belongs to Nan'ao (南澳) Town, while Hanhsi Village belongs to Datong (大同) Town. Speakers in the four villages have their own variations (Sanada and Chien, 2008). According to the consultants, they can determine speakers from other villages by their accent. Besides regional difference, there are also differences between speakers from different generations.

Figure 1.1: Location of Taiwan

Figure 1.2: Yilan County, Taiwan

The precise speaker number of Yilan Creole is unknown yet. The population of four villages is around 3,300 in August 2021[3]. However, not all the residents in the four villages are Yilan Creole speakers. For instance, in Hanhsi Village, Yilan Creole speakers mainly live on Hanhsi Road (寒溪巷) and Hsi Fang Lin Road (四方林巷), while people who live on other roads speaks Atayal (Qiu, 2015). So the accurate number of the native speaker is possibly less than 3,000.

Figure 1.3: Four villages where Yilan Creole is spoken (Chien and Sanada, 2010*a*,*b*)

In each village, Yilan Creole has different names like *nihongo* (which means Japanese) or *zibun no hanasi* (which means our language) (Sanada and Chien, 2012). The names of Yilan Creole called by native speakers are (1).

(1) Hanhsi: *kangke no ke*, *kangke no hanasi*, *nihongo*, 寒溪泰雅語 (Hanhsi Atayal)
Tungyueh: *tang-ow no ke*, *tang-ow no hanasi*, *nihongo*, 地方語言 (local language)
Chinyang: *kinus no hanasi*, *nihongo*, 博愛路的話 (the language of Bo-ai Road)
Aohua: *zibun no hanasi*, *nihongo*, 日本土話 (Japanese dialect)

(Sanada and Chien, 2012)

In the names used in Hanhsi Village and *kangke* refers to the village itself, and *ke* originated from the Atayal word which means 'language'. while the word *hanasi* has the same meaning but originated from Japanese. The *no* inserted between the location and the word 'language' expresses possession, so *kangke no ke* and *kangke no hanasi* both mean 'language of Hanhsi'. *nihongo* means 'Japanese'. In the names used in Tungyueh Village,

[3]The population data are from the homepage of the Civil Affairs Department of Yilan County. In August 2021, the populations of four villages were as follows: Hanhsi 1150, Tungyueh 567, Chinyang 620, Aohua 973.

tang-ow refers to Tungyueh Village. As for names used in Chinyang Village, *kinus* refers to one of the tribes in Chinyang Village. Bo-ai Road (博愛路) is a road in Chinyang Village, where Yilan Creole speakers live. In the names used in Aohua Village, *zibun* is of Japanese origin and means 'myself'. Aside from (1), according to my investigation, speakers of Aohua also use *dayraksuy no hanasi* to refer to the language. *Dayraksuy* (大濁水) is the name of the river nearby the village (see Section 1.6.1), and is used to indicate the village.

People outside of the Aohua Village use expressions like "our language," other villages all call Yilan Creole as the language of the place. In contrast, all four villages have the name "nihongo." Aohua Village even has a name in Taiwanese Mandarin, 日本土話, saying the language is a Japanese dialect. The fact that they call it Japanese shows how the speakers and non-speakers see the language. However, some speakers do identify it as their own language instead of Japanese[4].

Like many other pidgins and creoles, Yilan Creole was formed during the colonization of Japan. It might be the only Japanese-based creole known so far.

1.2 Contributing Languages

This section gives basic information of the contributing languages of Yilan Creole respectively, which are the languages that have contributed to the shaping of Yilan Creole: Japanese, Atayal, Taiwanese Mandarin, and Taiwanese Minnan.

Japanese is an agglutinative language and has its verb consistently at its final position. In Japanese, suffixes and enclitics are used frequently, while there are not many prefixes and proclitics. Japanese has a lexically determined pitch-accent system, where each lexeme has a lexically determined accentual position (See Kubozono (2018) for Japanese pitch accent system). Japanese is not typologically homogeneous but comprises various local dialects which may be phonologically and morphosyntactically quite distinct from each other. During the Japanese occupation, many Japanese people migrated from Japan to Taiwan from western Japanese, especially Kyūshū (九州) area (Sanada, 2015*b*). Thus, Yilan Creole may be contributed by not only standard Japanese, but also the dialects of western Japan or the Kyūshū area. For instance, in Yilan Creole, *oru* is used to mean 'be' instead of *iru*, while the former form is generally used in western Japanese dialects (Sanada and Chien, 2012). Thus, when we discuss Japanese in the current study, we do not indicate standard Japanese, but include the aggregation of the dialects that were spoken by Japanese during their occupation.

Atayal is the language of the indigenous Atayal people of Taiwan. It is an Austronesian language and contains

[4]In Sanada and Chien (2012), a consultant, who was born in 1936, from Tungyueh Village identifies Yilan Creole as their mother tongue, a language which is different from Japanese.

two major dialects: Squliq, C'uli' (Huang and Wu, 2016; Rau, 1992). The distribution of Atayal is widely over one-third of the mountainous areas in Taiwan (Rau, 1992), and the Squliq dialect and the C'uli' dialect in different areas may vary (Huang and Wu, 2016). Atayal is a verb-initial language, and has a voice/focus system which is a characteristic of Austronesian languages (Huang and Wu, 2016).

Taiwanese Mandarin is a variation of Chinese that is spoken in Taiwan (Chen, 1999; Cheng, 1985). Taiwanese Mandarin is an isolating language and has few inflection in its morphology, and its basic word order is SVO. It shares some syntactic features with Peking Mandarin, though is still different in many aspects due to the influence by Taiwanese Minnan (a variation of Minnan also spoken in Taiwan) and other varieties from southern China (Cheng, 1985).

1.3 Historical Background

Yilan Creole emerged during the Japanese occupation in 1895-1945. There was a migration policy that made indigenous people living in the mountains move to the plain fields. According to Sanada (2015*b*), the migration policy was the main cause of the formation of Yilan Creole. Due to the policy, indigenous people from different ethnic groups were forced to move to the same village. All four villages speaking Yilan Creole are constituted by Atayal and Seediq tribes (Chien and Sanada, 2010*a*). Atayal and Seediq are both Atayalic languages, although they have split up over 1600 years ago (Li, 1996). As a result, Atayal and Seediq people cannot understand each other. However, they were forced to move to the same villages during the occupation. According to Chien and Sanada (2010*a*); Sanada (2015*b*), in the villages where Atayal and Seediq lived together, two phenomena happened as a result of the language contact between Atayal, Seediq and Japanese. One is language shift, and the other is the creation of Yilan Creole.

Based on the record in Utsushikawa et al. (1935), Seediq people started to shift from Seediq to Atayal, despite the fact that they were the majority in the Riyohen tribe (リヨヘン社；利友亨社). It is unknown whether this kind of language shift did also appear in other tribes or not. However, the historical facts suggest that the contact between Atayal and Seediq may have led to language variation.

According to the assumption by Chien and Sanada (2010*a*) and Sanada (2015*b*), Atayal and Seediq people in Tungyueh, Hanhsi, Aohua, Chinyang choose to use their second language, Japanese, as their lingua franca in order to communicate with each other as well as Japanese people. However, the lingua franca was not really Japanese. It was a pidgin that is based on Japanese and also adopts Atayal features. When the children of the pidgin speakers were born, they learned the pidgin as their mother tongue. Then the pidgin became a creole.

During the Japanese occupation, Japanese was the only official language in Taiwan and was promoted to replace all other languages on the island. However, after the occupation, the National Government of the Republic of China came and implemented another language policy, which forced Taiwanese people to speak only "Mandarin (國語; guoyu)"[5]. The language policy promoted "Mandarin" until the late 1980s, when the awareness of local languages (Taiwanese Minnan, Taiwanese Hakka (客家), and the aboriginal Austronesian languages) rose. Taiwanese Minnan is the most spoken one among the local languages.

It is not hard to imagine the influence Taiwanese Mandarin had on the Yilan Creole speakers. After the language contact with the Japanese ended at 1945, Yilan Creole was exposed to a Taiwanese Mandarin-dominant environment. As a matter of fact, there are lexicons come from Taiwanese Mandarin, and the word order may also be affected according to Chien (2016), as shown in (2).

(2) *wasi* *no* *mama* *tapuy-toru* *gohang*
1.SG GEN mother cook-ASP rice/meal
"My mother is cooking rice/a meal now."

(Chien, 2016, p.6)

In (2), the verb *tapuy-toru* comes before the object *gohang*. According to the description in Chien (2016), (2) is given by a Mandarin-dominant bilingual speaker. Chien (2016) points out that the use of SVO word order may be a result of the speaker's internal bilingual ability in Yilan Creole and Mandarin. Chien also said that the older speakers, in contrast, indicated the use of SVO word order is not correct and not natural.

1.4 Current Situation

As mentioned in 1.1, Yilan Creole has approximately 3300 speakers. However, most of the speakers are middle-aged and senior adults. This shows that Yilan Creole is not being passed onto future generations. As illustrated in Table 1.1, Yilan Creole is frequently used by people born between the 1930s and 1970s, yet people born after 1980 no longer use it. Instead, Taiwanese Mandarin (i.e. Chinese) became the main language they use in their daily life (Chien and Sanada, 2010*b*; Sanada and Chien, 2012).

[5] According to Cheng (1985), the standard model of "Mandarin (國語; guoyu)" that was made by the National Government possesses Peking Mandarin features only in a phonological aspect. As for the grammar, the influence of speakers of other varieties of Chinese (especially from southern China) appears to be the norm (Cheng, 1985).

Table 1.1: Language use in Tungyueh Village (Chien and Sanada, 2010*b*, p.352)

Year of birth			
1930s-1940	1940s-1950	1950s-1970s	1980 onward
(Atayal/Seediq)	Yilan Creole	Yilan Creole	(Yilan Creole)
(Japanese)	(Chinese)	Chinese	Chinese
Yilan Creole			

Languages given in parentheses () are less used or not used.

Similar to other many indigenous languages that gradually disappearing, Yilan Creole is a minor language comparing to Taiwanese Mandarin and Taiwanese Minnan. Therefore, it is threatened by the major languages and will possibly vanish in the future. Since Taiwanese Mandarin is used in school as well as many official settings, it is necessary for people to learn and speak Taiwanese Mandarin. Though the importance of indigenous language preservation is getting more attention these years, Yilan Creole is excluded due to its Japanese-like characteristic. As a part of indigenous language preservation, students can get extra points in high school entrance exams and university entrance exams if they pass the indigenous language certification exam (原住民學生升學優待取得文化及語言能力證明考試), for which Yilan Creole has once been included in as a dialect of Atayal ("Hanhsi Atayal") (Sanada and Chien, 2012). However, according to Sanada and Chien (2012), a consensus was not reached inside the Hanhsi Village. Meanwhile, the situation in three other villages was not considered. Some say that "Hanhsi Atayal" is not Atayal so it should not be included. As a result, "Hanhsi Atayal", i.e. Yilan Creole is excluded from the certification exam (Sanada and Chien, 2012).

According to the consultants of the current studies, children in Aohua Village use Taiwanese Mandarin to study, and learn Atayal in the indigenous language class. Obviously, the environment is difficult for children to acquire Yilan Creole as their mother tongue. Furthermore, many speakers think that the language they would like to pass on to the next generation is Atayal, instead of Yilan Creole. In conclusion, Yilan Creole is threatened by Taiwanese Mandarin and is indeed facing distinction .

1.5 Previous Studies

Yilan Creole was first reported by Sanada and Chien (2008), and its name was also proposed at the same time. Yilan Creole used to be called the "Hanhsi dialect of Atayal". However, it is not a dialect of Atayal, nor is it spoken only in the Hanhsi Village.

Since Sanada and Chien (2008), several studies of Yilan Creole have been done in different aspect (Sanada, 2013, 2015*a*; Chien, 2016, 2019*b*,*c*; Qiu, 2015). However, most of the studies are based on the variation in Tungyueh Village. Only a few of them are about the variation in Hanhsi Village. Studies of variation in Aohua Village and Chinyang Village are unknown so far. Given that there are big differences between the variations between the four villages, it is necessary to investigate and study all four villages. Therefore, this study is the first attempt to give a description of the phonology of the Aohua dialect. See Section 1.6.1 for a fuller account of the scope and aim of the present study.

By comparison, the Tungyueh dialect is the most studied dialect among the four dialects of Yilan Creole. After the first report by Sanada and Chien (2008), the general report is also made in Mandarin (Chien and Sanada, 2010*a*) and English (Chien and Sanada, 2010*b*). Since then, several works are published in Japanese and English in terms of different linguistics features. A basic vocabulary book is published by Chien and Sanada (2010*c*). Chien and Sanada (2011) studied the negation in Yilan Creole and clarified the functional difference between the two negation suffixes *-ng* and *-nay*. Sanada (2013) and Sanada (2015*a*) discuss the phonology of Yilan Creole and explain the sound substitution phenomenon in it. Chien (2015) and Chien (2018*a*) give information on the lexicons of Yilan Creole. In addition, Chien (2016) discusses the case-marking system, Chien (2018*b*) discusses the pronouns, Chien (2019*b*) discusses the demonstrative pronouns, Chien (2019*c*) discusses the numeral system, and Chien (2019*a*) discusses the interrogatives.

As for Hanhsi dialect, Abe et al. (2008) has reported data of Hanhsi dialect based on the textbook which was made by the government and discussed the problems between Yilan Creole and the indigenous language tests in Taiwan. Qiu (2015) identifies the first descriptive grammar of Yilan Creole based on data from Hanhsi Village. Qiu (2015) gives a basic description of phonology, morphology, syntax and focuses on predicate positions.

1.6 The Current Study

The aim of the current study is to give a detailed description of the phonology of the Aohua dialect of Yilan Creole, based on the data from middle-aged speakers. While the differences between each generation is overt, it is difficult to make a generalization of all speakers. Hence the current study focuses on middle-aged speakers. Though there are also individual differences between each consultant, the current study presents the linguistic facts and report the tendencies and exceptions. Through the current study, the author expects to give a preliminary report of the phonology of the Aohua dialect.

1.6.1 The Aohua Dialect and Its Speaker

The dialect described in the current study is the Aohua dialect of Yilan Creole, henceforth Aohua in the following chapters. It is spoken in the Aohua Village, which is located at the border of Yilan County and Hualien County. The location of Aohua Village is as illustrated in Figure 1.3 in Section 1.1, and the geographic information inside the Aohua Village is as illustrated in Figure 1.4. The settlement of the village is near the border of the Yilan county and the Hualien county, and is the southernmost point of the scope where Yilan Creole is spoken.

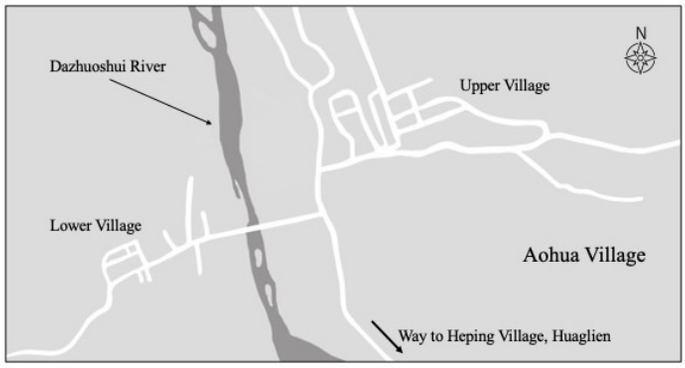

Figure 1.4: Aohua Village

As shown in Figure 1.4, Aohua Village is divided down the middle by the Dazhuoshui river (大濁水溪) into 2 parts, the Upper Village (上村 or 上部落) and the Lower Village (下村 or 下部落), which are not official geographical names. All of the government agencies and the elementary school are located in the Lower Village. The Dazhuoshui river is called *Dayraksuy* by people from Aohua, and this name *Dayraksuy* also refers to the village since the village is along the river. They also refer to themselves as *Dayraksuy no ningen* 'people from Dayraksuy (Aohua)'. Most people in the Aohua Village are Atayal.

As discussed above in Section 1.5, previous studies about Aohua are much less than other dialects.

1.6.2 Field Methods and Data

In the current study, several investigations have been conducted in order to get the necessary data. The investigations were held online or in person. My trips to Aohua and online investigation are summarized in Table 1.2.

Table 1.2: Field trip and online investigation

	Date	Investigation Type	Duration
1	2020/1/13	Field trip	1 day
2	2020/3/23	Field trip	1 day
3	2020/7/14	Online investigation	1 hour 18 minutes
4	2020/7/15	Online investigation	1 hour 4 minutes
5	2020/8/29	Online investigation	2 hours
6	2020/9/5	Online investigation	1 hour 22 minutes
7	2020/10/3	Online investigation	1 hour 42 minutes
8	2020/11/4	Online investigation	55 minutes
9	2021/1/4	Online investigation	58 minutes
10	2021/9/26-28	Field trip	3 days
11	2021/10/14	Field trip	1 day

During my investigation, I mainly used Taiwanese Mandarin to communicate with my consultants. Occasionally I communicated with consultants in the older generation with Taiwanese Mandarin mixing Standard Japanese (and tried to make it sound like Yilan Creole).

The field method I used mainly is the elicitation of words and sentences. In my investigation, I elicited basic words first, and asked them to translate sentences using the word. My wordlist is based on the *Linguistic Questionnaire for Asia and Africa OnlineLinguistic Questionnaire for Asia and Africa Online* by Minegishi (2000). My sentence list is based on the word list, but I did not get sentences for every word. Sometimes my consultants made sentences for me spontaneously. Besides words and sentences, I also interviewed consultants about the background of Aohua Village, including the history and the current situation of the village and Yilan Creole. Moreover, I collected data on discourse consisting of conversations among friends or family members. I was involved in the conversations sometimes. The data collected in Aohua is analyzed by PRAAT version 6.1.41.

During the investigation, consultants used different language codes depending on the listener and the contents of the conversation. While sometimes it is hard to tell which language code they are using, I only analyzed data that is indicated as *Dayraksuy no hanasi* 'Aohua's language' by my consultants. Other data is excluded from this current study.

According to Sanada and Chien (2012), in the Yilan Creole lexicon, around 10% originated from Taiwanese

Mandarin and Taiwanese Minnan. I recognized my consultants and other speakers using words that originated from Taiwanese Mandarin and Taiwanese Minnan during the conversation, though it was not very often. However, almost every native speaker of Aohua is bilingual in Yilan Creole and Taiwanese Mandarin and can speak Taiwanese Mandarin fluently[6]. On the contrary, they have no knowledge of Japanese, and some of them have little knowledge of Atayal[7]. Based on the aforementioned information, words from Taiwanese Mandarin and Taiwanese Minnan should be analyzed separately from a different perspective. Thus this study only discusses words of Japanese origin and words of Atayal origin. Words of Taiwanese Mandarin origin and words of Taiwanese Minnan are presented by Hanyu Pinyin system and Tâi-uân Lô-má-j Phing-im Hong-àn respectively[8]. Their underlying form and glossing annotation are surrounded by | | when appearing in the example sentences, as shown in (3).

(3) *kore* *ga* *liulian* *ga*
kore =ga |liulian| =ga
this =NOM |durian| =Q
"Is this durian?"

1.6.3 Consultants

Consultants from the Aohua Village, who provided the speech data during my investigation, are introduced as follows. The consultants are ordered by their age.

B. C.: female, 85 years old, born in the Hanhsi Village and moved to Aohua at the age of 20, has lived in Aohua since then. Bilingual of Taiwanese Mandarin.

H. M.: female, 79 years old, born in the old Chinyang Village[9], moved to Aohua in early years and left Aohua later, then moved back to Aohua again in her 50s and lived there until now. She has been in Japan for several years, thus has knowledge about Japanese. Also she can speak fluent Taiwanese Mandarin and has knowledge about Atayal.

F. M.: female, 75 years old, born in the old Chinyang Village and moved to Aohua when she was 7 years old, has lived in Aohua since then. Bilingual of Taiwanese Mandarin.

[6]Taiwanese Mandarin is the most used language in Taiwan, so all the speakers in Aohua can speak it fluently. People use it at work, school, and official occasions. Taiwanese Minnan is the second most used language in Taiwan, thus speakers in Aohua may have knowledge about it to some degree, depending on the speakers' personal experience outside the village.

[7]Speakers aged 80 or over may have little knowledge about Japanese, since their parents or themselves may have received Japanese education during the occupation. To my knowledge, most of the speakers in Aohua cannot understand Atayal though they can recognize it. Some elderlies may have little knowledge about Atayal, but can not speak it fluently. Also some speakers learn Atayal as a second language.

[8]Hanyu Pinyin system is a romanization system of Mandarin. Tâi-uân Lô-má-j Phing-im Hong-àn is a romanization system of Taiwanese Minnan. The tone is not presented in the examples in present study. This is because when the speakers pronounce words originated from Taiwanese Mandarin and Taiwanese Minnan within the Yilan Creole language code, the tone of the word generally disappears in order to adapt itself into the Yilan Creole, which is a stress language and does not have a tone feature.

G. Z.: female, 72 years old, born in and has lived in Aohua all her life, can speak fluent Taiwanese Mandarin, and also has knowledge about Atayal, Taiwanese Minnan and Japanese.

Z. L.: male, 68 years old, born in and has lived in Aohua all his life. He can speak fluent Taiwanese Mandarin.

Z. J.: female, 58 years old, born and raised in Aohua, moved to ananother city during her teenage years, then came back to Aohua later. Bilingual of Taiwanese Mandarin, and can speak fluent Taiwanese Minnan.

B. H.: male, 58 years old, born in Aohua, moved to another place when he was 9 years old, came back to Aohua when he was 20 and has been in Aohua since then. Bilingual of Taiwanese Mandarin.

Z. S.: male, 58 years old, born in Aohua, moved to another place when he was 8 years old, came back to Aohua when he was 46 and has been in Aohua since then. Bilingual of Taiwanese Mandarin.

H. N.: male, 51 years old, born and raised in Aohua, moved to another place for several years, then came back to Aohua for work, but still lives outside the village. Bilingual of Taiwanese Mandarin.

Y. H.: female, 45 years old, born and raised in Aohua, once moved to another city for years, then moved back to Aohua. Bilingual of Taiwanese Mandarin.

As mentioned above in Section 1.6, the present study focuses on middle-aged speakers, which are consultants aged between 40 to 60. The data of senior speakers is also mentioned in the present study in order to show the generation differences, but the tendencies suggested in this study is generally be based on middle-aged speakers' data.

[9] Aside the migration policy by the Japanese colonial government, the settlement of Chinyang Village has migrated one more time during the 1960s. The old Chinyang settlement was located near the Taipin Mountain (太平山), and had extremely inconvenient transportation. According to my consultant, people in the old Chinyang Village at that time spoke the C'uli dialect of Atayal and Yilan Creole.

Chapter 2

Segmental Phonology in Aohua

This chapter treats the phonemes in Aohua. In this analysis, the phonological system of Aohua features a phoneme inventory of seventeen consonants, six vowels, and two semi-vowels. The phoneme inventory differs between dialects, since there is only five vowels in the Tungyueh dialect (Sanada, 2013), while the Hanhsi dialect is said to have twenty-two consonants and six vowels[1](Qiu, 2015). Consonants are discussed first in Section 2.1, then vowels and semi-vowels are discussed in Section 2.2.

2.1 Consonants

As shown in Table 2.1, there are seventeen consonants in Aohua, two of them have restricted occurrence (/x/ and /'/). Phonemes are presented by the Atayal writing system reinforced by the Council of Indigenous Peoples and the Ministry of Education in Taiwan, except the velar nasal is represented by the IPA symbol 'ŋ' instead of the digraph 'ng' in the writing system in order to avoid misunderstanding. As for other segments, IPA symbols are in brackets, where these are differ from the orthographic symbols.

Since Yilan Creole's lexicon size is smaller than non-pidgin/creole languages, it is difficult to list all minimal pairs which justify every phonemic contrast I claim in Table 2.1. If there is no minimal pair, near-minimal pairs are given in the following criterion. When the phonemes in question can both appear on /# _V in words with different meanings, the author judges them as different phonemes. As for phonemes that have restricted occurrence, i.e. only appear on coda, examples with /V_# environment are given. Other examples are also given additionally.

[1]In Qiu (2015), segments are summarized without clarifying whether they are phonemic or phonetic. Thus it is unclear whether there really are twenty-two consonant phonemes and six vowel phonemes in the Hanhsi dialect.

Table 2.1: Consonants in Aohua

	bilabial		alveolar		velar		glottal
stops	p	b	t	d	k	g	’ [ʔ]
fricatives			s	z	x		h
affricates			c [ts]				
nasals		m		n		ŋ	
taps				r [ɾ]			
lateral approximants				l			

/p/ and /b/ :

/p/ and /b/ are realized as [p] and [b] respectively in Aohua, and they can both appear in words of Japanese origin and Atayal origin. Examples of /p/ and /b/ are shown in (4)~(6). (Jp refers to words of Japanese origin; Aty refers to words of Atayal origin.)

(4) a. *papak* [papak] ‘ears’ (Aty)
b. *ban* [baɴ~baŋ] ‘night’ (Jp)

(5) a. *hapa* [hapa] ‘leaf’ (Jp)
b. *oba* [oba~oβa] ‘exaggerated’ (Jp; loan word from English ‘*over*’)

(6) a. *opay* [opaj] ‘breast’ (Jp)
b. *abaw* [aβaw] ‘leaf’ (Aty)

According to Sanada (2013), in the Tungyueh dialect, the voiced stop /b/ is phonetically pronounced as [β], which is a feature of Atayal origin. Nevertheless, in Aohua, /b/ are basically pronounced as [b]. The author did observe the appearance of [β] when speakers are pronouncing Atayal-originated words or when /b/ is surrounded by vowels. The difference is phonetic and does not distinguish anything phonologically.

/t/ and /d/ :

/t/ and /d/ are realized as [t] and [d] respectively in Aohua, though the voiceless one, /t/, may be unstable with some speakers and will be discussed further later. /t/ can appear in both words of Japanese origin and Atayal origin, but /d/ can only appear in words of Japanese origin since it is a segment of Japanese origin (Sanada, 2013). Atayal does not have /d/ in its phonetic system. Examples are shown in (7), (8).

(7) a. *dakara* [dakara] 'therefore' (Jp)
b. *tane* [tane] 'seed' (Jp)

(8) a. *namida* [namida] 'tears' (Jp)
b. *buta* [buta] 'pork' (Aty)

/k/ and /g/ :

/k/ and /g/ are realized as [k] and [g] respectively in Aohua, and they can both appear in words of Japanese origin and Atayal origin. Examples of /k/ and /g/ are shown in (9)~(11).

(9) a. *kome* [kome~gome] 'rice' (Jp)
b. *gohan* [gohaɴ~gohaŋ] 'meal' (Jp)

(10) a. *naka* [naka] 'middle; inside' (Jp)
b. *buga* [buɣa] 'navel' (Aty)

(11) a. *akay* [akaj] 'red' (Jp)
b. *nagay* [nagaj] 'long' (Jp)

Similar to /b/, which was discussed earlier above, /g/ may be pronounced as [ɣ] in Atayal-originated words or when it is surrounded by vowels.

The voiceless velar stop [q] in Atayal is not observed in Aohua. Most of the words that came from Atayal and contain /q/ originally are pronounced as [k]. In fact, one of the consultants said that the word 'pumpkin' and

the word 'bag' have the same pronunciation, and she actually pronounced both words in [kabaŋ]. Other words that show the emergence of /k/ and /q/ is shown in (13)

(12) a. *kaban* [kabaŋ] 'pumpkin' (Atayal: *qabang*)
b. *kaban* [kabaŋ] 'bag' (Japanese: *kaban*)

(13) a. *kcyan* [kəc̣aɴ~kəc̣aŋ] 'buttock' (Atayal: *kcyan*)
b. *ketun* [ketuɴ~ketuŋ] 'corn' (Atayal: *qitun*)
c. *kuleh* [kuleh] 'fish' (Atayal: *qulih*)

Voiceless stops /t/ and /k/ have shown similar allophonic patterns whereby word-initial /t/ and /k/ (of words of Jpn origin) may be voiced, as illustrated in (14) to (15). When /t/ and /k/ appear in the word's initial position, and the word is of Japanese origin, it can be pronounced as [t], [d] and [k], [g]. Examples are shown in (14) and (15). The difference is phonetic and may differ between consultants.

(14) *tane* [tane~dane] 'seed' (Jp)

(15) *kawa* [kawa~gawa] 'river' (Jp)

In some cases, even [t^h]is acceptable, as shown in (16). So far, the author did not observe free variation [k^h] of /k/, but it will not be surprising if [k^h] is acceptable. This kind of free variation cannot be observed within a word or on word final position. Neither can it be found when pronouncing words of Atayal origin.

(16) *tayyoo* [t^hayyoo~tayyoo~dayyoo] 'sun' (Jp)

Also, the phonetic expansion cannot be observed on /p/ may be a result of that Japanese-originated word with initial /p/ is not found so far.

/s/ and /z/ :

/s/ and /z/ are realized as [s] and [z] respectively in Aohua, and they can both appear in words of Japanese

origin and Atayal origin. Both /s/ and /z/ are palatalized when preceding /i/ and /y/. Examples of /s/ and /z/ are shown in (17), and the palatalization examples are shown in (18) and (19).

(17) a. *sanko* [saŋko] 'three (quantifier)' (Jp)
b. *zenbu* [zembu] 'all' (Jp)

(18) a. *asi* [aɕi] 'leg; foot' (Jp)
b. *azi* [aʑi] 'taste' (Jp)

(19) a. *zitensya* [ʑitenɕa] 'bicycle' (Jp)
b. *zyu* [ʑu] 'ten' (Jp)

/c/ :

/c/ is the only affricate in Aohua and is realized as [ts]. It can appear in words of Japanese origin and Atayal origin. It only precedes high vowels /i/, /i/, /u/ when appearing on onset alone. Also, it is palatalized when preceding /i/ and /y/. Examples of /c/ are shown in (20), and the palatalized ones are shown in (21).

(20) a. *cikay* [tɕikaj] 'near' (Jp)
b. *cɨki* [tsɨki] 'moon' (Jp)
c. *cumetay* [tsumetaj] 'cold' (Jp)

(21) a. *cikay* [tɕikaj] 'near' (Jp)
b. *cyawan* [tɕawaŋ] 'bowl' (Jp)

The author judges it as a phoneme instead of an allophone of /t/ is because of the following data.

(22) a. *cumetay* [tsumetaj] 'cold' (Jp)
b. *tunux* [tunux] 'head' (Aty)

In (22), /c/ and /t/ can both precede /u/ in a word-initial position, which is a fact that fulfills our criterion of phoneme judgment.

/m/, /n/ and /ŋ/ :

/m/, /n/ and /ŋ/ are realized as [m], [n] and [ŋ] respectively in Aohua. /m/ and /n/ can both appear in Japanese-originated words and Atayal-originated words, while /ŋ/ can only appear in Atayal-originated words. Examples are shown in (23). Note that /ŋ/ is transcripted as *ng* in previous studies of Yilan Creole and Atayal writing system. In the present study, *ŋ* is used to prevent possible misunderstanding.

(23) a. *mune* [mune] 'chest' (Jp)
b. *naka* [naka] 'middle; inside' (Jp)
c. *ŋurus* [ŋurus] 'beard' (Aty)

The distinction between /n/ and /ŋ/ can only be observed in syllable-initial (onset) position, while most of the /n/ in the word final position are pronounced as [ŋ], but sometimes [ɴ]. However, [ɴ] and [ŋ] seems to have no difference to speakers in word final position. The neutralization of these two sounds makes it confusing whether it should be /n/ or /ŋ/ phonologically. In this study, [ɴ] and [ŋ] in word final position are seen as the realization of /n/. Examples are shown in (24).

(24) a. *gohan* [gohaɴ~gohaŋ] 'meal' (Jp)
b. *ban* [baɴ~baŋ] 'night' (Jp)

/r/ and /l/ :

/r/ and /l/ are realized as [ɾ] and [l] respectively in Aohua. The former can both appear in words of Japanese origin and Atayal origin, while the latter only appears in words of Atayal origin. Examples of /r/ and /l/ are shown in (25), (26).

(25) a. *rame* [ɾame] 'no' (Jp)

b. *lalaw* [lalaw] 'traditional hunting knife' (Aty)

(26) a. *osiri* [oɕiri] 'butt' (Jp)

b. *buli'* [buliʔ] 'small knife' (Aty)

/x/ and /h/ :

/x/ and /h/ are realized as [x] and [h] respectively in Aohua. The occurrence of /x/ is restricted. It only appears in words of Atayal origins, and only on word final position. Meanwhile, [h] can appear in words of both origin, and in word initial position, within a word, or word final position. Examples of /x/ and /h/ in word final position are shown in (27), and examples of /h/ in other positions are shown in (28).

(27) a. *tunux* [tunux] 'head; stone' (Aty)

b. *kuleh* [kuleh] 'fish' (Aty)

(28) a. *hebi* [hebi] 'snake' (Jp)

b. *hoyin* [hojiŋ] 'dog' (Aty)

c. *sehuy* [sehuj] 'taro' (Aty)

/'/ :

/'/ is realized as [ʔ] in Aouhua. It only appears in Atayal-originated words and only on word final position as a coda. Examples of /'/ are shown in (29).

(29) a. *buli'* [buliʔ] 'small knife' (Aty)

b. *mali'* [maliʔ] 'tongue' (Aty)

2.2 Vowels

There are six vowels in Aohua. Vowels are shown in Table 2.2 and are represented by the Atayal writing system. Note that the central high unrounded vowel can not be found in Atayal, so there is no symbol for it in the writing system. It is represented by the IPA symbol in the present study.

Table 2.2: Vowels in Aohua

	front	central	back
high	i	ɨ	u
mid	e		o
low			a

The vowel system of Aohua includes vowels in Japanese and Atayal, and a central high unrounded vowel that can not be traced directly to either Japanese or Atayal. Note that /u/ in Aohua is realized as [u], the same as Atayal, instead of [ɯ] in Japanese. Minimal pairs of vowels are given in (30), (31), (32) and (33).

(30) a. *aru* [aɾu] 'have' (Jp)
b. *iru* [iɾu] 'need' (Jp)
c. *oru* [oɾu] 'be' (Jp)

(31) a. *asa* [asa] 'morning' (Jp)
b. *asi* [aɕi] 'foot' (Jp)
c. *ase* [ase] 'sweat' (Jp)

(32) a. *karay* [karaj] 'salty; spicy' (Jp)
b. *karuy* [karuj] 'light' (Jp)

(33) a. *icu* [itsu] 'when' (Jp)
b. *ici* [itɕi] 'one' (Jp)

/ɨ/ and /u/ contrast, as illustrated in (34) to (36), where the two occur in the same environment and are not interchangeable. Note that /ɨ/ only appears in words of Japanese origin, and only after /s/ and /c/.

(34) a. *cɨki* [tsɨki] 'moon' (Jp)
b. *cumetay* [tsumetaj] 'cold' (Jp)

(35) a. *sɨpay* [sɨpaj~sɨppaj] 'sour' (Jp)
b. *suzusi* [sudzuɕi] 'cool (temperature)' (Jp)

(36) a. *nacɨ* [nacɨ] 'summer' (Jp)
b. *icu* [itsu] 'when' (Jp)

Besides the six vowels shown in Table 2.2, [ə] is also observed in Aohua. [ə] is a transitional, non-phonemic sound (vocoid; Pike (1943)) which is only found in words of Atayal origin. It is predictably inserted between consonant clusters (37), and this feature holds true for Atayal, which also has this vocoid (Li, 1980). If there is a word of Atayal origin with consonant cluster onset, [ə] is inserted between the consonants, and can not bear stress. Therefore, [ə] should also be seen as a phonetic vowel instead of a phoneme in Aohua. In the Hanhsi dialect, Qiu (2015) listed [ə] in the vowel inventory, though did not make it clear whether it is a phoneme or not. An example of [ə] given by Qiu (2015) conforms to the above description: *tmut* [təmut] 'random' (Qiu, 2015, p.38), [ə] is inserted between the consonants and does not bear stress. Other examples of [ə] in Aohua are as shown in (37).

(37) a. *ŋli* [ŋəli] 'fly' (Aty)
b. *kmay* [kəmaj] 'thick' (Aty)

When the /o/ comes after alveolar consonants and precedes semi-vowel /y/ in words of Japanese-origin, some speakers may pronounce it as [^{w}ej] instead of [oj] while others do not. Examples are as shown in (38).

(38) a. *osoy* [os^{w}ej~oss^{w}ej] 'late' (Jp)
b. *kuroy* [kur^{w}ej] 'black' (Jp)
c. *toy* [t^{w}ej] 'far' (Jp)

In (38), the high rounded vowel /o/ comes after /s, r, t/, which are all articulated at the alveolar position, and precede /y/. However, if the consonant before /o/ is not an alveolar consonant, the pronunciation remains [oj], as shown in (39).

(39) a. *omoy* [omoj] 'heavy' (Jp)

b. *koy* [koj] 'come.IMP' (Jp)

Semi-vowels are shown in Table 2.3.

Table 2.3: Semi-vowels in Aohua

	bilabial	palatal
glides	w	y [j]

/w/ and /y/ are realized as [w] and [j] respectively. They both can occur in words of Japanese origin and Atayal origin. Examples of /w/ are shown in (40), those of /y/ are in (41). As is shown in the examples, /w/ and /y/ may occur either in G slot or in the coda slot. The phonetic [ai], [ui], [oi] and [au] are analyzed as /ay/, /uy/ and /oy/ and /aw/ respectively, an analysis which is discussed in more detail in Section 3.3.2.

(40) a. *waruy* [waruj] 'bad' (Jp)

b. *cyawan* [tɕawaŋ] 'bowl' (Jp)

c. *lalaw* [lalaw] 'traditional hunting knife' (Aty)

(41) a. *yuŋay* [juŋaj] 'monkey' (Aty)

b. *niyoy* [nijoj] 'smell' (Jp)

2.3 Sound Adaptation

This section discusses the sound differences that happen when the word is adapted to Yilan Creole. The phenomena discussed in the current section are the same as the notions "sound substitution" and "sound correspondence" introduced by (Sanada, 2015*a*) in discussing the Tungyueh dialect. According to Sanada (2015*a*), when original Japanese words became a part of Yilan Creole, the original sound may go through changes by the filter of Yilan Creole's phonology. Differences can be observed in terms of the segments between the Yilan Creole lexicon and its original words in many cases, though not obligatory. Most of the phenomena in Tungyueh can also be observed in Aohua, though there are still some differences between the two dialects. Moreover, Sanada (2015*a*) only mentioned

the cases that originated from Japanese, while sound adaptations may also be observed in Atayal-originated words. In this section, I discuss all the adaptations with Aohua's data.

2.3.1 Glide Insertion and Glide Substitution

Japanese-originated words that contain diphthong originally go through glide insertion or glide substitution when adapted into Yilan Creole. In some words, glide is inserted between the two vowels, as for some others, the second vowel is substituted by glide, just as the examples (77), (78) shown in Section 3.3. This phenomenon can also be observed in Aohua, so the Aohua data is given below. Note that /w/ in the coda slot is not yet attested, so there is no data of /w/ substituting vowels at the coda position (see more about /w/ as a coda in Section 3.3).

(42) a. *kawo* [kawo] 'face' (Japanese: *kao*)
b. *uye* [uje] 'up' (Japanese: *ue*)
c. *maye* [maje] 'front' (Japanese: *mae*)

(43) a. *yasay* [jasaj] 'vegetable' (Japanese: *yasai*)
b. *suyren* [sujrɛn] 'paddy field' (Japanese: *suiren*)
c. *waruy* [waruj] 'bad' (Japanese: *warui*)

2.3.2 Vowel Shortening

In terms of the words that originally contain long vowels in Japanese, the long vowel is shortened in Yilan Creole (Sanada, 2015*a*). In Aohua, the shortening can be observed. Examples are shown in (44).

(44) a. *kokan* [kokaŋ] 'exchange' (Japanese: *kōkan*)
b. *kino* [kino] 'yesterday' (Japanese: *kinō*)
c. *atarasi* [ataɾaʦi] 'new' (Japanese: *atarasī*)

2.3.3 Degemination

Gemination in Japanese cannot be observed in Yilan Creole (Sanada, 2015*a*). Whereas Japanese distinguishes between geminate CC (or long C) and singleton C (short C), Aohua does not. In Aohua, a long C is observed at the phonetic level. That is, some speakers have free variation between a short C and a long C though they do not phonemically contrast. When it comes to words that originally contain geminate in Japanese, the geminate consonant is shortened phonologically.

(45) a. *hapa* [hapa] 'leaf' (Japanese: *happa*)
b. *gako* [gako] 'school' (Japanese: *gakkō*)

Alveolar sounds such as /s, t, k/ may still be pronounced as a geminate, yet the sounds [ss, tt, kk] and [s, t, k] are not distinguished. They may be pronounced as a gemination randomly, whether the original word contains geminate CC or not. Examples are shown in (46).

(46) a. *kako* [kako~kakko] 'awesome' (Japanese: *kakkō*)
b. *isyo* [iɕo~iɕɕo] 'together' (Japanese: *issyo*)
c. *osoy* [os^{w}ej~oss^{w}ej] 'late' (Japanese: osoi)

In this study, whether the sound is pronounced as long C or short C, they are seen as short C phonologically due to the relation between syllable structure and stress system. If we choose to analyze them as long C, then the preceding syllable will become CVC structure and weight heavier, thus should bear the stress. However, the stress pattern that is observed in Aohua is actually not the case. See more about the syllable weight and the stress system in Section 4.3.2.

2.3.4 Devoiced Vowel Dropping

Vowel devoicing in Japanese corresponds with words in Yilan Creole. In Japanese, /i/ and /u/ that is placed between two voiceless consonants and /u/ in word final position following voiceless consonants are devoiced. Vowels that should be devoiced originally in Japanese just drop off in Yilan Creole. Examples are as shown in (47).

(47) a. *sta* [sta] 'do.PST' (Japanese: *sita*)
b. *asta* [asta] 'tomorrow' (Japanese: *asita*)

Some may question whether there is a central vowel /ɨ/ between /s/ and /t/. However, if there is, the first syllable *sɨ* in *sɨta* may bear stress, and should be stressed in a sentence as ***sɨ*ɨ*ta*** (penultimate syllable is stressed when the last two syllables' structure are CVCV in the sentence, see more in Section 4.4). In fact, as example shown in (48), the stress pattern is ***sta*** instead of ***sɨ*ɨ*ta***, so it is clear that central vowel does not exist between /s/ and /t/.

(48) *anta no bonaw syukaku **sta** mo*
anta =no bonaw syukaku s-ta =mo
2.SG =GEN harvest do-PST =SPF
"Have you harvested your peanuts?"

Also, the word *asta* is always stressed as ***asta*** and is never pronounced as ***as*ɨ*ta*** according to my data so far. By the same token, it is logically to say that central vowel does not exist in the word *steru*. In addition, the stress pattern of the word 'abandon' is always ***ste**ru* according to the Aohua data.

(49) *steru* [steɾu] 'abandon' (Japanese: *suteru*)

In (47), /i/ and /u/ exist between /s/ and /t/ originally in Japanese is dropped in Aohua. It is possible that they may be first devoiced before dropping, while some senior speakers still find *asita* acceptable. However, in terms of the words shown in (47), middle-aged speakers only accept the forms without /i/. In Sanada (2015*a*), there are also examples of words that originally have vowel devoicing on the word final position.

(50) a. *rosok* 'candle' (Japanese: *rōsoku*)
b. *garas* 'glass' (Japanese: *garasu*)
c. *hos* 'to dry in the sun' (Japanese: *hosu*)

(Sanada, 2015*a*, p.80)

In (50), the /u/ in word final position following /s/ and /k/ originally has dropped off in the Tungyueh dialect. The word *rosok* 'candle' is also acceptable in Aohua, while other examples are not attested yet. Aside from that, Aohua has examples as shown in (51).

(51) *kosi* [koɕi] 'a little bit' (Japanese: *sukosi*)

The original Japanese word for *kosi* is *sukosi*. The /u/ between /s/ and /k/ in *sukosi* is devoiced, so it is dropped

in Yilan Creole and becomes *skosi*. Then the /s/ is dropped off, so the word became *kosi* in Aohua. In fact, the form *skosi* is found in Tungyueh (Sanada, 2015*a*, p.80).

2.3.5 Rhotacism

Rhotacism can be seen in many Japanese-originated words. Words containing /d/ originally may go through this process, but now always. /d/ in some words is retained, like *namida* 'tears'. Examples of /d/ replaced by /r/ are shown in (52).

(52) a. *rosite* [roʑite] 'why' (Japanese: *dōsite*)
b. *rame* [ɾame] 'no' (Japanese: *dame*)
c. *noro* [noɾo] 'throat' (Japanese: *nodo*)
d. *karara* [karaɾa] 'body' (Japanese: *karada*)

Note that the rhotacism of /g/ can also be observed in conversations. For instance, in the following sentence, the adverbalized form of *nagay* 'long' becomes *naraku* instead of *nagaku*. However, this kind of situation is rare, so it may be ideolectic.

(53) *niku* *naraku* *take*
niku nara-ku tak-e
meat long-ADV cook-IMP
"Cook the meat longer."

2.3.6 Palatalization

Alveolar fricatives /s, z/ and affricate /c/ may be palatalized and become /sy, zy, cy/ optionally. This phenomenon may vary between speakers. Examples are shown in (54).

(54) a. *syuzyume* [ɕuʑume] 'bird' (Japanese: *suzume*)
b. *mizyu* [miʑu] 'water' (Japanese: *mizu*)
c. *cyuba* [tɕuβa] 'saliva' (Japanese: *tsuba*)

While words that originally contain /s, z, c/ may go through this substitution as (54), words that originally contain /sy, zy, cy/ will not be substituted by /s, z, c/, as shown in (55). The palatalized sound remains the same with the original word and cannot be pronounced with non palatalized sounds. Thus, /s, z, c/ and /sy, zy, cy/ cannot be seen as free variation allophones respectively.

(55) a. *zitensya* [ʑitenɕa] 'bicycle' (Japanese: *zitensya*)
b. *zyu* [ʑu] 'ten' (Japanese: *zyū*)
c. *cyawan* [tɕawaŋ] 'bowl' (Japanese: *tyawan*)

Also there are examples that /s, z, c/ cannot be palatalized, as shown in (56). Pronunciations such as *syuru*, *syuzyusi*, *cyuku* are unacceptable.

(56) a. *suru* [suru] 'do.NPST' (Japanese: *suru*)
b. *suzusi* [sudzuɕi] 'cool' (Japanese: *suzusī*)
c. *cuku* [tsuku] 'arrive.NPST' (Japanese: *tuku*)

While the examples shown in (54) and (56) can only be pronounced in one way, either palatalized or non palatalized, some other words can be pronounced in both ways. For instance, the word 'plate' is *sara* to some speakers, and *syara* to others. Both are acceptable.

(57) *sara/syara* [sara/ɕara] 'plate' (Japanese: *sara*)

In (58), the imperative form of 'do' can be pronounced as *se* or *sye*, and both pronunciations are understandable to the speakers, though generally, they say *sye* to express the imperative meaning of 'do'.

(58) *kosi* *seri* *se/sye*
kosi seri s-e
a.little sort.out do-IMP
"Sort it out for a little bit."

2.3.7 Onset Reduction

Atayal words can have consonant clusters as an onset. According to Li (1980), Atayal allows CCVC, CCCVC, CCCCVC, CCVCVC and CCCVCVC forms. There can be at most four consonants at the onset of a syllable, as

the examples shown in (59).

(59) a. CCVC: *hpah* 'flower'
b. CCCVC: *qrgus* 'cricket'
c. CCCCVC: *mspliq* 'diarrhea'
d. CCVCVC: *mqahal* 'twin'
e. CCCVCVC: *mqzinah* 'run'

(Li, 1980, p.356-357)

However, words of Atayal origin, which originally have consonant cluster as an onset, is reduced in Aohua. Examples are shown in (60).

(60) a. *tahi* [tahʲi] 'ant' (Atayal: *qtahi'*)
b. *kmay* [kəmaj] 'thick' (Atayal: *kkhmay*)
c. *hyuci* [hjutɕi] 'slippy' (Atayal: *hzyuci'*)

As shown in (60a), the original Atayal word has a consonant cluster onset 'qt', but the initial consonant /q/ is dropped in Aohua. Then in (60b), the original Atayal word has a CCCCVC canonical form. The onset is constituted by four consonants 'kkhm'. However, it is simplified into 'km' in Aohua. In (60c), the original Atayal word's consonant cluster onset on the first syllable is 'hz', which is simplified into an 'h' in Aohua.

According to the examples above, it is hard to tell how the simplification operates, while the consonant dropped in the onset differs. In (60a), it is the initial consonant that disappears; in (60b), the second and the third consonant (or you may say the first and the third) disappear; while in (60c) the second consonant disappears, leaving the initial consonant. There are only few examples of the onset simplification in the Aohua lexicon, so we can barely find out the process of it, but it is clear that in the Aohua lexicon, the consonant cluster as an onset can only have CC at most. More than two consonants are simplified.

2.3.8 Other Sound Adaptations

Sanada (2015*a*) also mentioned other correspondence like /hi/ becomes /gi/, and /ryo/ becomes /zyo/. Examples are shown in (61) and (62) respectively. However, it is possible that these two correspondences are only mistaken pronunciations (Sanada, 2015*a*).

(61) a. *gito* ‘human’ (Japanese: *hito*)

b. *giru* ‘daytime’ (Japanese: *hiru*)

c. *agiru* ‘duck’ (Japanese: *ahiru*)

(Sanada, 2015*a*, p.79)

(62) a. *cizyo* ‘treatment’ (Japanese: *tiryō*)

b. *zayzyo* ‘material’ (Japanese: *zairyō*)

(Sanada, 2015*a*, p.79-80)

I could not find such examples in Aohua. In fact, the word ‘duck’ is *ahiru* in Aohua, not *agiru*. In contrast, /hi/ can correspond to /s/ in Aohua when it comes to the word ‘human’. I did not find other words in which /hi/ transforms into /s/ so far. Also, in the word ‘one (quantifier)’, /hi/ in the original word *hitotu* has disappeared.

(63) *sto* [sto] ‘human’ (Japanese: *hito*)

(64) *tocyu* [totɕu] ‘one (quantifier)’ (Japanese: *hitotu*)

It is possible that the /hi/ in *hitotu* was substituted by /s/ at first, then the /s/ dropped off after that and became *tocyu*. There are other words that went through the /s/ substitution, as shown in (65).

(65) a. *stari* [stari] ‘two people’ (Japanese: *hutari*)

b. *stacyu* [statɕu] ‘two (quantifier)’ (Japanese: *hutatu*)

c. *stanay* [stanaj] ‘dirty’ (Japanese: *kitanai*)

Based on (63), (64) and (65), we can see that /hi/, /hu/, and /ki/ may all be substituted by /s/ when preceding voiceless alveolar stop /t/. However, this is only a tendency, while there are also words in which /hu/ did not become /s/ existing.

(66) *hutoy* [hut^{w}ej] ‘fat’ (Japanese: *hutoi*)

Chapter 3

Syllable Structure and Phonotactics

3.1 Syllable Structure

The syllable structure in Aohua is schematized as follows, (67). Words of Japanese origin and words of Atayal origin have different phonotactic patterning, which are discussed separately in Sections 3.3 and 3.4. Nevertheless, there are a couple of points that should be discussed. One is about whether the long vowel should be allowed or not, the other is about whether the syllables with glide coda should be analyzed as a diphthong or not. Both issues are covered in Sections 3.3.1 and 3.3.2.

(67) $(C_1)\ (C_2)\ (G)\ V\ (C_3)$

There are five slots in Aohua's syllable structure. Note that a vowel sequence is prohibited in a syllable. Consonants and semi-vowels which may appear on onset or coda are optional and are under different limitations depending on the word origin. The limitations are discussed respectively in Sections 3.3 and 3.4.

Not all patterns expected from (67) are attested. In fact, syllable structures like CCGVC are not found so far. Also, note that some syllable structures may only appear in words of Japanese origin and not in words of Atayal origin, or vice versa. This might result from the difference between the syllable structure and phonotactics of two contributing languages of Yilan Creole, Japanese and Atayal.

The possible syllable structure of words of Japanese origin and Atayal origin are summarized in Table 3.1.

Table 3.1: Possible syllable structures in Aohua

	Japanese origin	Atayal origin
V	+	+
CV	+	+
CCV	+	+
GV	+	+
CGV	+	+
VC	+	-
CVC	+	+
GVC	+	+
CCVC	+	+
CGVC	-	+
CCGVC	-	+

3.2 Distribution of Segments in Aohua

The distribution of the seventeen consonants and two semi-vowels in Aohua in syllables (onset and coda) and words (initial, medial, and final) are given in Table 3.2 first. There are four positions that the consonants and the semi-vowels may appear: word-initial onset (IO), word-medial onset (MO), word-medial coda (MC), and word-final coda (FC).

Table 3.2 shows that almost every consonant and semi-vowel can appear on IO and MO, except /x/ and /'/, which has limited occurrence. Phonemes that may be on MC are limited to /k/, /n/ and /y/, which appear in only Japanese-originated words. As for FC, all the phonemes that can function as a coda in Aohua may appear. The distribution reflects that only Japanese-originated words can have coda in word-medial position. Atayal-originated words tend to have syllables with coda at word-final position, which is the same as Atayal. Different from other phonemes, /x/ and /'/ can only appear in as FC due to its limited occurrence. /x/ and /'/ cannot function as an onset in Aohua. Moreover, they only appear in words in Atayal origin so they may not appear in word-medial position.

Table 3.2: Distribution of consonant phonemes and semi-vowel phonemes

	IO	MO	MC	FC
/p/	+	+	-	-
/b/	+	+	-	-
/t/	+	+	-	-
/d/	+	+	-	-
/k/	+	+	+	+
/g/	+	+	-	-
/s/	+	+	-	+
/z/	+	+	-	-
/c/	+	+	-	-
/m/	+	+	-	-
/n/	+	+	+	+
/ŋ/	+	+	-	+
/r/	+	+	-	-
/l/	+	+	-	-
/x/	-	-	-	+
/h/	+	+	-	+
/’/	-	-	-	+
/w/	+	+	-	+
/y/	+	+	+	+

3.3 Phonotactics of Japanese-originated Words

This section discusses the phonotactic rules that only apply to words of Japanese origin. However, there are two problems that may be confusing: the existence of long vowels, and the analysis of VG versus diphthong. Thus, these two issues are covered in Sections 3.3.1 and 3.3.2.

The rules of the phonotactics of Japanese-originated words are shown in (67). Each slot in the generalization

has its own rule and the rules are described in following.

(68) C_1 Only /s, n, m/ is allowed in this slot.

C_2 Any consonant other than /ŋ, x, ’/, which are the phonemes that come from Atayal and do not exist in Japanese originally, are allowed in this slot

G Only semi-vowel phonemes /w, y/ are allowed.

V All vowel phonemes are allowed.

C_3 /y, n, ŋ, k/ is allowed in this slot.

Sanada (2013, 2015*a*) mentioned that in the Tungyueh dialect, VV sequences (including long vowels and diphthong) are prohibited and the special phoneme /R/ in Japanese does not exist in Yilan Creole. This study follows the analysis in Tungyueh, which means in Aohua, there is no VV sequence within a single syllable. However, there might be a possibility that an alternative analysis that allows long vowels is reasonable. The issue of long vowels is discussed in detail later in Section 3.3.1.

It is still unclear what constraints are found for C_1C_2 clusters, though the attested combinations of C_1 and C_2 indicate that the place feature is identical between the two: /st/, /nt/ and /mm/. When the C_1 slot is filled with /s, n, m/, the consonant C_2 slot is limited. So far, according to my data, only /st/, /nt/, /mm/ sequences are allowed. Examples are shown in (69).

(69) a. *sta* ‘do.PST’ (Jp)

b. *nta* ‘2.SG’ (Jp)

c. *mmay* ‘delicious’ (Jp)

As for the C_3 slot, the palatal glide /y/ can appear, yet the bilabial glide /w/ is not attested so far. It is appropriate to assume that /w/ is allowed in the C_3 slot, since in Tungyueh dialect, /w/ can function as a coda, as shown in (70) (Sanada, 2015*a*). By contrast, in Aohua /wu/ occurs instead of coda /w/, as shown in (71). The word ‘wash’ in Aohua is as shown in (71). It has three syllables *a.ra.wu* instead of two *a.raw*[1]. The /w/ functions as an onset instead of a coda. Also, other verbs in Aohua that originally end with /u/ in Japanese behave the same.

[1]There are three ways to analyze the word ‘wash’ in Yilan Creole: *a.raw*, *a.ra.wu*, *a.ra.u*. In Aohua, the word *arawu* is stressed on the

(70) *araw* 'wash.NPST' (Japanese: *arau*)

(Sanada, 2015*a*, p.78)

(71) a. *arawu* 'wash.NPST' (Japanese: *arau*)

b. *utawu* 'sing.NPST' (Japanese: *utau*)

/k/ can also appear in the C_3 slot, though such examples are scarce. Examples are as shown in (72). Syllables with the /k/ coda are underlined.

(72) a. *taksan* 'a lot of' (Jp)

b. *rosok* 'candle' (Jp)

The examples of possible syllable structures based on the generalization (67) and the rules above (68) are given in the following. However, some possible combinations, CGVC and CCGVC, do not exist (or are just not attested for so far).

(73) Japanese-originated words

V	*i*	'stomach'	*azi*	'taste'
CV	*te*	'hand'	*hi*	'fire'
CCV	*sta*	'do.PST'	*sto*	'human'
GV	*kawo*	'face'	*yasay*	'vegetable'
CGV	*syo*	'salt'	*syara*	'plate'
VC	*oy*	'many'	*anta*	'2.SG'
CVC	*kokaŋ*	'exchange'	*zidensya*	'bicycle'
GVC	*niyoy*	'smell'	*koway*	'be afraid of'
CCVC	*mmay*	'delicious'		

syllable *ra*, while *a* and *wu* are unstressed. Thus the word 'wash' in Aohua should be seen as *a.ra.wu* instead of *a.raw*. On top of that, the inflected imperative form of *arawu* is *arawe* 'wash.IMP'. In my analysis, the stem should be *araw-* and can take the non-past suffix *-u* or imperative suffix *-e*. Hence I chose to analyze the word 'wash' as *arawu* instead of *arau* due to the morphological reason mentioned above.

3.3.1 Phonemic Analysis of Long Vowels

This section discusses whether long vowels, i.e. V_1V_1 sequence, exists in Aohua or not. First, information of vowel sequences other than long vowels is given, namely diphthong and hiatus in Yilan Creole. Secondly, I cover the facts that support the existence of long vowels and those that do not, which is the main purpose in this section.

If we follow the syllable structure proposed in (67), it is obvious that every syllable in Aohua can only have one vowel as the nuclei. This is with the exception that vowel sequences inside the syllable, such as long vowel and diphthong is prohibited. Likewise, Sanada (2013, 2015*a*) argues that in Yilan Creole sound substitution is applied in order to avoid VV sequences and the special phoneme /R/ in Japanese does not exist. Since Atayal prohibits vowel sequence, it is logically there are no vowel sequences in Atayal originated words. On the other hand, Japanese has diphthongs and long vowels (i.e. the special phoneme /R/ in Japanese linguistics). Therefore, it is a descriptive question whether vowel sequence is really prohibited in Japanese-originated words in Yilan Creole or not.

The VV sequence here possibly includes long vowels, diphthong, and hiatus. Aside from long vowels and diphthong, which will be discussed later, there is data of hiatus in Aohua, as shown in (74).

(74) *irootoko* 'pretty boy' (Jp)

The syllable division of (74) is *i.ro.o.to.ko*. Hence, we can say that hiatus is allowed in Aohua. Two consecutive vowels can be separated into adjacent syllables in Aohua. Still, note that *irootoko* is a compound word composed of *iro* 'color' and *otoko* 'male'.

Next, there is the long vowel, namely V_1V_1 sequence. Based on my field data, Japanese words go through a vowel deletion process when they are adapted into Yilan Creole just as mentioned by (Sanada, 2015*a*). Nevertheless, there are language facts that suggest the possibility that some words containing long vowels do exist. It is hard to define whether the long vowel has remained by duration when the segment in question is in the final syllable of a disyllabic word and stressed, which is generally the case. This makes the existence of long vowels problematic. Still, rising pitch contour can be observed in some syllables, and those syllables happened to correspond to long vowels originally in Japanese; on the other hand, CV syllables in Aohua can only have flat pitch contour. First, I discuss why it is hard to define the long vowel by duration, then I discuss the pitch contour cases.

As mentioned in Section 4.2, when a CV syllable bears stress and happens to be the final syllable of a disyllabic word, it is pronounced longer than others. The lengthened duration on the stressed syllable can be seen as a realization of stress. As shown in Figure 3.1, the word *kawa* has its stress on the ultimate syllable, and

the stressed syllable is obviously longer than the unstressed one.

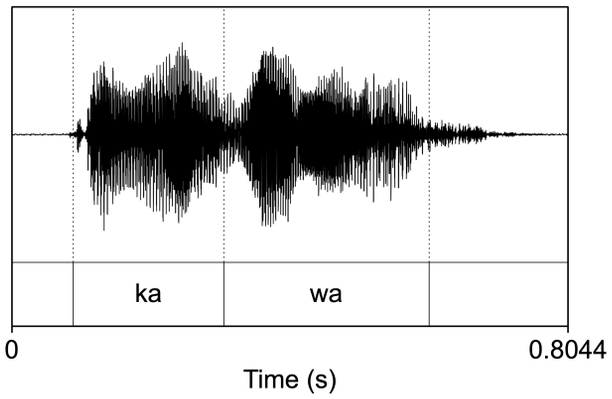

Figure 3.1: Waveform chart of *kawa*

The word *kawa* originated from the Japanese word *kawa* 'river', and its syllable structure is CV.CV though the stressed syllable *wa* in *kawa* is in fact pronounced longer than the unstressed one *ka*. The duration of each syllable is shown below.

Table 3.3: The duration of *kawa*

ka	*wa*
0.203s	0.297s

As a comparison, let us look at the word *hocyo* 'kitchen knife'. Also derived from Japanese, its corresponding original word is *hōtyō*, which contains long vowels in both syllables. It is a CV.CV word in the current analysis. Both long vowels in the original Japanese word are shortened when adapted into Yilan Creole. As shown in Figure 3.2, the duration of *hocyo* behaves the same as *kawa*. The stressed syllable *cyo* is longer than the unstressed one.

The duration of *hocyo* is summarized in Table 3.4 below. It is obvious, that the stress is on the second syllable, and it makes *cyo* become longer. If we assume that the word 'kitchen knife' keeps the long vowel, like *hoocyoo*, *hoocyo*, or *hocyoo*, problems arise.

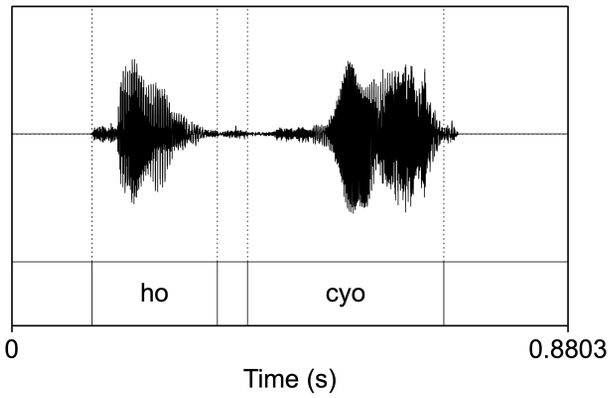

Figure 3.2: Waveform chart of *hocyo*

Table 3.4: The duration of *hocyo*

ho	*cyo*
0.199s	0.311s

If it is *hoocyoo*, the first syllable should be significantly longer than CV syllables in general. If it is *hoocyo*, the first syllable should be longer than the second one. Both ideas seem to be invalidated due to the fact that *ho* is shorter than *cyo*. So then, it becomes to *hocyoo*. If it is *hocyoo*, the second syllable should be longer than the first one, which matches the situation shown in Figure 3.2 and Table 3.4. Thus, though the possibility of *hocyoo* is not completely zero, it is still problematic since it is hard to tell what triggers the lengthening of the second syllable. It might be because it is a long vowel, or because it bears a stress so it is pronounced longer as a realization, the same as *kawa*. In other words, it is hard to tell whether words in Aohua still remain long vowels occasionally or not by duration, which is a fact that makes the existence of long vowels in Aohua problematic. Hence, in this study, I chose the analysis without long vowel.

3.3.2 VG or Diphthong?

Based on the syllable structure and examples shown in Section 3.3, we know that semi-vowels /y/ may appear in the C_3 slot as a coda of the syllable in Japanese-originated words, as shown in (75) (underlined syllables). However, some may question whether there is a possibility that these kinds of syllables may be alternatively analyzed as diphthong as shown in (76) (underlined syllables), as long as the phonetic characteristics are concerned. Moreover, the original word in Japanese is diphthong. Therefore, some might argue that it is more reasonable to analyze it as

diphthong. In this section, an analysis with CVG syllable structure like (75) is called “VG analysis”; while analysis with diphthong syllable structure like (76) is called “diphthong analysis”.

(75) a. *yasay* ‘vegetable’ (Jp)
b. *suyren* ‘paddy field’ (Jp)

(76) a. *yasai* ‘vegetable’ (Jp)
b. *suiren* ‘paddy field’ (Jp)

It is possible to seek the answer to this question from the language fact by looking through the syllable structures allowed in Aohua. As illustrated in Table 3.5, the VG analysis would be preferred if there is a restriction on both *CVCC and *CVGC sequence, but not on a long vowel plus a coda (VVC). In this situation, G functions as a coda rather than a V and the GC sequence is a prohibited coda cluster as well as a CC coda cluster. On the other hand, if a *CVCC sequence is prohibited, yet CVGC and CVVC sequences are allowed, the diphthong analysis is preferred. In this case, the G functions just as a vowel.

Table 3.5: Preferable analysis in different phonotactic situations

	CVG Analysis	Diphthong analysis
*CVCC/*CVGC/CVVC	preferred	
*CVCC/CVGC/CVVC		preferred

So far, neither a CVCC, CVGC, or a CVVC word has been found in Aohua data. Moreover, just as discussed in Section 3.3.1, it is hard to indicate the existence of long vowels in Aohua, which is a fact that implies that the CVVC canonical form does not exist. Hence, it is difficult to decide which analysis is better.

Based on the discussion above, the author has not found solid language-internal evidence which argues for one analysis over the other so far. Nevertheless, in this present study, the VG analysis is adopted for the following reasons.

Firstly, according to Sanada (2013, 2015*a*), in terms of words that originally contains diphthong in Japanese, when these words come into Yilan Creole, glides are inserted between the vowels (77), or the second vowel is substituted by glides (78).

(77) a. *kawo* 'face' (Japanese: *kao*)

b. *koye* 'voice' (Japanese: *koe*)

(Sanada, 2015*a*, p.77)

(78) a. *yasay* 'vegetable' (Japanese: *yasai*)

b. *araw* 'wash' (Japanese: *arau*)

(Sanada, 2015*a*, p.77)

Based on the examples in (77), we can say there may be a tendency that the V_1V_2 sequence is avoided in Yilan Creole by glide insertion. Yet, the examples in (78), which is the same as the words in question in the present section, may be analyzed as CVG due to the same tendency.

Secondly, no VV sequences are allowed in Atayal phonotactics (Huang and Wu, 2016) [2]. Considering the affect that Atayal may have on Yilan Creole in terms of phonological aspect, it is not surprising that the VV sequence is prohibited in Yilan Creole. (This can also be a potential reason against the long vowel issue mentioned in Section 3.3.1.)

3.4 Phonotactics of Atayal-originated Words

In (79), the rules of each slot in terms of Atayal-originated words are given. As shown in (67), the syllable structure of Atayal-originated words are the same as the Japanese-originated ones in general, yet the phonotactics are different. Considering the effects of the contributing language, Atayal-originated words' phonotactics is discussed separately.

(79) C_1 Consonants except /d, x, '/ are allowed.

C_2 Consonants except /d, x, '/ are allowed.

G Only semi-vowel phonemes /w, y/ are allowed.

[2]Though VV sequences do not appear in Atayal phonotactics, in Atayal studies, it is said that there are diphthongs, which are actually VG sequences, according to Li (1980) and Huang and Wu (2016). In Li (1980), he argues that there are six diphthongs existing in Atayal, which are /ay, aw, uy, uw, iw, iy/. It is possible that they call these VG sequences 'diphthong' because their sounds are similar to diphthong.

V_1 Vowel phonemes /a, i, u, e, o/ are allowed.

C_3 /w, y, x, ŋ, k, s, h, ’/ are found in this slot so far.

Voiced alveolar stop /d/ is a phoneme which does not exist in Atayal originally, so it does not appear in words of Atayal origin. /x, ’/ can appear in any position in Atayal originally, yet in Aohua, they only appear in the word final position as a coda, so it can only fulfill the C_3 slot. Also note that the phonetic vowel [ə] is inserted between the consonants when C_1 and C_2 are both fulfilled. See further about it in Section 2.2.

The examples of possible syllable structure in Atayal-originated words are listed in (80). As described in Section 3.3, not all possible syllable structures indicated in the generalization are attested.

(80) Atayal-originated words

V	*abaw*	‘leaf’	*uraw*	‘earth’
CV	*he*	‘skin’	*tahi*	‘ant’
CCV	*ŋli*	‘fly’	*kni*	‘bone’
GV	*yuŋay*	‘monkey’	*weruŋ*	‘chicken’
CGV	*hyuci*	‘slippy’		
CVC	*papak*	‘ear’	*bonaw*	‘peanuts’
GVC	*hoyin*	‘dog’		
CCVC	*kmay*	‘thick’		
CGVC	*nyaw*	‘cat’	*gyus*	‘guts’
CCGVC	*kcyan*	‘buttock’		

3.5 Correspondence of the Syllables

This section gives a summary of the correspondence of basic syllables of Japanese and its counterpart in the Aohua dialect of Yilan Creole. As mentioned in Section 2.3, some segments of the word may change when the word is adapted in Yilan Creole, especially sounds of Japanese-originated words. Possible counterpart that syllables in Japanese may have in Yilan Creole is summarized in Table 3.6. The "JP" columns show the syllables in Japanese, and the "AYC" columns show the counterpart syllables in the Aohua dialect of Yilan Creole. Syllables surrounded by parenthesis are not attested yet, and are only speculations. It is not surprising if these syllables appear in future investigations. Question marks indicate those that have no data at the current point.

Table 3.6: Correspondence of the syllables between Japanese and Aohua

JP	AYC	JP	AYC	JP	AYC	JP	AYC	JP	AYC
a	*a*	i	*i*	u	*u, wu*	e	*e, ye*	o	*o, wo*
ka	*ka*	ki	*ki*	ku	*ku, k*	ke	*ke*	ko	*ko*
ga	*ga, ra*	gi	*gi*	gu	*gu*	ge	*ge*	go	*go*
sa	*sa, sya*	si	*si*	su	*su, syu, si, s*	se	*se, sye*	so	*so, (syo)*
sya	*sya*			syu	*syu*			syo	*syo*
za	*(za, zya)*	zi	*zi*	zu	*zu, zyu, (zi)*	ze	*ze, (zye)*	zo	*(zo), zyo*
zya	*(zya)*			zyu	*zyu*			zyo	*zyo*
ta	*ta*	ti	*ci*	tu	*cu, cyu, ci*	te	*te*	to	*to*
da	*da, ra*	di	*?*	du	*?*	de	*de, re*	do	*do, ro*
na	*na*	ni	*ni*	nu	*nu*	ne	*ne*	no	*no*
ha	*ha*	hi	*hi, s*	hu	*hu, s*	he	*he*	ho	*ho*
ba	*ba*	bi	*bi*	bu	*bu*	be	*be*	bo	*bo*
pa	*pa*	pi	*pi*	pu	*pu*	pe	*(pe)*	po	*(po)*
ma	*ma*	mi	*mi*	mu	*mu*	me	*me*	mo	*mo*
ya	*ya*			yu	*yu*			yo	*yo*
ra	*ra*	ri	*ri*	ru	*ru*	re	*re*	ro	*ro*
wa	*wa*							wo	*?*

Chapter 4

Stress System

This chapter is about Aohua's stress system. As discussed in Section 1.5, Yilan Creole has been said to be a stress language, and the Tungyueh dialect and the Hanhsi dialect both have a fixed stress system (Sanada, 2013; Qiu, 2015). I show that the Aohua fixed stress system coexists with the weight-sensitive stress system. The mechanism of the Aohua stress system is as illustrated in Figure 4.1.

To identify the stress of a word, first, we should look at its origin. If it is an Atayal originated word, the fixed stress system is applied onto the ultimate syllable (see Section 4.3.1). On the other hand, if it is a Japanese-originated word, the weight-sensitive stress system is applied (see Section 4.3.2). When the word in question is applied to the weight-sensitive stress system, the stress of the word (or unit) in question falls onto the heavier syllable among the stress domain, i.e. last two syllables, following the syllable weight hierarchy proposed in Section 4.3.2. However, when both syllables in the stress domain have the same weight, the stress assignment depends on the word length. If it is a disyllabic word, the stress is unpredictable. It is lexically determined or may be on either syllable (see more in Section 4.3.2). Meanwhile, if it is a word that contains three or more syllables, or even a larger unit than word, such as a phrase or clause, the stress is on the penultimate syllable (see more in Section 4.3.2 and 4.4).

Before I discuss the stress assignment briefly introduced above, the definition of stress in the present study is given in Section 4.1, firstly. Then the characteristic of stress in Aohua is introduced in Section 4.2. Fixed stress system and weight-sensitive stress systems are introduced in detail in Section 4.3. This chapter not only covers word stress, but also phrasal stress in Section 4.4. Then the weight-sensitivity which plays a important role in stress assignment of Japanese-originated words is discussed in a typological perspective in Section 4.5. Last but not least, in Section 4.6 review of stress system of other dialects is given.

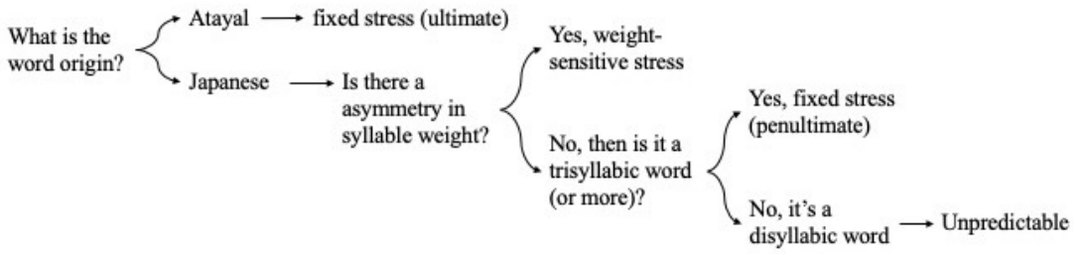

Figure 4.1: The mechanism of the stress assignment of Aohua

4.1 Identification of a Stressed Syllable

Before discussing the stress system in Aohua, I would like to give the definition of the term "stress" that I use in this study and show how I distinguish the stress in Aohua. Though it is hard to give an absolute phonetically based definition of stress, I determine a rule for distinguishing the stress. Also I would like to discuss the characteristics of stress in Aohua in this section.

According to previous studies, syllables that bear stress are made more prominent than others by the combination of three factors: pitch, duration and intensity (Fry, 1955; Hayes, 1995; Ladefoged, 2003). It is hard to distinguish stressed syllables only by one of the three factors. However, the previous works agree that the judgment of stress can be made mainly dependent on a higher pitch and a greater duration. The intensity has the least effect. On the other hand, Beckman (1986) argues that stress accent differs from non-stress accent, which is also called pitch accent, in that it is distinguished by factors other than pitch. Thus, though pitch plays a great part in making stressed syllables prominent. Based on the above, this study judges the stressed syllable generally by three factors: pitch, duration, intensity, but give priority to duration and intensity in Aohua when the behavior of pitch is not identical to other factors. Generally, the stressed syllable has the highest pitch, longest duration and strongest intensity, though sometimes it may have a lower pitch with the longest duration and strongest intensity. To support the definition made above, examples in Aohua are shown in Section 4.2.

4.2 Stress in Aohua

This section discusses the stress in Aohua in detail. As discussed in Section 4.1, stress in Aohua is realized in three factors: pitch, duration, and intensity, and the stress can be indicated mainly by duration. First, all the possible duration patterns inside the stress domain are given, then the examples of different patterns are shown.

The duration of the stress in Aohua under three kinds of situations are summarized in Figure 4.2: underlying duration, stress on the first syllable, and stress on the second syllable. There is an asymmetry in the underlying duration. The second syllable is longer than the first one. This can explain the fact that speakers would pronounce the last syllable longer whether if the stress is on it or not. When the stress is on the first syllable, the duration obviously becomes longer, thus the length of the first syllable (stressed) is close enough to the second syllable in this case. On the other hand, when the stress is on the second syllable, the duration becomes longer as well, which enlarges the difference in terms of the length between it and the unstressed first syllable.

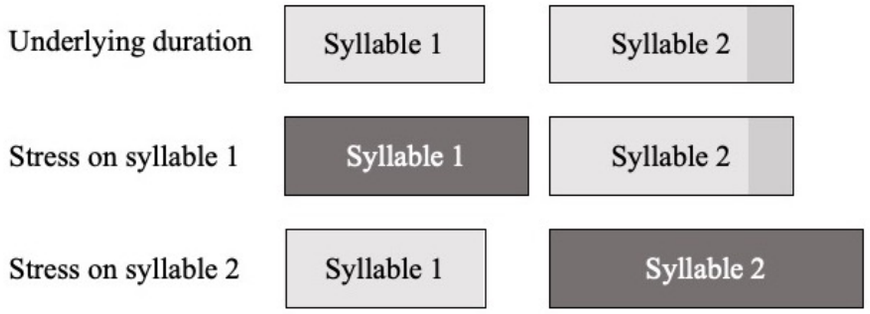

Figure 4.2: The duration of syllables when the underlying duration or stressed syllables are in different positions

To support the generalization in Figure 4.2, examples of stress on the first syllable and on the second syllable are given respectively. In Figure 4.3, the waveform, intensity, and pitch of the word *kori* 'ice' are given. The accurate duration of *kori* is as shown in 4.1.

Table 4.1: The duration of *kori*

ko (H)	*ri* (L)
0.208s	0.230s

As the acoustic fact shown in Figure 4.3 and Table 4.1 indicate, it is obvious that the first syllable of *kori* has stronger intensity and higher pitch then the second syllable, and the two syllables have almost the same duration. Hence, it is accurate to conclude that *kori* has its stress on the first syllable.

Next, the waveform, intensity and pitch of the word *kawa* 'river' in Aohua is given in Figure 4.4, and the duration of each syllable in *kawa* is summarized below in Table 4.2.As shown in Table 4.2, the second syllable *wa* is longer than the unstressed *ka* for almost as long as 0.1s, which showcases the evident difference compared to *kori*. The intensity of each syllable has no big difference, yet the maximum intensity is 85.8 dB in the stressed syllable *wa*. As for the pitch, the stressed syllable is obviously higher than the unstressed one. Based on the three factors, it is appropriate to say that the word *kawa* has its stress on the second syllable.

Table 4.2: The duration of *kawa* (Repost of Table 3.3)

ka	*wa*
0.203s	0.297s

The data ***ko****ri* and *ka****wa*** show the typical behavior when the stress is on the first syllable or the second syllable respectively (The bold characters show the stressed syllable). The stressed syllable ***ko*** in ***ko****ri* has nearly the same duration as *ri*, a stronger intensity, and a higher pitch; on the other hand, ***wa*** in *ka****wa*** has a longer duration, stronger intensity, and a higher pitch compared to the unstressed *ka*.

As discussed above, we can conclude that the characteristics of the stress in Aohua when carried by different syllables inside the stress domain, as shown below in (81) and (82).

(81) When the first syllable in the stress domain is stressed:

a. Neither the stressed syllable nor the unstressed one have significantly longer duration.

b. The intensity is greater than when unstressed. (Also affected by the quality of vowel.)

c. The pitch is generally higher.

(82) When the second syllable in the stress domain is stressed:

a. The duration becomes longer significantly.

b. The intensity is greater than when unstressed. (Also affected by the quality of vowel.)

c. The pitch is generally higher.

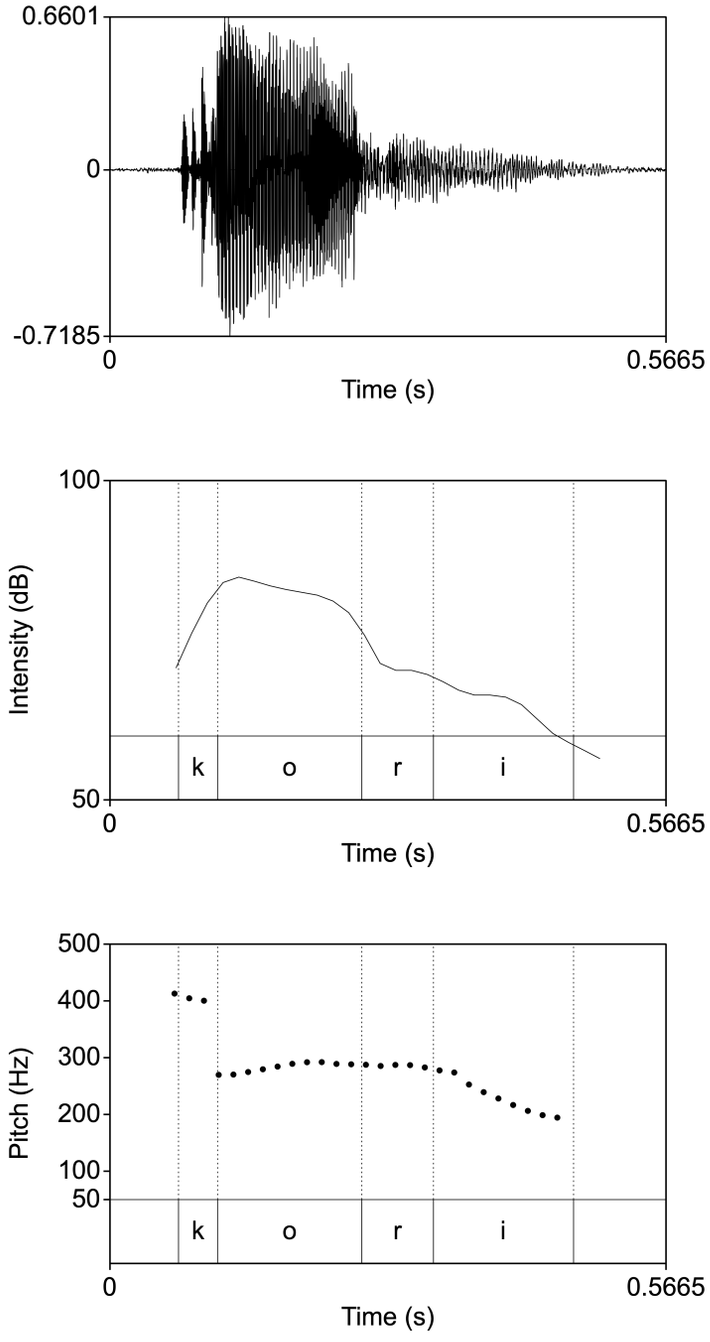

Figure 4.3: The waveform, intensity, and pitch of the word *kori*

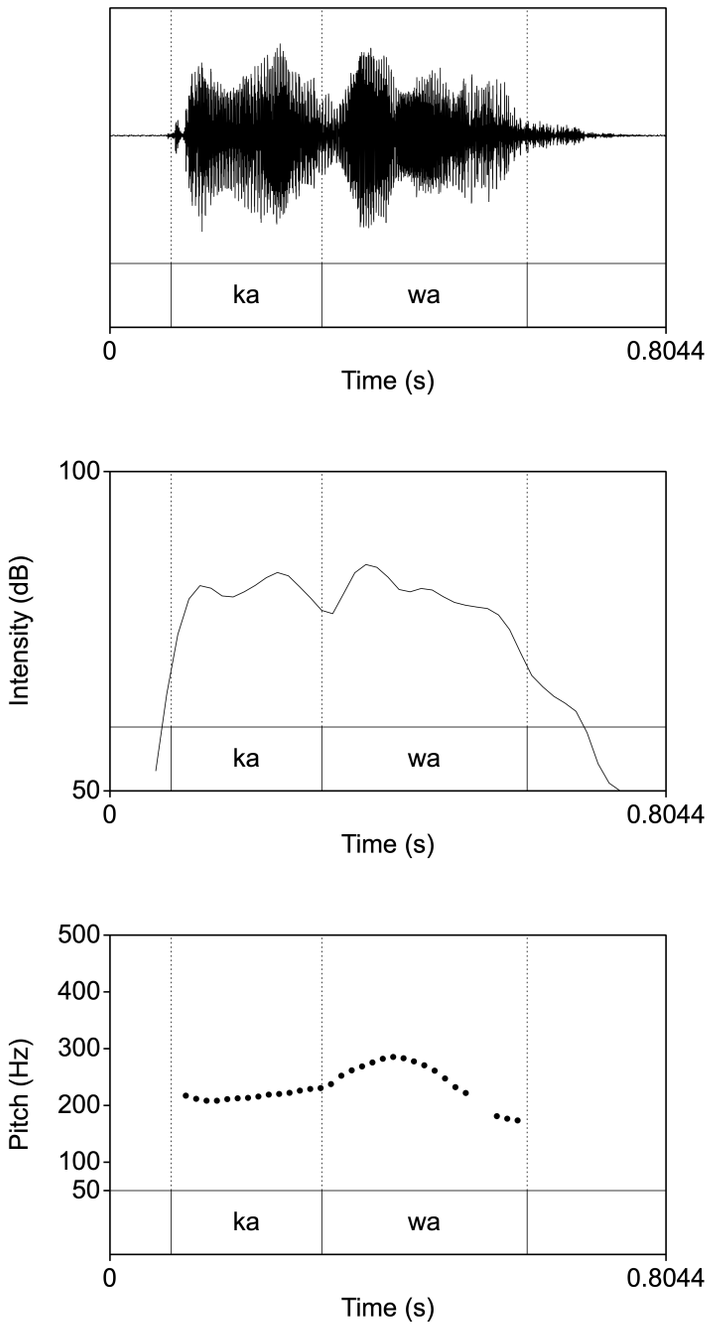

Figure 4.4: The waveform, intensity, and pitch of the word *kawa*

4.3 Word Stress

Whereas other dialects of Yilan Creole have been said to have a fixed stress system where stress falls on either the ultimate or penultimate syllable, with the choice being simply lexically determined (Sanada, 2013; Qiu, 2015). The stress system of Aohua has never been described before. The present section aims to fill this major gap in the literature. This study here proposes a model in order to explain the stress assignment of Aohua's lexicon. Though there are a few exceptions, through the model proposed in the current section, the stress system of Aohua is argued to be largely predictable.

The stress system discussed in this section concerns word-level prosody. The term "word" here indicates a morpheme or a sequence of morphemes that is phonologically and morphologically independent. The definition of word used here follows Shimoji (2018). In current section, our exclusive focus is on nouns and adjectives. The stress system of verbs is left for future research. The mechanism of the word stress system of Aohua is described schematically in Figure 4.1 in Section 4.3. The word stress system of Aohua can be roughly divided into ultimate fixed stress system and weight-sensitive stress system. These two system exist in Aohua simultaneously.

As illustrated in Figure 4.1, there are few factors that we should consider when indicating the stress of word in question, which is word origin, syllable weight, and the word length. By these factors, we can roughtly classify the word stress in Aohua as the following: Atayal-originated words are applied to ultimate fixed stress, while Japanese-originated words are applied to weight-sensitive stress. The fixed stress systems is discussed first in Section 4.3.1, than the weight-sensitive stress is discussed in Section 4.3.2.

4.3.1 Fixed Stress System

Fixed stress systems in Aohua only apply to Atayal originated words. As briefly discussed above, the stress may be assigned to the ultimate syllable if the word in question originated from Atayal. This feature is obviously due to the Atayal prosodic system. , while Atayal is a fixed stress language which has its stress position on the ultimate syllable (Rau, 1992; Huang and Wu, 2016). Examples of words of Atayal origin are shown in (83). The bold characters indicate the stress position.

(83) a. ***he*** 'skin'
b. *a**baw*** 'leaf'
c. *lu**kus*** 'cloth'
d. *ta**hi*** 'ant'

e. *hyu**ci*** 'slippy'

So far, I have not had sufficient data with three or more syllable which is originated from Atayal since monosyllabic words and disyllabic words are the most common type in Atayal (Li, 1980).

Note that monosyllabic words are certainly stressed on the available syllable. Examples are as shown in (84).

(84) a. ***gyus*** 'intestine'

b. ***he*** 'skin'

4.3.2 Weight-sensitive Stress System

The stress of words of Japanese origin is determined by syllable weight. The domain of stress assignment is not the whole word but the last two syllables of the word. Thus, whereas a disyllabic word as a whole is the domain of stress, in the case of a trisyllabic or longer word, the ultimate and penultimate syllables are the candidates for stress assignment. Stress falls on the heavier syllable of the two syllables of a word. If the two syllables have the same weight, stress falls on either syllable in an unpredictable way in the case of disyllabic words, or on penultimate in the case of longer words.

Stress of words of Japanese origin can be predicted in most cases if we assume the following hierarchy of syllable weight, where Vn represents a vowel plus a nasal, VG represents a vowel plus a glide /y/, VO presents a vowel with a obstruent coda, and V represents a light syllable. Onsets do not have weight, thus are omitted in the following hierarchy. Onsets are represented as C where necessary in the discussion below. Weight decreases from left to right on the hierarchy.

(85) Syllable weight hierarchy in Aohua: Vn > VG > VO > V

The hierarchy looks like a cross-linguistic hierarchy of syllable weight suggested by (Gordon, 2006), and we will discuss the commonality and difference between this cross-linguistic hierarchy and ours in Section 4.5.

Note that words with only one syllable are certainly stressed on the available syllable, just as monosyllabic words of Atayal origin. Examples are as shown in (86).

(86) a. ***te*** 'hand' (Jp)

b. ***hi*** ‘fire’ (Jp)

c. ***ban*** ‘night’ (Jp)

Disyllabic Words of Japanese Origin

A disyllabic word serves as the domain of stress assignment, with stress falling on the heavier one. Table 4.3 lists all logically possible combinations of syllable structures of disyllabic words of Japanese origin. The structure of first syllable is indicated horizontally, and the one of second syllable is indicated vertically. C indicates the onset, and the bold characters indicate a stressed syllable. There are accidental gaps in the table, such as CVG.CVG structure. As for the combinations including CVO, instances of CVO structure is very rare at the first place. Their scarcity comes from the fact that CVO.CVX (where X may be any segment or zero) is not found in Japanese in the first place except for geminates, and that CVX.CVO is completely lacking in Japanese.

Before discussing all possible combinations found in my data, let us briefly examine exceptions to which our weight-sensitive system does not seem to apply.

Table 4.3: Possible syllable combinations of Japanese-originated words in Aohua

		Syll. 2			
		Vn	VG	VO	V
Syll. 1	Vn	CVn.**CVn**	**CVn**.CVG		**CVn**.CV
	VG	CVG.**CVn**			**CVG**.CV
	VO	CVO.**CVn**			
	V	CV.**CVn**	CV.**CVG**	CV.**CVO**	**CV**.CV ; CV.**CV**

(87) a. *say**go*** / ****say**go*** ‘last’

b. (*)*sin**zyo*** / ***sin**zyo* ‘heart’

c. (*)*kan**zyo*** / ***kan**zyo* ‘liver’

As shown above, (87a) is CVG.CV structure, and (87b, c) are CVn.CGV structure. The first syllable of (87a) is a closed syllable with a /y/ coda, and the second one is a open syllable with no coda. As for (87b, c), the first syllables are all closed syllable with /n/ on coda, while the second ones are open syllables. If we follow the

hierarchy mentioned previously, the heavier syllable should bear the stress. Hence it should be **CVG**.CV (*say**go***) and **CVn**.CV (***sin****zyo*, ***kan****zyo*) just as Table 4.3 illustrated.

I did not get data of ****say****go* in (87a) so far. On the other hand, the pattern that violates Table 4.3 in (87b, c) are more acceptable to some speakers, which means 'heart' and 'liver' may be pronounced in different stress pattern by different speakers, and the pattern *sin**zyo*** and *kan**zyo*** turns out to be exceptions of the system. At the current point, these three words (though 'heart' and 'liver' may not always be exception) are the only exceptions I have in my data.

CVn.CVn:

Examples of disyllabic words that consist of two CVn syllables are shown in (88). As mentioned above, stress of words that consist of syllables with same weight is indeterminate in our theory, and are actually pronounced in various ways according to lexemes or speakers. For some words, stress may fall on either syllable. However, as for CVn.CVn, stress is only observed on the second (last) syllable of the word. There is no example that shows a CVn.CVn structure words can have stress appear on both syllables.

(88) a. CVn.**CVn** *nin**gen*** 'human'
b. CVn.**CVn** *gen**kin*** 'cash'
c. CVn.**CVn** *han**bun*** 'half'

CVn.CVG:

Examples of disyllabic words with CVn.CVG syllable structure are shown in (89). According to my data, these kinds of words have their stress assigned at the first syllable, the CVn one, instead of the second syllable, CVG. Thus we can say that CVn.CVG words follow the syllable weight hierarchy, and its stress is assigned on the heavier syllable, CVn.

(89) a. **CVn**.CVG ***nan****say* 'how old'
b. **CVn**.CVG ***san****say* 'three years old'
c. **CVn**.CVG ***nan****kay* 'how many times'

CVn.CV:

As shown in (90), stress of disyllabic words with CVn.CV syllable structure appear on the CVn syllable instead of the CV one. Just as CVn.CVG words, CVn.CV words also have their stress on the heavier syllable.

(90) a. **CVn**.CV ***zen****bu* 'all'

b. **CVn**.CV ***on****na* ‘woman’

c. **CVn**.CV ***san****ko* ‘three (quantifier)’

d. **CVn**.CV ***yon****ko* ‘four (quantifier)’

e. **CVn**.CV ***nan****zi* ‘when’

CVG.CVn:

As shown in (91), stress of disyllabic words with CVG.CVn syllable structure appear on the CVn syllable, just the same with CVn.CVG words.

(91) a. CVG.**CVn** *suy****ren*** ‘paddy field’

b. CVG.**CVn** *ray****kon*** ‘white radish’

CVO.CVn:

Disyllabic words with CVO.CVn structure are rare. I only have one data of it, as shown in (92). The second syllable, *san*, is stressed, thus we can know that CVO syllables are lighter than CVn syllables, which is a fact supporting the hierarchy proposed.

(92) CVO.**CVn** *tak****san*** ‘a lot of’

CV.CVn:

Disyllabic words with CV.CVn structure have the same stress assignment with CVn.CV words: stress is on the CVn syllable, which is heavier. Examples are shown in (93)

(93) a. CV.**CVn** *ko****kan*** ‘exchange’

b. CV.**CVn** *go****han*** ‘cooked rice’

c. CV.**CVn** *cya****wan*** ‘bowl’

d. CV.**CVn** *i****ran*** ‘need.NEG’

Based on the data above, it is clear that the CVn syllable is the heaviest. If a disyllabic word consists of a CVn syllable, no matter what kind of combination it is, the stress is assigned to the CVn syllable. CVn is heavier than CVG, CVO and CV syllables. Next, I will show data composed of CVG, CVO, and CV syllables, but without CVn syllables in order to confirm the order of these three kinds of syllable structures.

CVG.CV:

Stress of disyllabic words with CVG.CV structure appears on the CVG syllable instead of the CV one, as shown in (94). This fact demonstrates that the CVG syllable is heavier than CV.

(94) **CVG**.CV ***tay****yo* 'sun'

CV.CVG:

As for CV.CVG words, stress is also assigned to the CVG syllable instead of the CV one, suggesting that CVG is heavier than CV again, which is a fact that concludes the validity of the hierarchy Vn > VG > V.

(95) a. CV.**CVG** *ni****yoy*** 'smell'
b. CV.**CVG** *ya****say*** 'vegetable'
c. CV.**CVG** *a****kay*** 'red'
d. CV.**CVG** *si****roy*** 'white'
e. CV.**CVG** *wa****ruy*** 'bad'

CV.CVO:

There are only a few disyllabic words with CVO.CVn structure in Aohua. I only have one data of it so far, as shown in (96). The second syllable, *sok*, is stressed, thus we can know that CVO syllables are heavier than CV syllables.

(96) CV.**CVO** *ro****sok*** 'candle'

Based on the above, we know that Vn is the heaviest and CV is the lightest, yet the order between VG and VO is not clear due to the lack of CVO.CVG and CVG.CVO data. This problem would be solved if we look at trisyllabic words. Before looking into trisyllabic words, I would like to discuss disyllabic words which contain only CV syllables.

CV.CV:

Stress of CV.CV words is generally unpredictable. Since the syllables that constitute the word have the same weight. It may be on the first syllable, as shown in (97), or on the second syllable, as shown in (98).

(97) a. CV.**CV** *ka****wa*** 'river'

b. CV.**CV** *ta**ne*** ‘seed’

c. CV.**CV** *si**ta*** ‘downward’

d. CV.**CV** *bu**ta*** ‘pig’

(98) a. **CV**.CV ***ko**ri* ‘ice’

b. **CV**.CV ***sa**ru* ‘monkey’

c. **CV**.CV ***ni**ku* ‘meat’

d. **CV**.CV ***ho**ne* ‘bone’

There are also words that can be stressed in two different ways, it may be **CV**.CV or CV.**CV**. There are not many. In most cases, they are caused by individual differences. One consultant pronounces the word in question in one stress pattern, while another consultant may give different answer. For instance, according to one of my consultants, the word *ame* ‘rain’ should be*a**me***, but to another consultant, it should be ***a**me*. In very rare cases, the stress of a word may be acceptable in both patterns to one consultant (though only one pattern is acceptable to others).For instances, to one of my consultant, the word *umi* ‘sea’ can be ***u**mi* or *u**mi***; the word *tori* ‘bird’ can be ***to**ri* or *to**ri***.

Trisyllabic (or More) Words of Japanese Origin

Trisyllabic words and words with more syllables of Japanese origin also can be applied to the weight-sensitive stress system. As mentioned previously, only the ultimate syllable and the penultimate syllable are able to be a candidate for the stressed syllable, which means the stress domain is limited. Thus, stress patterns of (99) are possible and attested in our data, while those of (100) are impossible and unattested.

(99) a. **(S_1)** (S_2)

b. (S_1) **(S_2)**

c. (S_1) **(S_2)** (S_3)

d. (S_1) (S_2) **(S_3)**

e. (S_1) (S_2) **(S_3)** (S_4)

f. (S_1) (S_2) (S_3) **(S_4)**

(100) a. * **(S_1)** (S_2) (S_3)

b. * **(S_1)** (S_2) (S_3) (S_4)

c. * (S_1) (**S_2**) (S_3) (S_4)

The stress assignment of trisyllabic words also follows the hierarchy proposed in (85): Vn > VG > VO > V. The stress is assigned to ultimate or penultimate depending on the syllable weight. Tetrasyllabic words or even words having five syllables follow the same rule. As shown in (101), if there is a CVn syllable in the last two syllables of the word, the stress is assigned to the CVn syllable, which supports the hierarchy proposed. The CVn syllable is certainly heavier than others.

(101) a. CV.**CVn**.CV *zi**den**sya* 'bicycle'
b. CV.CV.**CVn** *nizi**kan*** 'two hours'
c. CVn.CV.**CVn** *sanzi**kan*** 'three hours'
d. CV.CV.CV.**CVn** *icizi**kan*** 'an/one hour'
e. CV.CVG.CVG.**CVn** *akayray**kon*** 'carrot'

Another example of a trisyllabic word is shown below. The last two syllables of *dayraksuy* is CVO.CVG, and the stress is on the last syllable *suy*, which imply that CVG syllable is heavier than CVO syllable in the hierarchy. I have not found other data of trisyllabic words with stressed CVG or CVO syllables so far. Further investigation must be done.

(102) CVG.CVO.**CVG** *dayrak**suy*** 'the Aohua Village'

By now, Aohua's data concludes the validity of the hierarchy Vn > VG > VO > V. The stress assignment of Japanese-originated words is limited to the last two syllables of the word, and depending on the syllable weight hierarchy, stress is put on the heavier syllable.

As for trisyllabic words which end with CV.CV syllable structures, the stress is generally on the penultimate syllable, a feature which is distinct from disyllabic words where stress assignment for the indeterminate CV.CV structure is simply unpredictable. Tetrasyllabic words and words having five syllables are the same. Examples are shown in (103), (104), and (105).

(103) a. CV.**CV**.CV *hi**ra**ri* 'left'
b. CV.**CV**.CV *ka**ra**ra* 'body'
c. CV.**CV**.CV *ku**ru**ma* 'car'
d. CV.**CV**.CV *ku**mo**no* 'cloth'

(104) a. CV.CV.**CV**.CV *kuci**bi**ru* ‘lips’

b. CV.CV.**CV**.CV *yama**na**ka* ‘in the mountain’

c. CV.CV.**CV**.CV *buta**ni**ku* ‘pork’

d. CV.CVn.**CV**.CV *kacin**ni**ku* ‘beef’

(105) a. CV.CV.CV.**CV**.CV *iroo**to**ko* ‘pretty boy’

b. CV.CV.CVn.**CV**.CV *kokumin**ga**ko* ‘elementary school’

Unfortunately, I found data which violates the description proposed above. The exception is shown in (106). The word ‘elderly’ is *tosiyori*, and sometimes may become *tosyori* in quick speech. Despite the different forms, both of them have the stress on the ultimate syllable instead of the penultimate one. I did not find any other exception so far.

(106) a. CV.CV.**CV** *tosyo**ri*** ‘elderly’

b. CV.CV.CV.**CV** *tosiyo**ri*** ‘elderly’

4.4 Phrasal and Clausal Stress

So far, we have discussed the stress assignment of the lexicons in Aohua. However, when it comes to phrase, clause, or sentence, the stress system discussed in Section 4.3 is insufficient. In (107), the unit is a sentence, which consists of several words. Each word in the sentence has its own stress when uttered separately. Nevertheless, when they are uttered as a larger syntactic unit like a phrase or a clause, like sentence, the stress pattern cannot be predicted by the word stress system. Therefore, it is necessary to analyze the stress system of longer units from a upper level.

(107)

kono	*yasay*	*no*	*azi*	***ron**na*
kono	yasay	=no	azi	ronna
this	vegetable	=GEN	taste	what.kind.of

“What is the taste of this vegetable?”

As shown in (107), we have a unit that is larger than a word, and a primary stress (indicated by bold characters) of this whole unit can be observed. Such unit is defined as a phonological phrase in the current study. It is possible that a phonological phrase consists of multiple smaller phonological phrases. The primary stress of the phonological phrase can be predicted by the following.

One of the last two syllables of the unit can bear the primary stress, and the primary stress is assigned to the heavier syllable following the syllable weight hierarchy in Aohua. Examples are shown in (107), (108) and (109). Stressed syllable is presented by bold characters.

(108) *kotosi* *no* *bonaw* *suku**nay***
kotosi =no bonaw sukunay
this.year =GEN peanuts few
"There are few (harvest of) peanuts this year."

(109) *watasi* *manici* *gako* ***i**ku*
watasi manici gako ik-ru
1.SG everyday school go-NPST
"I go to school everyday."

The primary stress only appears on the last two syllables of the whole phonological phrase, and is assigned to the heavier one. For instance, stress in (107) is assigned to *ron*, a CVn syllable, instead of *na*, a CV one. In the same vein , in (108), the last two syllables are *ku* and *nay*. The stress is on *nay* because it is a CVG syllable which is heavier than *ku*, a CV syllable. As for (109), the last two syllables *i* and *ku* are both CV syllables, that is to say, they have the same weight. When the two syllables are having the same weight, the stress is on the penultimate syllable. Thus the stress of (109) is on *i*.

As mentioned, the phrasal/clausal stress refers to the last two syllables of the final word in the unit in question. The "final" word is not one of the surface utterance but of the underlying syntactic structure. The general word order in Aohua is basically the same with Japanese, for instance, (109) presents a SOV word order. Also, the order of head and predicate in Aohua is generally the same with Japanese. The predicate comes after the head, just as shown in (108). Though Aohua speakers also accept inverted order. For instance, the sentence below in (110) follows the general order, head-predicate, but it is also acceptable in a inverted order, predicate-head, as shown in (111). The meaning does not change due to the change of the word order.

(110) *aruku* *no* *o**soy***
aruk-ru =no osoy
walk-NPST =GEN late
"(Someone) walks very slowly."

(111) *o**soy*** *aruku* *no*
osoy aruk-ru =no
late walk-NPST =GEN
"(Someone) walks very slowly."

In (110), the syllable *soy* is stressed following the stress assignment introduced above. When the word order is inverted, the stress on *soy* remains, as shown in (111). The stress moves together with the stressed syllable. Another example is shown below.

(112) *agaw* *na**gay*** *anta* *no* *ŋurus*
agaw nagay anta =no ŋurus
EXCLM long 2.SG =GEN beard
"Oh, your beard is so long!"

It should be "*anta no ŋurus na**gay***" if following the general word order in Aohua. Likewise, the stress on the syllable *gay* originally move together with the word to the front of the sentence.

As stated earlier, stress can only be assigned to the last two syllables of the sentence. However, there are additional rules in terms of the stress bearable syllables. If a sentence has a sentence-final particle, the sentence-final particle will not be counted.

(113) *tahi* *i**re**ta* *mo*
tahi ire-ta =mo
ant come.in?-PST =SPF
"The ants came in."

In the example shown above, the primary stress is on the syllable *re*, which is the third syllable counted from the right edge of the sentence. However, there is a sentence-final particle *mo* in the sentence. While the sentence-final particle will not be counted when assigning primary stress, the last two syllable of (113) is *re* and *ta* instead of *ta* and *mo*. Other examples with sentence-final particle are shown below.

(114) *ima* ***nan**zi* *mo*
ima nanzi =mo
now when =SPF
"What time is it now?"

(115) *hanbun* ***to**ru* *ga*
hanbun tor-ru =ga
half take-NPST =Q
"Do you want half of them?"

4.5 Weight-sensitivity in a Typology Perspective

Gordon (2006) proposes a universal hierarchy of weight in weight-sensitive stress systems across languages, as illustrated in Figure 4.5.

Here, four syllable types are ordered from heavy to light: CVV(C) (VV includes long vowels and diphthongs), CVR (R indicates a sonorant coda), CVO (O indicates an obstruent coda) and CV.

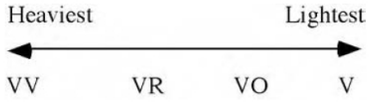

Figure 4.5: Hierarchy of weight for stress (Gordon, 2006, p.127)

In Gordon (2006)'s survey, most weight-sensitive stress languages have a binary weight distinction, whereby a cut-off point divides the hierarchy into two categories, Heavy and Light. Few languages make a more complex distinction like a ternary distinction (e.g. Klamath) or quarterly distinction (e.g. Kobon). According to this typology, the Aohua dialect should be classified as one of the very few languages with the quarterly distinction.

As mentioned in Section 4.3.2, the author has suggested the language-particular hierarchy of weight, which is reposted as (116).

(116) Syllable weight hierarchy in Aohua: Vn > VG > VO > V

If we compare it to Gordon's universal hierarchy in Figure 4.5, we can see that the Aohua's hierarchy follows the universal hierarchy.

In Figure 4.6, we can see that each class of Aohua's syllable weight hierarchy can be linked to classed of the universal hierarchy proposed by Gordon. The Vn class and VG class correspond to the VR class in Gordon's hierarchy, and the VO and V classes in two hierarchies correspond to each other respectively. In Gordon's hierarchy the VR class makes no distinction between nasals and others, while distinction is made between the nasal coda (n) and the glide coda (G) in Aohua. The Aohua fact indicates that there is a possibility that the VR class in the universal hierarchy may be further divided into Vn > VG.

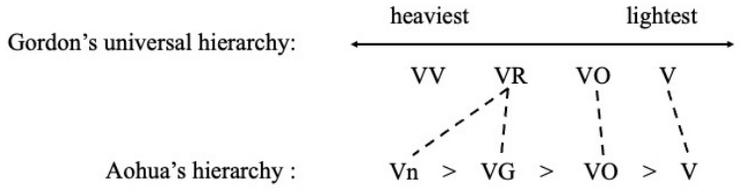

Figure 4.6: Comparing Aohua's hierarchy to universal hierarchy

In Section 3.3.2, an alternative analysis of CVG syllable structure is provided. So far, the discussion above is based on the original CVG analysis. If we choose the alternative diphthong analysis, the syllable weight hierarchy in Aohua changes, and the relationship with universal hierarchy will also be different. The Aohua syllable weight hierarchy based on the diphthong analysis is shown in the following.

(117) Syllable weight hierarchy in Aohua (diphthong analysis): $Vn > V_1V_2 > VO > V$

The second class, which is originally VG, is replaced by V_1V_2 according to the diphthong analysis. If we compare the diphthong analysis version of Aohua's hierarchy to Gordon's universal hierarchy, we will notice that the diphthong hierarchy in Aohua violates the universal hierarchy. The comparison is illustrated in Figure 4.7.

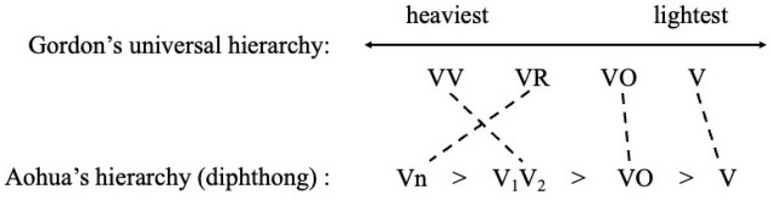

Figure 4.7: Comparing Aohua's hierarchy (diphthong analysis) to universal hierarchy

In Gordon's hierarchy, the VV class, which includes long vowels and diphthong, is the heaviest. However, in the diphthong hierarchy in Aohua, the diphthong class (V_1V_2) is the second class and is lighter than the Vn class. That is to say, the weight order of Vn and V_1V_2 syllables in the diphthong hierarchy in Aohua is exactly the opposite of the universal hierarchy. Thus, if we take diphthong analysis in Aohua, Aohua's data may suggest that the VV class in Gordon's hierarchy should be revised, or the Aohua dialect is an exception.

Compared to the hierarchy based on the diphthong analysis (117), a simpler generalization is made by VG

analysis that Vn is heavier than VG, following VO and then V. This view makes it clear that what contributes to the weight calculation is the structural position and the quality of a segment: a syllable structure with a coda is always heavier than one that doesn't, and segments that belong to coda have different weight depending on its quality. If the diphthong analysis is chosen, then it is hard to explain how the weight calculation operates, since V_1V_2 is lighter than Vn but heavier than VO, which makes the relation between segments belonging to nucleus and segments belonging to coda incomprehensible. Henceforth, the present study chooses the VG analysis and adopts the hierarchy based on it at the moment.

4.6 Stress System of Other Dialects

As discussed above, we know that Aohua has a fixed stress system and a weight-sensitive stress system. However, the weight-sensitive stress system has not been discussed in previous works. In addition, in previous works other dialects have been said to have only one kind of stress system, which seems simpler than Aohua's. In the Tungyueh dialect, according to Sanada (2013), stress may appear on the last syllable or penultimate syllable, and this feature derives from Atayal, which has fixed stress on ultimate, and Seediq, which has fixed stress on the penultimate. Nevertheless, Sanada (2013) does not show any examples of the stress pattern. As for the Hanhsi dialect, it is said that stress normally falls on the last syllable, as shown in (118), which is a feature derived from Atayal (Qiu, 2015).

(118) Hanhsi dialect: (Qiu, 2015, p.39)

a. *wa**ha*** 'I'

b. *la**la**ŋ* 'before'

There may be a possibility that the Tungyueh dialect and the Hanhsi dialect also have a weight-sensitive stress system existing simultaneously with the fixed stress system. Moreover, the factors that determine the stress system discussed above have not been considered as well. Based on the above, the stress system of other dialects needs further investigation and should be reconsidered.

Chapter 5

Intonation

Intonation is a property that refers to pitch variation of prosodic units larger than the word, and its function is related to the expression of discoursal meaning, the marking of phrases, the distinction of the semantic properties between questions and statements, and even information structures of the unit (Cruttenden, 1997; Gussenhoven, 2004; Gordon, 2016).

This chapter demonstrates the intonation of different types of sentence in Aohua: declaratives (5.1), imperatives (5.2), and interrogatives (5.3). The interrogatives is further divided into three parts: yes-no question and WH question. In Aohua, utterance is generally spoken in a falling tone, even interrogatives. Only the polar questions that do not include any word with interrogative meaning perform a rising tone.

5.1 Declarative Intonation

Declarative sentences in Aohua are pronounced with a falling tone. The pitch falls down at the end of the sentence. Examples are shown below. Pitch contour of (119) and (120) is illustrated in Figure 5.1 and 5.2. Pitch falls down at the end of the sentence.

(119)

watasi	*gako*	*no*	*ho*	*sigoto*	*stiru*
watasi	gako	=no	ho	sigoto	sti-ru
1.SG	school	=GEN	side	work	do.PROG-NPST

"I work in the school now."

(120) *osi* *no* *kakay* *itay*
osi =no kakay itay
1.SG =GEN foot hurt
“My foot hurts.”

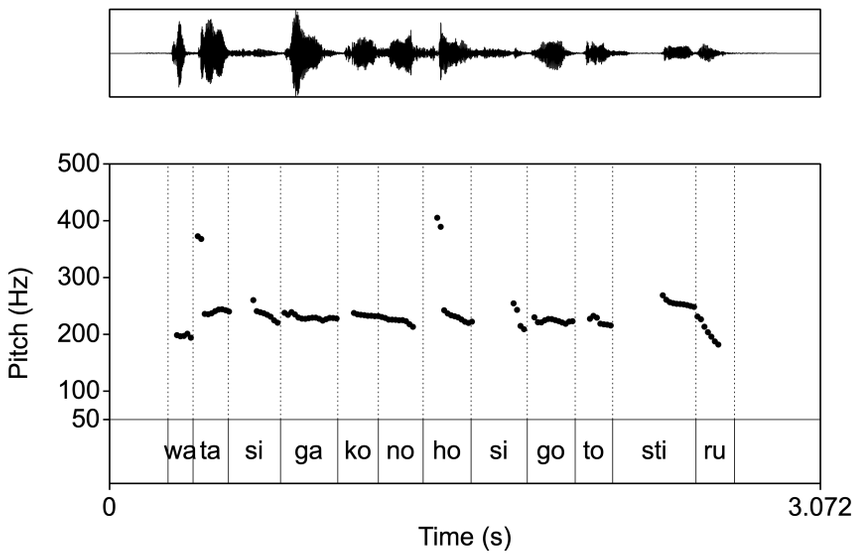

Figure 5.1: The pitch contour of *watasi gako no ho sigoto stiru*

In both examples (119) and (120), the pitch falls down at the end of the sentence, presenting a falling tone generally seen in Aohua speech. If the word order is inverted, which is often seen in Aohua, the falling moves together to the front, and the utterance that moves to the end of the sentence keeps a flat low tone until the end. Examples are shown in (121) and (122). The pitch contour of both examples are illustrated in Figure 5.3 and 5.4.

(121) *mmay* *kore* *sigoto*
mmay kore sigoto
good this work
“This person is good at work.”

(122) *agaw* *nagay* *anta* *no* *ŋurus*
agaw nagay anta =no ŋurus
EXCLM long 2.SG =GEN beard
“Oh, your beard is so long!”

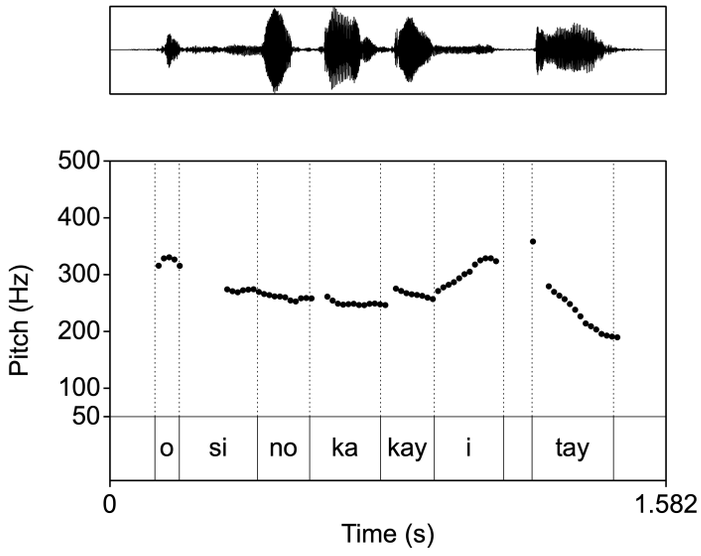

Figure 5.2: The pitch contour of *osi no kakay itay*

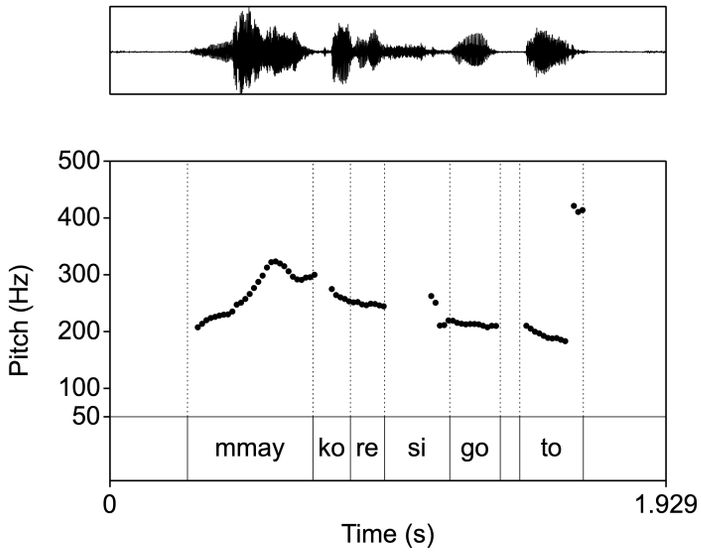

Figure 5.3: The pitch contour of *mmay kore sigoto*

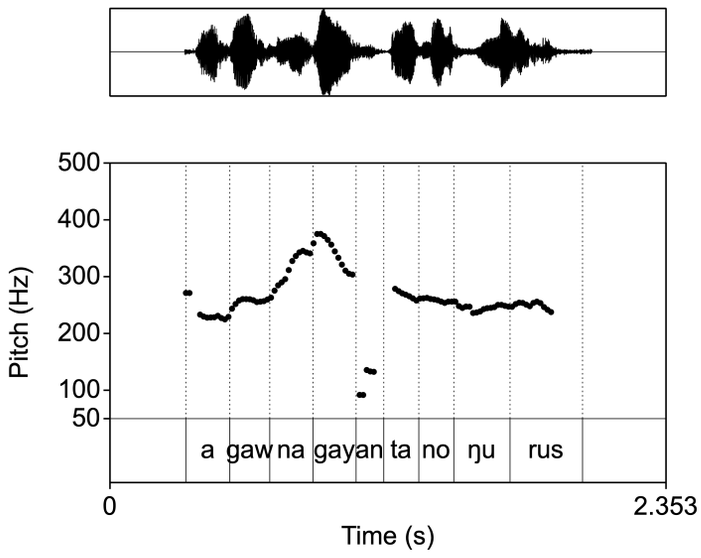

Figure 5.4: The pitch contour of *agaw nagay anta no ŋurus*

The uninverted form of (121) and (122) should be like below. The predicate comes after the head. Note that the exclamative word *agaw* seems to appear only on the sentence-initial position and only precedes adjective words, so it disappears when *nagay* appears on the final of the sentence. We still don't know much about *agaw*.

(123) *kore sigoto mmay*

(124) *anta no ŋurus nagay*

When (121) and (122) is uninverted, the pitch should be falling down at the end of the sentence. As illustrated in Figure 5.3 and 5.4, the falling tone can be observed after the syllable *mmay* in (121), and the syllable *gay* in (122). Then the remaining utterance after the significant falling keeps a low flat tone until the end of the sentence. It seems that the pitch contour of the predicate moves together with the utterance itself when the word order is inverted, just as the same as the stress.

5.2 Imperative Intonation

Imperatives present a falling tone, which is the same with the declaratives and some of the interrogatives (see Section). The pitch contour falls down at the end of the sentence. Examples are shown in (125) and (126).

(125) *bo* *totike*
bo tor-tik-e
stick take-AUX-IMP
“Go and take the stick.”

(126) *anta* *maye* *sware*
anta maye swar-e
2.SG front sit-IMP
“Sit in front of me.”

The pitch contour of (125) and (126) are as illustrated in Figure 5.5 and 5.6. The pitch line falls down significantly at the end of the sentence. Compared to declarative sentences, which also present a falling tone, imperatives can not be expressed in inverted word order according to my field data so far.

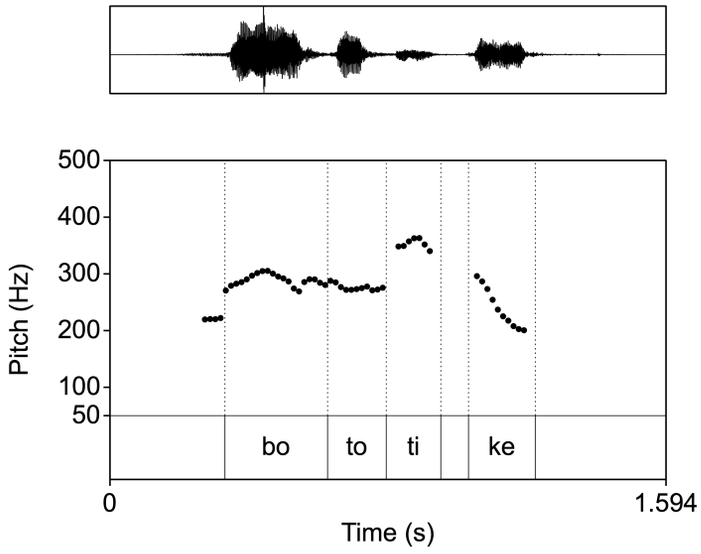

Figure 5.5: The pitch contour of *bo totike*

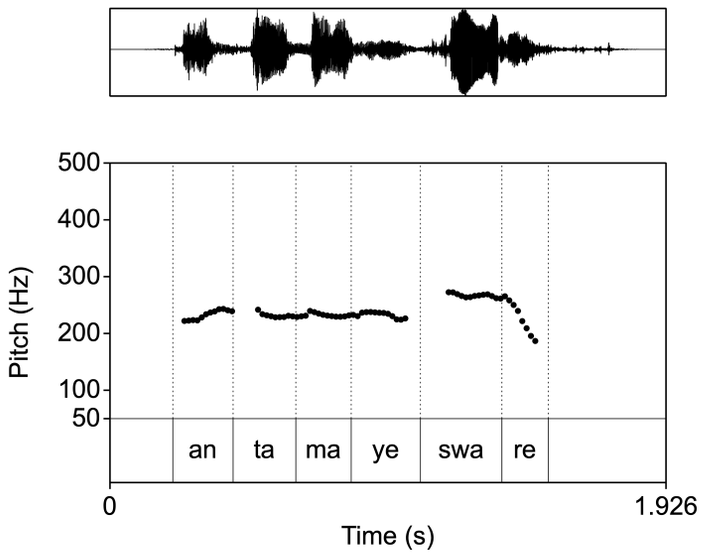

Figure 5.6: The pitch contour of *anta maye sware*

5.3 Interrogative Intonation

5.3.1 Yes-no Question

Yes-no questions in Aohua can use either rising tone or falling tone, depending on whether the question includes any word with interrogative meaning or not. Word with interrogative meaning, in Yes-no questions, generally refers to the interrogative particle *ga* which is derived from Atayal (Chien, 2019*b*).

Yes-no question with no interrogative particle is as shown in (127), and its pitch contour is shown in Figure 5.7.

(127) *syo* *aru*
syo aru
salt have.NPST
"Do you have any salt?"

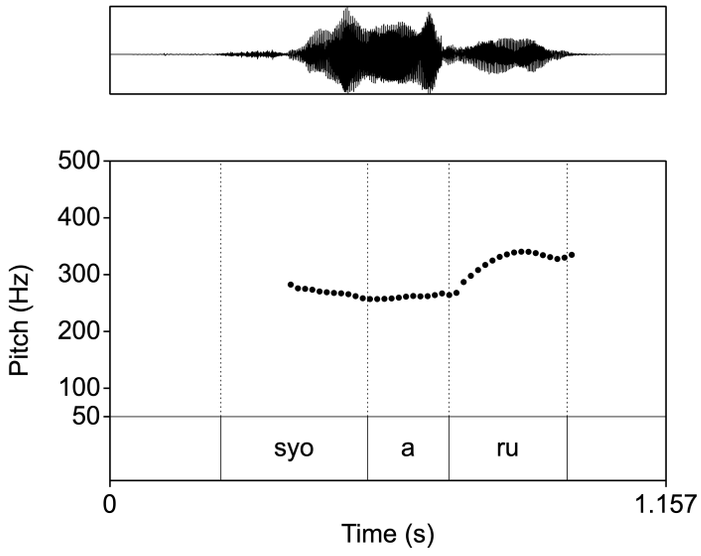

Figure 5.7: The pitch contour of *syo aru*

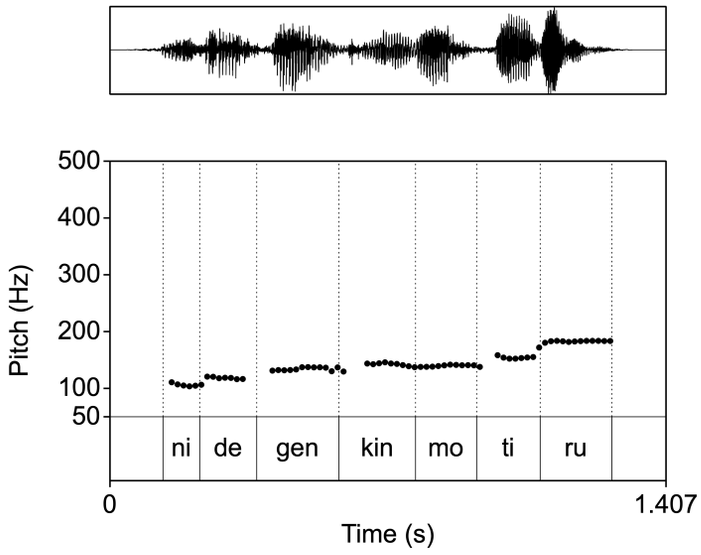

Figure 5.8: The pitch contour of *ni de genkin motiru*

As Figure 5.7 illustrates, the pitch becomes the highest when it comes to the last syllable *ru* of the sentence, which is a rising tone that expresses a interrogative meaning while there are no words with interrogative meaning involved. If the sentence in (127) is spoken in a falling tone, it becomes a statement meaning "I have salt.", henceforth, it is necessary to use a rising tone here in order to express interrogative meaning (Chien, 2019*b*). Another instance is as follows.

(128) *ni* *de* *genkin* *motiru*
|ni de| genkin mot-tiru
|2.SG GEN| cash carry-PROG.NPST
"Do you have your cash right now?"

Just as (127), the last syllable of (128) also has the highest pitch in the whole sentence. By using a rising tone, the speaker of the sentence can express an interrogative meaning instead of a declarative one.

Yes-no question with interrogative particle *ga* can have either rising tone or falling tone. Examples are shown in (129) and (130) respectively.

(129) *kore* *ga* *liulian* *ga*
kore =ga |liulian| =ga
this =NOM |durian| =Q
"Is this durian?"

(130) *sake* *nomu* *ga*
sake nom-ru =ga
alcohol drink-NPST =Q
"Do you want to drink alcohol?"

As illustrated in Figure 5.9, the pitch of (129) goes high at the end of the sentence, presenting a rising tone. As for (130), pitch goes down at the end of sentence, presenting a falling tone, as illustrated in Figure 5.10. According to these two examples, it is obvious that in yes-no question with question particle *ga* can have either rising tone or falling tone.

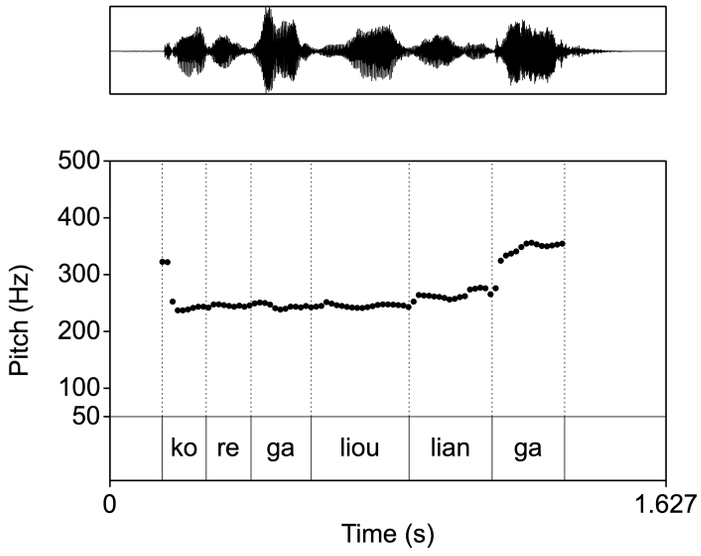

Figure 5.9: The pitch contour of *kore ga liou lian ga*

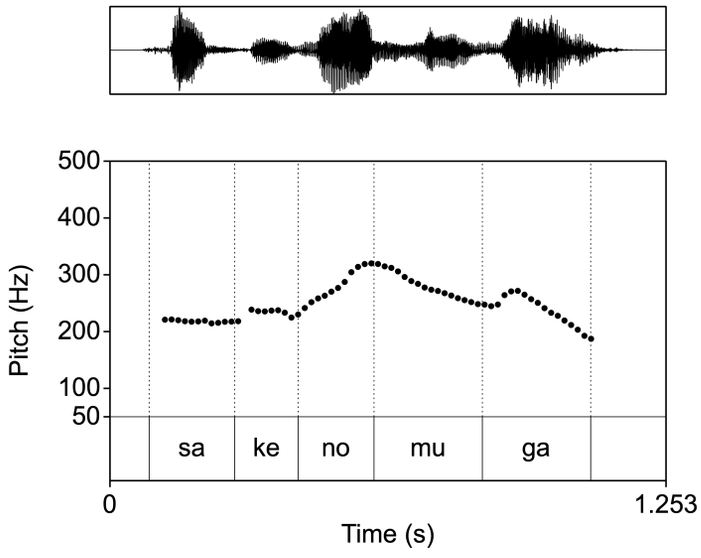

Figure 5.10: The pitch contour of *sake nomu ga*

5.3.2 Wh-Questions

Wh-question in Aohua is expressed with a falling tone just as declarative sentences. In wh-questions, words like *roko* 'where', *nani* 'what', *nanzi* 'when' are used to express the interrogative meaning, so there is no need to use rising tone to distinguish it from a statement. Examples are shown in (131), and its pitch contour is illustrated in Figure 5.11.

(131) *ima* *nanzi* *mo*
ima nanzi =mo
now when =SPF
"What time is it now?"

The pitch falls down at the end of the question, presenting a falling tone. Another example is provided in (132), and its pitch contour is as illustrated in Figure 5.12.

(132) *nani* *no* *musi* *kore*
nani =no musi kore
what =GEN insect this
"What insect is this?"

In (132), the demonstrative *kore* is at the right edge of the sentence. If we follow the general word order, it should be *kore (=wa) nani no musi*. Just as discussed in Section 5.1, in Aohua, speakers prefer to use inverted word order, which means the predicate is usually moved to the front of the sentence. When the predicate is moved to the front, the stress pattern and intonation moves together with the utterance itself. The pitch falls down significantly at *musi* and become lower when it comes to the demonstrative *kore*.

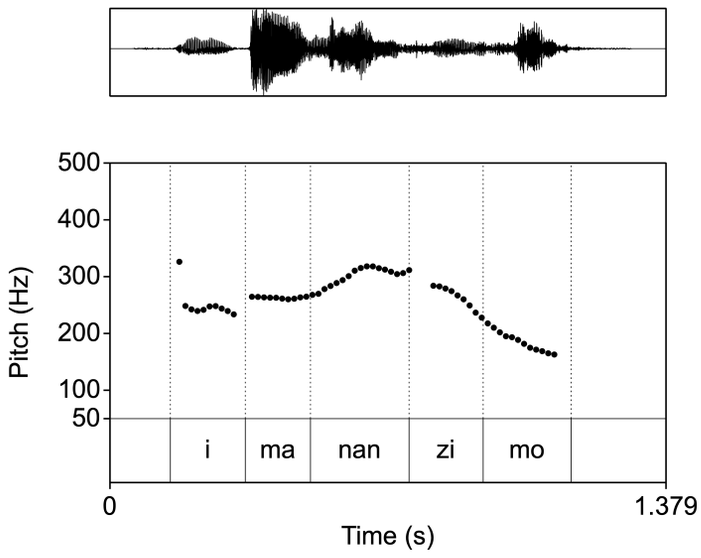

Figure 5.11: The pitch contour of *ima nanzi mo*

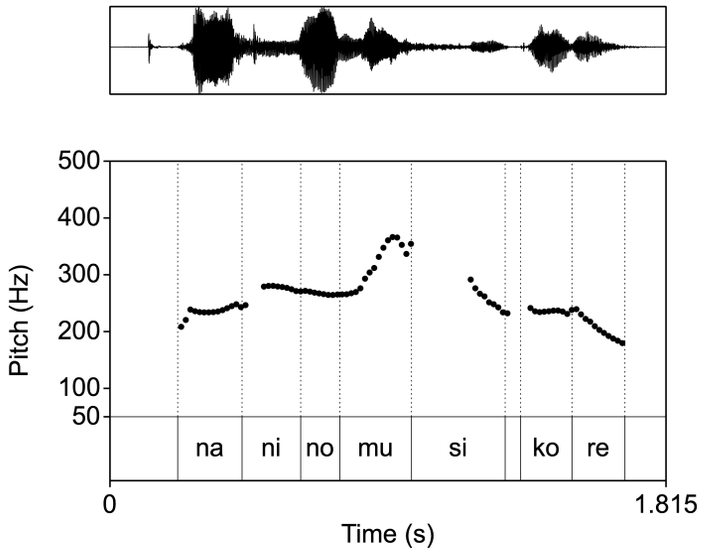

Figure 5.12: The pitch contour of *nani no musi kore*

Chapter 6

Conclusions

This study provides a basic description of the phonology of the Aohua dialect of Yilan Creole, based on my fieldwork research in the Aohua Village and several sessions of online investigation with Aohua speakers. So far, previous studies have focused on the Tungyueh dialect and the Hanhsi dialect. The actual situation of Aohua was unknown. This study is the first study that focus on the Aohua dialect.

In Chapter 1, the basic information about Yilan Creole and the background knowledge are introduced, including the sociohistorical background of Yilan Creole, a literature review, and the methods applied in this study.

Chapter 2 discusses the segmental phonology of the Aohua dialect. The consonants, vowels, and semi-vowels are discussed in detail with examples. Also, the sound adaptations in Aohua are discussed in Chapter 2. Many kinds of sound changes are applied when the word is adapted to Yilan Creole.

In Chapter 3, I discuss the syllable structure and phonotactics in Aohua. A generalization of the syllable structure in Aohua is proposed. The distribution of all the segments is also provided. The phonotactics of Japanese-originated words and Atayal-originated words are discussed separately, since there are different phonotactic rules between them.

Chapter 4 describes the stress system of the Aohua dialect. The word stress assignment can be determinated by word origin, syllable weight, and the length of the word. Although there are still a few exceptions, the model provided makes the stress assignment of Aohua predictable. Besides the word stress, phrasal stress and clausal stress are also discussed in Chapter 4. Moreover, I show that weight-sensitivity plays a vital role in the stress system of Aohua, and discuss it in a typological perspective.

Last but not least, the intonation of the Aohua dialect is described in Chapter 5. The intonation of declaratives, imperatives, and interrogatives are discussed. However, the relation between the intonation and stress is still unknown and further investigation needs to be conducted.

The data used in this study is limited to middle-aged speakers. The variation between different generations, and the comparison between them are left for future work.

A – a

abunay *adj.* dangerous; *危ない.*

abura *n.* oil; *油.*

agaw *interj.* wow; *あら, わお.*

ago *n.* chin; *あご.*

ahiru *n.* duck; *鴨.*

akay *adj.* red; *赤い, 赤.*

aki *n.* autumn, fall; *秋.*

amay *adj.* sweet; *甘い.*

ame *n.* rain; *雨.*

anmari *adv.* very, too; *とても.*

anta *pron.* second singular, you; *二人称, あなた, 君. Variant:* **nta**. **anta icu sigoto tiku** What time will you go to work? *何時に仕事に行くの？. Pl:* **antaci, antaraci**.

arawu *v.* wash; *洗う. Imperative:* **arawe**.

are *dem.* that (one); *あれ.*

are *pron.* third singular, he/she; *三人称, 彼/彼女.* **are sigoto namake** He/she is not good at work. (lit. He/she is lazy at work.) *あの人は仕事できない。（直訳；仕事ではなまけている。）. Pl:* **araci**.

ari *n.* ant; *蟻.*

aru *v.* have; *ある.* **syo aru** Do you have any salt? *塩あるの？.*

aruku *v.* walk; *歩く.*

asa *n.* morning; *朝.* **anta asa ga hiru kaytikuru** When will you come back? In the morning or afternoon? *朝か昼に帰ってくるの？.*

asate *n.* day after tomorrow; *あさって.*

ase *n.* sweat; *汗.* **ase retiru** I'm sweating. *汗をかいている。*

asi *n.* foot/feet; *足.* **asi itay** My foot/feet hurts. *足が痛い。*

asobi *n.* playing; *遊び.* **nisan no koromo niwa ni asobi stiru** My older brother's child is playing outside. *お兄さんの子供は外で遊んでいる。*

asta *n.* tomorrow; *明日.*

atama *n.* head; *頭.* **atama itay** I have a headache. *頭が痛い。*

atarasi *adj.* new; *新しい.*

azi *n.* taste; *味.* **kono yasay no azi ga ronna** How is the taste of this vegetable? *この野菜はどんな味してるの？.*

acuy *adj.* hot, warm; *暑い, 暖かい.* **acuy tayyo** The sun is hot. *太陽は暑い。* **acuy kono kimono haytara** This clothes is warm. (lit. If I wear this clothes I feel warm.) *この服は暖かい。（直訳：この服着たら暑い。）.*

B – b

ban *n.* night; *夜.*

bansya *n.* tribe; *集落.*

bengah *n.* star; *星.*

biyak *n.* pig; *豚.*

bo *n.* stick; *棒.* **bo totike** Go and take the stick. *棒を取って行け。*

bonaw *n.* peanuts; *ピーナッツ.* **cisay kono bonaw** This peanuts is so small. *このピーナッツは小さい。*

buga *n.* navel; *へそ.*

bugin *n.* feather; *はね.*

buli' *n.* knife; *ナイフ.*

burako *n.* tribe; *集落.*

buta *n.* pig; *豚.*

butaniku *n.* pork; *豚肉.*

byoki *n.* disease; *病気.*

C - c

cikay *adj.* near; *近い.*

cisay *adj.* small, little; *小さい.* **cisay kono bonaw** This peanuts is so small. *このピーナッツは小さい。*

cuku *n.* arrive; *着く.*

cumetay *adj.* cold; *冷たい.*

cyawan *n.* bowl; *お碗, 茶碗.* **watasi huruy no cyawan steru** I will throw the old bowl. *古いお碗を捨てる。*

cyoto *adj.* good, nice; *良い.* **ano mono cyoto** That thing is good. *あのものは良い。*

cyuba *n.* spit, saliva; *唾液.*

cyuci *n.* floor, earth; *床, 土.*

cyugako *n.* high school; *中学校.*

cɨki *n.* moon; *月.*

cɨme *n.* nail; *爪.*

D - d

dakara *conj.* therefore; *だから.*

daygako *n.* university; *大学.*

G - g

gacyo *n.* goose; *ガチョウ.*

gako *n.* school; *学校.* **wosi gako iku** I will go to school. *学校に行く。*

gamin *n.* root; *根.*

genkin *n.* cash; *現金.*

go *n.* five; *五.*

gogacu *n.* May; *五月.*

gogo *n.* afternoon; *午後.*

gohan *n.* cooked rice; *ごはん.* **gohan taku no nabe** Pot for cooking rice. *ご飯を炊くための鍋。*

goko *n.* five (quantifier); *五つ.*

gyus *n.* guts; *腸.*

H - h

ha *n.* tooth/teeth; *歯.*

haci *n.* eight; *八.*

hana *n.* nose, flower; *鼻, 花.*

hanbun *n.* half; *半分.*

hapa *n.* leaf; *葉.*

hara *n.* skin; *肌.*

haru *n.* spring; *春.*

hasi *n.* bridge; *橋.*

hasi *n.* chopsticks; *箸.*

hatake *n.* field; *畑.* **imo no hatake** Sweet potato field. *さつまいもの畑.*

hay *interj.* yes; *はい.*

hayay *adj.* fast, quick; *早い.*

he *n.* skin; *肌.*

hebi *n.* snake; *蛇.*

heci *n.* plain; *平原.*

hi *n.* fire; *火.*

hiroy *adj.* broad; *広い.*

hiru *n.* afternoon; *午後.* **anta asa ga hiru kaytikuru** When will you come back? In the morning or afternoon? *朝か昼に帰ってくるの？.*

hocyo *n.* kitchen knife; *包丁.*

hon *n.* book; *本.* **hon miritu** Reading books. *本を読んでいる。*

hone *n.* bone; *骨.*

hopa *adj.* big, large; *大きい.*

hosi *n.* star; *星.*

hoyin *n.* dog; *犬.*

huruy *adj.* old; *古い.* **watasi huruy no cyawan steru** I will throw the old bowl. *古いお碗を捨てる。*

huyu *n.* winter; *冬.*

hyuci *adj.* slippy; *すべすべとしている.*

hari *n.* needle; *針.*

heso *n.* navel; *へそ.*

I – i

i *n.* stomach; *胃.*

ici *n.* one (number); *一.*

iciban *adv.* very; *とても.* **agaw kaban oki iciban** Wow! This pumpkin is so big! *あら！このかぼちゃとても大きい！.*

icigacu *n.* January; *一月.*

icinensye *n.* first grade student; *一年生.*

icinici *n.* a day, one day; *一日.*

icizikan *n.* an hour, one hour; *一時間.*

icu *adv.* when; *いつ, 何時.* **anta icu sigoto tiku** What time will you go to work? *何時に仕事に行くの？.*

ic+mo *adv.* always; *いつも.*

iku *v.* go; *行く. Past:* **ita.** **nta hiru iku** Will you go out in the afternoon? *昼に出かけるか？.*

ikura *n.* how much; *いくら.* **ikura kore** How much is it? *これはいくら？.*

ima *n.* now; *今.*

imo *n.* sweet potato; *さつまいも.* **imo no hatake** Sweet potato field. *さつまいもの畑.*

imoto *noun.* younger sister; *妹.* **watasi imoto no iye oru** I am at my younger sister's place. *私は妹の家にいる。*

inaka *n.* countryside; *田舎.*

inu *n.* dog; *犬.*

iro *n.* color; *色.*

irootoko *n.* pretty boy; *綺麗な男.*

isi *n.* stone; *石.*

isyo *adv.* together; *一緒に.*

itay *adj.* painful; *痛い.* **atama itay** I have a headache. *頭が痛い。*

ito *n.* thread; *糸.*

iye *noun.* home, house; *家.* **watasi imoto no iye oru** I am at my younger sister's place. *私は妹の家にいる。*

K – k

ka *n.* mosquito; *蚊.*

kaban *n.* pumpkin, bag; *かぼちゃ, かばん.* **agaw kaban oki iciban** Wow! This pumpkin is so big! *あら！このかぼちゃとても大きい！.*

kacin *n.* cow; *牛.*

kacinniku *n.* beef; *牛肉.*

kacyan *n.* mother; *お母さん.*

kakay *n.* foot/feet; *足.*

kakeru *v.* souse, water (verb); *かける.*

kaki *n.* persimmon; *柿.*

kako *adj.* awesome; *かっこいい, すごい.*

kami *n.* paper; *紙.*

kaminoke *n.* hair; *髪の毛.*

kane *n.* money; *金. Variant:* **okane.** **kane aru** Do you have money? *金持っているの？.*

kanmo *n.* common cold; *風邪.*

kantan *adj.* easy; *簡単.*

kanzyo *n.* liver; *肝臓.*

karara *n.* body; *体.* **karara cyoto** (You have) a strong body. *（君の）体が丈夫だ。*

karay *adj.* salty; *しょっぱい.*

karuy *adj.* light; *軽い.*

kata *n.* shoulder; *肩.*

katay *adj.* hard; *硬い.*

kateni *adv.* arbitarily; *勝手に.*

kawo *n.* face; *顔.*

kaze *n.* wind; *風.*

kazyoku *n.* family; *家族.*

kcyan *n.* buttock; *お尻.*

ke *n.* fur; *毛.*

kemomo *n.* peach; *桃.* **kore ga kemomo no kudamono** This is a peach. *これは桃。*

kesacu *n.* police officer; *警察.*

ketun *n.* corn; *トウモロコシ.*

kino *n.* yesterday; *昨日.*

kmay *adj.* thick; *厚い.*

kocyo *n.* school principal; *校長.*

kokoro *n.* heart; *心.*

kome *n.* rice; *米.*

kongecu *n.* this month; *今月.*

kopu *noun.* cup; *コップ.*

kori *n.* ice; *氷.*

koromo *n.* child/children; *子供.* **nisan no koromo niwa ni asobi stiru** My older brother's child is playing outside. *お兄さんの子供は外で遊んでいる。*

koru' *n.* throat; *喉.*

kosi *adv.* a little; *少し.* **kore osi kosi toru** I want a little bit of these. *こちらのものを少しください。*

kosi *n.* waist; *腰.*

kotosi *n.* this year; *今年.* **kotosi amari syukaku stinay** The harvest this year isn't good. *今年の収穫あまりよくない。*

ku *n.* nine; *九.*

kubi *n.* neck; *頸.*

kuci *n.* mouth; *口.* **kuci itay** My mouth hurts. *口が痛い。*

kucibiru *n.* lip; *くちびる.*

kudamono *n.* fruit; *果物.*

kuleh *n.* fish; *魚.*

kuma *n.* bear; *熊.*

kumo *n.* cloud; *雲.*

kuray *adv.* about; *ほど, くらい.*

kuroy *adj.* black; *黒, 黒い.*

kuruma *n.* vehicle, car; *車.*

kusa *n.* grass; *草.*

kyo *n.* today; *今日.*

kyoray *n.* relatives; *親戚.*

kimono *n.* clothes; *服.* **acuy kono kimono haytara** This clothes is warm. (lit. If I wear this clothes I feel warm.) *この服は暖かい。（直訳：この服着たら暑い。）.*

kilux *adj.* hot; *暑い.*

kokan *n.* exchange; *交換.*

kore *dem.* this (one); *これ.* **ikura kore** How much is it? *これはいくら？.*

kni *n.* bone; *骨.*

kokumingako *n.* elementary school; *小学校.*

L – l

lalaw *n.* sword; *刀.*

M – m

maki *n.* tree; *木.*

manaka *n.* middle; *真ん中.*

manici *adv.* every day; *毎日.* **watasi manici sigoto stiru** I go to work every day. *私は毎日仕事している。*

mari' *n.* tongue; *舌.*

maro *n.* window; *窓.*

maye *n.* front; *前.*

mazuy *adj.* unsavory; *まずい.*

me *n.* eye; *目.*

mikan *n.* tangerine; *みかん.*

mimi *n.* ear; *耳.*

miru *v.* see; *見る.* *Progressive:* **mitiru**. *Imperative:* **mire**. **hon miritu** Reading books. *本を読んでいる。*

misye *n.* shop; *店.*

mizyu *n.* water; *水.* **mizyu kaketike** Go and water (the plants). *水をかけていきなさい。*

mayoy *n.* eyebrow; *まゆげ.*

mi *n.* fruit; *実.* **momo no mi** The fruit of plum. *すももの実.*

mici *n.* way, road; *道.*

mizikay *adj.* short; *短い.*

mmay *adj.* delicious; *うまい, おいしい.*

momo *n.* plum; *すもも.* **momo no tane** The seed of plum. *すももの種.*

mono *n.* thing, object; *物.* **mono taksan** Many things. *ものたくさんある。*

mune *n.* chest; *胸.*

muzukasi *adj.* difficult; *難しい.*

musi *n.* worm, insect; *虫.* **nani no musi kore** What insect is this? *この虫は何？.*

mina *adv.* all; *全部, すべて.* **kore watasi mina iru** I want all of these. *こちらのもの全部ほしい。*

N - n

nabe *n.* pot; *鍋.* **gohan taku no nabe** Pot for cooking rice. *ご飯を炊くための鍋。*

nacɨ *n.* summer; *夏.*

nagay *adj.* long; *長い.*

namake *adj.* lazy; *怠ける.* **are sigoto namake** He/she is not good at work. (lit. He/she is lazy at work.) *あの人は仕事できない。（直訳；仕事ではなまけている。）.*

namida *n.* tear; *涙.* **namida ocita** Tears fell down. *涙が落ちた。*

nana *n.* seven; *七.*

nansay *adv.* how old; *何歳.*

nanzi *adv.* what time; *何時.* **ima nanzi mo** What time is it now? *今何時なの？.*

nasubi *n.* eggplant; *なす.*

naye *n.* seedling; *苗.*

neko *n.* cat; *ねこ.*

neru *v.* sleep; *寝る.*

nesan *n.* older sister; *姉.*

ni *n.* two; *二.*

nigacu *n.* February; *二月.*

niku *n.* meat; *肉.*

ninensye *n.* second grade student; *二年生.*

ninici *n.* two days; *二日.*

nisan *n.* older brother; *兄.*

niwa *n.* outside; *外.*

niyoy *n.* smell; *匂い.* **kono yasay niyoy tara ronna** What kind of smell is this vegetable? *この野菜はどんな匂いしてるの？.*

nizikan *n.* two hours; *二時間.*

no *n.* brain; *脳.*

nomu *v.* drink; *飲む.* *Negative:* **nomanay**. *Past:* **nonda**. **sake nomu ga** Do you want to drink? *酒飲むか？.* **osi mizyu nomanay** I don't drink water. *私は水を飲まない。*

noro *n.* throat; *喉.*

nyatori *n.* chicken; *にわとり.*

nyaw *n.* cat; *ねこ.*

naka *n.* middle, inside of; *中.*

Ŋ – ŋ

ŋli *n.* fly; *蝿.*

ŋurus *n.* moustache, beard; *ひげ.* **agaw nagay anta no ŋurus** Oh, your beard is so long! *あら！ひげ長いね！.*

O – o

oba *adj.* exaggerated; *おおげさ.*

ojisan *n.* uncle; *おじさん.*

okasan *n.* mother; *お母さん.*

oki *adj.* big, large; *大きい.*

okiru *n.* wake up; *起きる. Past:* **okita**. *Progressive negative:* **okitinay**.

omoy *adj.* heavy; *重い.*

onaka *n.* belly; *お腹.*

onna *n.* woman, female; *女.*

opay *n.* breast; *おっぱい.*

oru *v.* stay, be; *いる.* **antaraci doko oru** Where are you? *君たちはどこにいるの？.*

osiri *n.* buttock; *お尻.*

osoy *adj.* late, slow; *遅い.* **anta sigoto osoy** You work so slow. *君は仕事遅い。*

otoko *n.* man, male; *男.*

otosan *n.* father; *お父さん.*

ototo *n.* younger brother; *弟.*

oy *adj.* many, much; *多い.*

P – p

papak *n.* ear; *耳.*

patun *n.* frog; *カエル.*

R – r

rakase *n.* peanuts; *ピーナッツ.*

rame *interj.* no; *だめ.*

raykon *n.* white radish; *大根.*

rihuy *n.* forehead; *額.*

roko *adv.* where; *どこ.* **anta roko sigoto tiru** Where do you work at? *君はどこで仕事しているの？. Variant:* **doko**. **antaraci doko oru** Where are you? *君たちはどこにいるの？.*

roku *n.* six; *六.*

rosite *adv.* why; *どうして.*

S – s

sakana *n.* fish; *魚.*

sake *n.* alcohol; *酒.* **sake nomu ga** Do you want to drink? *酒飲むか？.*

saki *adv.* just recently; *先.* **saki tocinta** I just hit something. *先ぶつかった。*

samuy *adj.* cold; *寒い.*

san *n.* three; *三.*

sangacu *n.* March; *三月.*

sanko *n.* three (quantifier); *三つ.*

sannensye *n.* third grade student; *三年生.*

sannici *n.* three days; *三日.*

sanzikan *n.* three hours; *三時間.*

sara *n.* plate; *お皿. Variant:* **syara**.

saru *n.* monkey; *猿.*

satoimo *n.* potato, taro; *里芋.*

sehuy *n.* potato, taro; *里芋.*

semay *adj.* narrow; *狭い.* **watasi no hatake ga semay** My field is small. *私の畑が狭い。*

senaka *n.* back; *背中.*

seri *n.* clean up; *整理. Variant:* **syeri**. **kosi seri se** Sort it out for a little bit! *少し整理しなさい。*

si *n.* four; *四.*

sigoto *n.* work, job; *仕事.* **watasi manici sigoto stiru** I go to work every day. *私は毎日仕事している。*

siken *n.* exam; *試験.*

sinzyo *n.* heart; *心.*

siroy *adj.* white; *白い, 白.*

siru *n.* soup; *スープ.*

sita *n.* down; *下. Variant:* **sta**.

sosi *n.* cleaning; *掃除.*

stacyu *n.* two (quantifier); *二つ.*

steru *v.* throw away, abandon; *捨てる.* **watasi huruy no cyawan steru** I will throw the old bowl. *古いお碗を捨てる。*

sukunay *adj.* few, a little; *少ない.*

suyren *n.* paddy field; *水田.*

syara *n.* plate; *お皿.*

syenmon *n.* speciality; *専門.*

syo *n.* salt; *塩.* **syo aru** Do you have any salt? *塩あるの？.*

syobay *n.* business; *商売.*

syoray *n.* future; *将来.*

sato *n.* sugar; *砂糖.*

syuzyume *n.* sparrow; *すずめ.* **osi syuzyume no tamago micuketa** I found an egg of sparrow. *すずめのたまごをみつけた。*

sɨberu *v.* slip; *滑る.*

sɨpay *adj.* sour; *すっぱい.*

stanay *adj.* dirty; *汚い.*

sto *n.* person, human; *人.*

suzusi *adj.* cool (temperature); *涼しい.*

syukaku *n.* harvest; *収穫.* **kotosi amari syukaku stinay** The harvest this year isn't good. *今年の収穫あまりよくない。*

suru *v.* do; *する. Variant:* **siru**. *Past:* **sta**. *Progressive:* **stiru**. *Imperative:* **ste/se/sye**. **wasi ima syeri suru** I am going to clean it up now. *今から整理する。* **watasi manici sigoto stiru** I go to work every day. *私は毎日仕事している。* **hayaku sye** Do it quickly! *早くしなさい。*

syensye *n.* teacher; *先生.*

syeto *n.* student; *生徒.*

syakin *n.* debt; *借金.*

T – t

tabako *n.* tobacco; *タバコ.*

tahi *n.* ant; *蟻.*

taku *v.* cook; *炊く. Imperative:* **take**.

tamago *n.* egg; *たまご.* **tori no tamago** Bird's egg. *鳥のたまご。*

te *n.* hand; *手.* **anta no te piao laing mitara** Your hands are beautiful. *あなたの手が綺麗に見える。*

taberu *v.* eat; *食べる. Past:* **tabeta**. *Progressive:* **tabetiru**. *Progressive negative:* **tabetinay**. **anta gohan taberu mo** Do you want to have breakfast/lunch/dinner? *あなたはごはん食べるか？.*

tane *n.* seed; *種.* **momo no tane** The seed of plum. *すももの種.*

tayyo *n.* sun; *太陽.* **acuy tayyo** The sun is hot. *太陽は暑い。*

tekan *n.* blood vessels; *血管.*

tenki *n.* weather; *天気.*

tocyu *n.* one (quantifier); *一つ.*

tori *n.* bird, chicken; *鳥, にわとり.* **tori no tamago** Bird's egg. *鳥のたまご。*

toriniku *n.* chicken; *鶏肉.*

tosyori *n.* elderly; *年寄り.* *Variant:* **tosiyori**.

toy *adj.* far; *遠い.* **iciban toy** Very far. *非常に遠い。*

tunux *n.* stone; *石.*

tari *n.* knee; *ひざ.*

tengoku *n.* sky, heaven; *空, 天国.*

tocin *v.* clash into; *ぶつかる.* *Past:* **tocinta**. **saki tocinta** I just hit something. *先ぶつかった。*

taksan *adv.* many, much; *たくさん.* **mono taksan** Many things. *ものたくさんある。*

tocyan *n.* father; *お父さん.*

tabun *adv.* probably; *たぶん.*

toru *v.* take; *取る.* **kore zenbu toru** I want all of these. *こちらのものを全部もらう。*

takay *adj.* high; *高い.*

tomato *n.* tomato; *トマト.*

U - u

uma *n.* horse; *馬.*

usiro *n.* back; *後ろ.*

uraw *n.* earth; *土.*

uye *n.* up; *上.*

usuy *adj.* thin; *薄い.*

W - w

warawu *v.* laugh; *笑う.* *Progressive:* **waratiru**. **nani waratiru** What are you laughing at? *何を笑っているの？.*

waruykuci *n.* bad words, gossip; *悪口.*

waruy *adj.* bad; *悪い.*

werun *n.* chicken; *にわとり.*

wakaysyenen *n.* youth, teenager; *若者.* *Variant:* **wakaysenen**.

watasi *n.* first singular, I; *一人称, 私.* *Variant:* **wasi**; **osi**; **wosi**. **wasi ima syeri suru** I am going to clean it up now. *今から整理する。* **wosi gako iku** I will go to school. *学校に行く。* *Pl:* **waraci, anci**.

Y - y

yaginiku *n.* mutton; *羊肉.*

yama *n.* mountain; *山.*

yamabuta *n.* wild boar; *イノシシ.*

yamanaka *n.* in the mountain; *山の中.*

yasay *n.* vegetable; *野菜.* **kono yasay no azi ga ronna** How is the taste of this vegetable? *この野菜はどんな味してるの？.*

yamaniku *n.* meat of wild boar; *イノシシ肉.*

yagi *n.* goat; *やぎ.*

yobu *v.* call; *呼ぶ.*

yongacu *n.* April; *四月.*

yonko *n.* four (quantifier); *四つ.*

yuki *n.* snow; *雪.*

yaway *adj.* soft; *柔らかい.*

yoru *n.* night; *夜.*

yubin *n.* bag; *袋.*

yukuri *adv.* slowly; *ゆっくり.* **kono niku yukuri take** Cook the meat slowly. *この肉をゆっくり煮なさい。*

yubi *n.* finger; *指.*

yuŋay *n.* monkey; *猿.*

yume *n.* dream; *夢.*

Z – z

zitensya *n.* bicycle; *自転車.*

zenbu *adv.* all; *全部, すべて.* **kore zenbu toru** I want all of these. *こちらのものを全部もらう。*

zyu *n.* ten; *十.*

zyuici *n.* eleven; *十一.*

zyuni *n.* twelve; *十二.*

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