

Tonal Patterns in the 15th Century: a Corpus-based Approach

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Abstract

This paper investigates the tonal patterns in the 15th century from a corpus-based approach, focusing on two historical sources, 日本館譯語 *Riběn kuǎn yìyǔ* ‘A Wordlist of Chinese-Japanese Phrases’ and 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* ‘A Wordlist of Chinese-Korean Phrases’. The results suggest that Japanese and Korean are significantly different in the phonetic transcription of low tone in monosyllabic words and in the first syllable of a disyllabic word. The results also suggest that Mandarin Chinese in the 15th century tends to be a falling tone in the second syllable of a disyllabic word.

1 Introduction

The issue concerned with the phonetic value of Early Ming Phonology in the 15th century can be investigated from two sources: a) traditional Chinese rhyme books and b) wordlists for foreign languages transcribed logographically by using Chinese characters. The traditional Chinese rhyme books include 洪武正韻 *Hóngwǔ zhèngyùn* (1375) ‘The Standard Rhyme of Hóngwǔ’ and 韻略易通 *Yùnlüè yìtōng* (1445) ‘The Easy Access to Rhymes’; the wordlists for foreign languages include 日本館譯語 *Riběn kuǎn yìyǔ* ‘A Wordlist of Chinese-Japanese Phrases’ and 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* ‘A Wordlist of Chinese-Korean Phrases’,¹ for example. When it comes to the two types of sources, the main concern has been segments rather than prosody, given that in traditional Chinese phonology, it is difficult to present prosody by using Chinese characters. Besides, Chinese rhyme books are often compiled in such a way that presents initials, rhymes and tones separately. Such presentation is significantly

different from the wordlists for foreign languages, which show no distinction of initials, rhymes and tones, and are transcribed by using Chinese characters for the foreign phrases. The wordlists for foreign languages could preserve different information from the traditional rhyme books not only in the reconstruction of segments, but also in the correspondence of prosody, since prosodic similarity should also be taken into consideration when the compilers were transcribing foreign languages by Chinese characters.

Speaking of the prosodic system, it is certain that Early Mandarin Chinese in the 14th - 15th century² has at least five tones, as suggested by the rhyme books, 洪武正韻 *Hóngwǔ zhèngyùn* (1375) ‘The Standard Rhyme of Hóngwǔ’ and 韻略易通 *Yùnlüè yìtōng* (1445) ‘The Easy Access to Rhymes’. On the other hand, Japanese and Korean also have their own prosodic systems. Japanese is a language with pitch-accent, marked by high pitch-accent and low pitch-accent. The prosodic system of Korean, however, has dramatically changed from Middle Korean to Modern Korean. Middle Korean is a language with three tones: level tone, falling tone and rising tone (Lee and Ramsay, 2011: 123).³

Nevertheless, previous studies based on the wordlists for foreign languages seldom touch upon prosody in 日本館譯語 *Riběn kuǎn yìyǔ* ‘A Wordlist of Chinese-Japanese Phrases’ (e.g., Ding, 2008 and Lin, 2009) and in 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* ‘A Wordlist of Chinese-

¹ The real publication data is not clear for the two wordlists, but it is certain that they are published in early years of Ming dynasty.

² In traditional Chinese phonology, Mandarin Chinese starts from 中原音韻 *Zhōngyuán yīnyùn* ‘The Standard Rhyme in Central Plain’ (1324 AD), in Yuan Dynasty (1271AD – 1368 AD).

³ The notation of the three tones in Middle Korean is based on Chinese tradition, 平 *píng* ‘level’, 上 *shàng* ‘rising’, 去 *qù* ‘falling’ and 入 *rù* ‘entering’. However the real tonal values of the three tones are somehow different from Chinese tones. According to Chong (1976: 22) and Lee (1990: 147), a level tone has low level value (L), a falling tone has high level value (H) and a rising tone is a combination of low and high tone (LH).

Korean Phrases' (e.g., Kang 1995), all of which put more stress on segments. Besides, it is not clear whether or not in the two historical sources Chinese tones can represent Japanese pitch-accent and Korean tones. Therefore the goal of this study is to investigate prosody in Early Ming dynasty based on the historical records for foreign languages, and I would like to address two questions:

a) Do tones in Early Ming phonology represent Japanese pitch-accent and Korean tones?

b) Is there any difference between the transcription in Japanese and Korean?

In order to answer the two research questions, I adopt a corpus-based approach and deal with monosyllabic and disyllabic phrases in the two historical resources for foreign languages in the 15th century, 日本館譯語 *Riběn kuǎn yìyǔ* 'A Wordlist of Chinese-Japanese Phrases' and 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* 'A Wordlist of Chinese-Korean Phrases'. The results shown in this study will have implication not only for the phonology of the source language, namely, Early Ming phonology, but also for the phonology of the target languages, that is, Japanese and Korean in the 15th century.

The paper is organized as follows. Section 2 introduces the data examined in this study. Section 3 presents the results, followed by a general discussion in section 4. Section 5 provides the conclusion and some suggestions for future studies.

2 Methodology

The main sources for this study are 日本館譯語 *Riběn kuǎn yìyǔ* 'A Wordlist of Chinese-Japanese Phrases' and 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* 'A Wordlist of Chinese-Korean Phrases'. The two sources are compiled in such a way that a Chinese word/phrase is provided first and then followed by a phonetic transcription of Japanese or Korean, using Chinese characters. For example, Chinese 風 'wind' is logographically transcribed by 刊節 for Japanese かぜ *kaze* 'wind' and by 把論 for Korean 바람 *param*⁴ 'wind'.

The two major sources include different types of entries. The majority is a single word and then phrases. There are some sentences in the two sources. In total, 日本館譯語 *Riběn kuǎn yìyǔ* 'A

Wordlist of Chinese-Japanese Phrases' has 566 entries; 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* 'A Wordlist of Chinese-Korean Phrases' contains 596 entries.

In this study, I will use Ding's (2008) notation for 日本館譯語 *Riběn kuǎn yìyǔ* 'A Wordlist of Chinese-Japanese Phrases' and Kang's (1995) notation for 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* 'A Wordlist of Chinese-Korean Phrases'.

In this study, I will primarily cope with two types of syllable structures, monosyllabic and disyllabic words, by which I refer to the entries that correspond to one/two Japanese kana or one/two Korean Hangeul. Table 1 present the entries found in the two historical resources.

	One	Two
Japanese Kana	34	142
Korean Hangeul	71	115

Table 1. The tokens of the entries analyzed in this study

Attention should be given here. Japanese kana can perfectly correspond to Chinese characters one by one. In other words, one Japanese kana can be presented by one Chinese character. As for Korean, one Korean Hangeul sometimes corresponds to one Chinese character and sometimes to two Chinese characters. Such correspondences usually result from Korean coda *-l*, which is not attested in Chinese phonology. Korean coda *-l* is then transcribed by Chinese character, 二, in particular. For instance, Korean 하늘 *ha.neul* 'sky, heaven', which is a disyllabic word, is transcribed by three Chinese characters, 哈嫩二. The first Chinese character, 哈, is associated with the first syllable, *ha*, and the second Chinese character, 嫩, is aligned with the second syllable, *neu*, without including the coda *-l*. The third Chinese character, 二, specifically represents coda *-l* in the second syllable.

The two-to-one correspondences are also found in other codas, such as *-s*, which is also not attested in Chinese phonology. In this case, it has to be again transcribed by an extra Chinese character, as seen in 花 'flower', which is transcribed by two Chinese characters, 果思, for Korean 꽃 *kkos* 'flower'.

In this study, the two-to-one correspondences are included in the token calculation, but the tonal values of the Chinese characters that are

⁴ The spelling conventions for Korean follow Sohn (2001: 139-141).

used to present the Korean codas which are not attested in Chinese will be disregarded. That is to say, while 哈嫩二 ‘sky, heaven’ for Korean 하늘 is considered one token, only the tonal values of the first and second Chinese characters, 哈嫩, are taken into account.

How the tonal values of the selected entries are determined depends on two criteria: a) the classification in Middle Chinese, that is, 廣韻 *Kuǎng yùn* (1008 AD), and b) the tonal value of modern Mandarin Chinese. Of course, from Middle Chinese to modern Mandarin Chinese, there is a drastic change in tonal value. In Middle Chinese there are four tones, 平 *píng* ‘level’, 上 *shǎng* ‘rising’, 去 *qù* ‘falling’ and 入 *rù* ‘entering’.⁵ Later, the four tones split depending on the voicing of initials, 陰 *yīn* ‘voiceless’ and 陽 *yáng* ‘voiced’. Theoretically there should be eight tones.⁶ Later in the 14th century, according to 中原音韻 *Zhōngyuán yīnyùn* (1324) ‘Phonology of the Central Plain’, the eight tones underwent merger and then reduced to five tones,⁷ which are close to the number of tones in modern Mandarin Chinese.

The fact that Early Mandarin Chinese in the 14th - 15th century is close to modern Mandarin Chinese in the numbers and types of tones does not necessarily indicate that the tonal values are identical with each other in the two different periods of Chinese. Therefore, when transcribing the tonal values of the selected entries, I will pay more attention to categories instead of the real tonal value, even though the tonal values of modern Mandarin Chinese tones are also helpful in determining the categories.

The tonal patterns of the selected entries will be presented in section 3.

⁵ Entering tone differs from the other three tones, because entering tone essentially refers to a syllable ending in voiceless stops, -p, -t, and -k.

⁶ The eight tones are 陰平 *yīn píng* ‘level tone with voiceless initial’, 陽平 *yáng píng* ‘level tone with voiced initial’, 陰上 *yīn shǎng* ‘rising tone with voiceless initial’, 陽上 *yáng shǎng* ‘rising tone with voiced initial’, 陰去 *yīn qù* ‘falling tone with voiceless initial’, 陽去 *yáng qù* ‘falling tone with voiced initial’, 陰入 *yīn rù* ‘entering tone with voiceless initial’ and 陽入 *yáng rù* ‘entering tone with voiced initial’.

⁷ In traditional Chinese phonology, the merger of eight tones to four tones from Middle Chinese to Modern Mandarin Chinese could be summarized as three processes: a) level tones have phonation distinction, b) a rising tone with voiced initial becomes a falling tone and c) entering tones have dropped the coda and merged with the other three tones.

3 Results

Results are presented in two parts. Section 3.1 presents the tonal patterns of one kana and Hangeul, and section 3.2 shows the tonal patterns of two kana and Hangeul.

3.1 Tonal Patterns of One Kana and Hangeul

Table 2⁸ and Table 3 show the tonal patterns of one kana in Japanese and one Hangeul in Korean, respectively.

Tones	Tokens
1	8 (23.5%)
2	10 (29.4%)
3	6 (17.6%)
4	10 (29.4%)
Total	34 (100%)

Table 2. The distribution of one kana

Tones	Tokens
1	12 (16.9%)
2	15 (21.1%)
3	23 (32.4%)
4	21 (29.6%)
Total	71 (100%)

Table 3. The distribution of one Hangeul

The attestations in Table 2 and Table 3 vary from each other. In Japanese, there are 34 entries in total, while in Table 3 there are 71 entries in total. In Tone 1, there are 8 attestations in Japanese (23.5%) and 12 attestations in Korean (16.9%). For Tone 2, there are 10 attestations in Japanese (29.4%) and 15 attestations in Korean (21.1%). An obvious difference between Japanese and Korean consists in Tone 3.

⁸ In Table 2 and the following tables, I number the four tones, 陰平 *yīn píng* ‘level tone with voiceless onset’ as 1, 陽平 *yáng píng* ‘level tone with voiced onset’ as 2, 陰上 *yīn shǎng* ‘rising tone with voiceless onset’ as 3, and 去 *qù* ‘falling tone’ as 4. This system is commonly used in Taiwan for the four tones.

It is necessary to explain why there are five tones in previous section, but I only mark four tones in this section. There is no need to separate entering tones from other tones, since the codas in entering tones are not counted in transcription for Japanese and Korean. For instance, Chinese 霜 ‘frost’ for Korean 서리 *se.li* ‘frost’ is transcribed by 色立. These two Chinese characters belong to entering tones in Middle Chinese. It is clear that the codas in the entering tones are either ignored purposefully or disappeared in the 15th century.

Japanese mono kana is least transcribed by Chinese Tone 3, whereas the most frequently used tone for transcribing Korean mono Hangeul is Tone 3. The distribution in the two languages is almost identical in Tone 4, the falling tone, both of which are more than one-quarter, approximately 29%.

3.2 Tonal Patterns of Two Kana and Hangeul

Tonal patterns of two kana and Hangeul are provided below. First of all, Table 4 and Table 5 demonstrate the distributions of tonal patterns of the first and the second kana in Japanese, respectively.

Tones	Tokens
1	38 (26.8%)
2	38 (26.8%)
3	23 (16.2%)
4	43 (30.2%)
Total	142 (100%)

Table 4. The distribution of the first kana in a two-kana phrase

Tones	Tokens
1	34 (23.9%)
2	28 (19.7%)
3	20 (14.1%)
4	60 (42.3%)
Total	142 (100%)

Table 5. The distribution of the second kana in a two-kana phrase

In Table 4 and Table 5, the distributions of tonal patterns of the first and the second kana in Japanese show similar tendency to the distribution in Table 2. In either the first kana or the second kana, Tone 3, that is, 陰上 *yīn shǎng* ‘rising tone with voiceless onset’, is the least favored tone for transcribing Japanese. In Table 5, more than forty percent of attestations appear in Tone 4, suggesting that the tonal pattern of the second kana in a two-kana phrase should be different from the tonal pattern of mono kana or the first kana in a two-kana phrase.

The distributions of tonal patterns of the first and the second Hangeul in Korean are shown in Table 6 and Table 7.

Tones	Tokens
1	18 (15.6%)
2	24 (20.9%)
3	46 (40.0%)
4	27 (23.5%)
Total	115 (100%)

Table 6. The distribution of the first Hangeul in a two-Hangeul phrase

Tones	Tokens
1	8 (7.0%)
2	11 (9.6%)
3	28 (24.3%)
4	68 (59.1%)
Total	115 (100%)

Table 7. The distribution of the second Hangeul in a two-Hangeul phrase

In Korean, the distribution of the first Hangeul in a two-Hangeul phrase, as shown in Table 6, is similar to the distribution of a single Hangeul in Table 3 where Tone 3 is the most favored tone and Tone 1 is the least favored one.

The distribution of the second Hangeul in a two-Hangeul is skewed, however, as Table 7 suggests. About sixty percent of the second Hangeul is transcribed by Tone 4. This skewed distribution of the tonal pattern of the second Hangeul in a two-Hangeul phrase significantly differs from the distribution of tonal pattern in a single Hangeul and the first Hangeul in a two-Hangeul phrase, since both of them prefer Tone 3 to other tones.

It could be tentatively concluded here. When Japanese kana and Korean Hangeul are transcribed in the historical sources in the 15th century, there is a major difference in Tone 3, 陰上 *yīn shǎng* ‘rising tone with voiceless onset’ which is the least favored tone for Japanese, but is the most favored tone for Korean, for a single kana/Hangeul and the first kana/Hangeul in a two-kana/Hangeul phrase. As for the second kana/Hangeul in a two-kana/Hangeul phrase, it is Tone 4, 去 *qù* ‘falling tone’, that is the most preferred tone. The differences are discussed in the next section.

4 Discussion

This study addresses two research questions: a) Do tones in Early Ming phonology represent

Japanese pitch-accent and Korean tones? b) Is there any difference between the transcription in Japanese and Korean?

Results in section 3 have suggested that there are two significant differences in Chinese and Japanese/Korean. First of all, the results are of great help in understanding the prosodic system of Japanese and Korean in the 15th century as well as the behavior of Chinese tones. Although the real phonetic value of each tone is unknown, Tone 3, 陰上 *yīn shǎng* ‘rising tone with voiceless onset’, in Early Mandarin Chinese behaves differently from the other tones, as reflected in the transcription of Japanese kana and Korean Hangeul. As suggested by Table 2 and Table 4, Tone 3 in Early Mandarin Chinese is not preferred for Japanese kana, whereas it is suggested by Table 3 and Table 6 that Tone 3 is favored to transcribe Korean Hangeul. The differences draw the attention.

Japanese pitch-accent has only two types of register, low (L) and high (H). Contour types, such as rising (R = L+H) and falling (F = H+L), are also attested in Old Japanese (Okumura 1995). However, in the 11th-12th century, contour types started to disappear (Okumura 1995: 188).⁹ Only falling contour type is persevered in modern Kyoto Japanese. It could be surmised from the prosodic change that Japanese disfavored a contour like rising, and in the 15th century, a rising type might have disappeared, resulting in the fact that Tone 3, which is a rising contour starting with a low pitch, is not preferred for Japanese.

In contrast, Tone 3 in Chinese is preferable to other tones for Korean.¹⁰ This corresponds to the fact that Korean in the 15th century tends to have more tones that start with a low level pitch. Korean tones are comprised by a low level tone (L) and a high level tone (H), and a rising tone stems from the combination of low + high (L + H).

How Tone 3 in Chinese is used differently to transcribe Japanese kana and Korean Hangeul reflects the prosodic difference of Japanese and Korean in the 15th century. A contour like LH in

Japanese might have disappeared so that Tone 3 in Chinese became the least favored choice for Japanese. On the other hand, Tone 3 in Chinese is preferred in Korean, due to the fact that Korean has a rising tone like LH.

This distinction of Tone 3 in Japanese and Korean, however, is not found in the second kana of Japanese and Hangeul of Korean, since the second kana/Hangeul is often transcribed by Chinese Tone 4. This might be due to a tendency that in Chinese, especially in a phrase with two syllables, the second syllable is preferred to be a falling tone.

Table 8 and Table 9 show the tokens of the possible combination of tones in a phrase with two Japanese kana and Korean Hangeul.

1 st \ 2 nd	1	2	3	4	Total
1	9 6.3%	7 4.9%	8 5.6%	10 7.1%	34 23.9%
2	8 5.6%	9 6.3%	1 0.7%	10 7.1%	28 19.7%
3	3 2.1%	7 4.9%	7 4.9%	3 2.1%	20 14.1%
4	18 12.7%	15 10.6%	7 4.9%	20 14.1%	60 42.3%
Total	38 26.7%	38 26.7%	23 16.2%	43 30.4%	142 100%

Table 8. The tokens of all possible combination of tones in a phrase with two Japanese kana

1 st \ 2 nd	1	2	3	4	Total
1	1 0.9%	1 0.9%	3 2.6%	3 2.6%	8 7.0%
2	2 1.7%	5 4.3%	3 2.6%	1 0.9%	11 9.5%
3	3 2.6%	3 2.6%	14 12.2%	8 7.0%	28 24.3%
4	12 10.4%	15 13.0%	26 22.6%	15 13.0%	68 59.1%
Total	18 15.7%	24 20.8%	46 40%	27 23.5%	115 100%

Table 9. The tokens of all possible combination of tones in a phrase with two Korean Hangeul

As discussed in Table 5 and Table 7, the distribution is skewed. The second kana in a two-kana phrase and the second Hangeul in a two Hangeul phrase are often transcribed by Chinese Tone 4, which is a falling tone. The reason why

⁹ Modern Kyoto Japanese preserves the falling contour, as in LF, suggesting that rising contour disappears faster than falling contour.

¹⁰ Most modern Korean dialects have lost tones, except for Kyongsang Korean, which preserves three tones: high tone, mid tone and low tone (Sohn 2001: 200). Unlike the tones in Middle Korean, the phonetic value of the tones in Kyongsang Korean is more like modern Japanese pitch-accent, which tends to be register.

the second kana/Hangeul is often transcribed by Tone 4 attributes to the preferred tonal combination in Chinese. Ding (2008) provided a diachronic survey of Chinese tonal development and a synchronic investigation of possible combinations of different tones. In a phrase with two Chinese characters, the first Chinese character is often a high level tone and the second character is often a falling tone.¹¹ In addition to Ding's (2008) study, Wang (2011: 133-134) reported that in modern Mandarin Chinese, the most prominent combination is a falling tone + a falling tone (15.2%) and the percentage of the combination that the second word is a falling tone is about 35%.

Taking the diachronic and synchronic studies together, the tendency that the second kana in Japanese and Hangeul in Korean are transcribed by Tone 4, which is a falling tone, is affected by Chinese tonal pattern, instead of any Japanese or Korean prosodic features. A question arises, however. Could it be possible that the tendency that the second kana/Hangeul is often transcribed by Tone 4 results from the patterns of Japanese pitch-accent or Korean tones? The answer is no, because how a two-kana/Hangeul phrase is transcribed should be consistent. That is to say, how a single Japanese kana or Korean Hangeul is transcribed follows the target language's prosodic system in a two-kana/Hangeul phrase. The results presented in section 3, nevertheless, suggest that a single kana/Hangeul and the first kana/Hangeul in a two-kana/Hangeul phrase behave similarly, while the second kana/Hangeul significantly differs. In addition, as discussed above, Japanese has stronger disfavor of rising contour (LH) over falling contour (HL), so Chinese falling tone should be the least optimal candidate for Japanese. The different strategy of transcription for a single kana/Hangeul and a two-kana/Hangeul phrase indicates that the compilers of 日本館譯語 *Ribēn kuǎn yìyǔ* 'A Wordlist of Chinese-Japanese Phrases' and 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* 'A Wordlist of Chinese-Korean Phrases' tried their best to be faithful to Japanese and Korean when they were transcribing a single kana/Hangeul and the first kana/Hangeul, whereas the compilers were unable to distinguish the pitch-accent or tones in the second kana/Hangeul. Instead, the compilers replaced the second kana/Hangeul in a two-kana/Hangeul phrase with the tonal pattern for

¹¹ The first character is often a level tone with voiceless onset.

Chinese two-character phrases, which consists of a falling tone in the second character.

In Table 9, the combination of Tone 3 and Tone 3 (12.2%) in Korean draws our attention. This combination discloses another phenomenon. When two third tones can appear consecutively, the second one should be relatively higher than the first Tone 3 so that the phrase with two third tones is similar to the combination of Tone 3 and Tone 4. This change suggests that in the 15th century, there might be tone sandhi in Chinese.¹²

The processes could be briefly presented in Table 10.

Monosyllabic	Single	
Disyllabic	First	Second
	↑ Japanese/Korean	↑ Chinese

Table 10. The prosodic patterns of Japanese kana and Korean Hangeul by Chinese tones

Although according to the corpus, it could be tentatively summarized that there are two types of transcribing Japanese kana and Korean Hangeul by Chinese characters, in the corpus, a minimal pair is attested, as shown in (1) for Japanese.

(1)

Examples	花 <i>hana</i>	鼻 <i>hana</i>
Meaning	'flower'	'nose'
Chinese character	法納	法納
Chinese tones	3+4	3+4
Tokyo Japanese	LH	LH
Kyoto Japanese	HL	HH

In (1), the two examples, 花 *hana* 'flower' and 鼻 *hana* 'nose' have different representations in pitch-accent, regardless of regional differences. The two examples, however, are transcribed by identical Chinese characters. This phenomenon is also found in (2) for Korean.

¹² The tone sandhi process should be also attested in Japanese sources, since this phonological process is a Chinese phenomenon. In Table 8, it should be reasonable to assume that this tone sandhi takes place as well. However, since Japanese does not favor Tone 3, the chance becomes low that Tone 3 + Tone 3, which is phonetically more like Tone 3 + Tone 4, is chosen.

(2)			
Examples	— <i>hana</i>	天 <i>hanal</i>	
Meaning	‘one’	‘heaven, sky’	
Chinese character	哈那	哈嫩(二)	
Chinese tones	1+4	1+4	
Middle Korean	LL	LH	

Although examples in (2) are not perfect minimal pair, they serve well enough to demonstrate the differences. In Middle Korean, — *hana* ‘one’ and 天 *hanal* ‘heaven, sky’ are different in their tones of the second Hangeul. — *hana* ‘one’ has a low tone, whereas 天 *hanal* ‘heaven, sky’ has a high tone. However, the two examples are identically transcribed by the combination of Tone 1 and Tone 4.

Examples in (1) and (2) infer that Chinese in the 15th century might have different level tone, Tone 1 as high level tone and Tone 3 as low level tone.¹³ The two pairs also suggest that the Chinese compilers of the two books in the 15th century showed less distinction in the second kana/Hangeul than in the first kana/Hangeul and the mono kana/Hangeul.

5 Conclusion

This study starts from a simple question that how Chinese compilers of the wordlists of Chinese-Japanese and Chinese-Korean in the 15th century transcribes Japanese pitch accent and Korean tones by using Chinese characters. The analysis and results lead us to believe that the Chinese compilers had noticed the prosodic differences between Chinese, Japanese and Korean.

The findings in this study have implications for the understanding of Japanese and Korean prosodic systems in the 15th century. Japanese disfavors a low pitch-accent for mono kana and the first kana in a two-kana phrase, whereas Korean prefers a low tone for mono Hangeul and the first Hangeul in a two-Hangeul phrase. With respect to the second kana/Hangeul, it tends to begin with a high pitch, as suggested by the frequent use of a falling tone for the second kana/Hangeul.

¹³ In Modern Mandarin Chinese, Tone 1 is a high level tone, marked as 55 and Tone 3 is a contour tone that is 214. It is not clear when Tone 3 becomes a contour like 214, which is not a common phenomenon among Chinese dialects. In the 15th century, Tone 3 might not be a contour type like 214. A more reliable scenario is that Tone 1 is a high level tone, Tone 3 is a rising tone, Tone 3 is a low level tone and Tone 4 is a falling tone.

Further studies are still needed and can be done by including more historical sources from the neighborhood. This current study has probed into only two languages, Japanese and Korean, yet it would be helpful to include 琉球館譯語 *Liúqiú kuǎn yìyǔ* ‘A Wordlist of Chinese-Okinawan Phrases’, which is also compiled in the 15th century. Besides, to gain a more general picture of Chinese phonology, prosodic system in particular, it is definitely more reliable to compare 日本館譯語 *Riběn kuǎn yìyǔ* ‘A Wordlist of Chinese-Japanese Phrases’, 朝鮮館譯語 *Cháoxiān kuǎn yìyǔ* ‘A Wordlist of Chinese-Korean Phrases’ and 琉球館譯語 *Liúqiú kuǎn yìyǔ* ‘A Wordlist of Chinese-Okinawan Phrases’.

References

- 葉寶奎 [Bao-kui Ye]. 2001. 明清官話音系 [Phonology of Ming and Qing Mandarin Chinese]. Xiamen University Press, Xiamen.
- 林慶勳 [Ching-hsiun Lin]. 2009. 寄語集的華語詞彙探討——以《日本館譯語》與《琉球館譯語》比較為對象 [Chinese Vocabulary during the Period of Ming-Study Based on the "Ji-yu" in Chinese-Japanese and Chinese-Ryukyu Dictionaries]. 國立台灣師範大學國文學報 [Bulletin of Chinese, National Taiwan Normal University] 46: 95-128.
- Chong, Yon-chan. 1976. *Kwuke Sengcho e kwanhan yenku* [Study on the Tone in Korean]. Ilchwokak, Seoul.
- 丁峰 [Feng Ding]. 2008. 日漢琉漢對音與明清關話對音研究 [A Comparative Study of Japanese-Chinese, Ryukyuan-Chinese correspondences and Ming-Qing Mandarin Chinese]. Zhonghua Books, Beijing.
- Kang, Shin-hang. 1995. *Cheungpwo Chwoswonkwon eke Yenku* [A Study of Chwoswonkwon eke]. Sungkyunkwan University Press, Seoul.
- Lee, Ki-moon. 1990. *Kwuke Eumwunsa Yonku* [A Study of the History of Korean Phonology]. Tap Press, Seoul.
- Lee, Ki-moon and Robert Ramsey. 2011. *A History of*

the Korean Language. Cambridge University Press, Cambridge.

王茂林 [Mao-ling Wang]. 2011. 漢語自然話語韻律模式研究 [A Study of Chinese Prosody in Spontaneous Speech]. Jinan University Press, Guangzhou, China.

Okumura, Mitsuo. 1995. *Nihongo Akusentoshi Kenkyu* [A Study of the History of Japanese Accent]. Kazamashobo, Tokyo.

丁邦新 [Pang-hsin Ding]. 2008. 國語中雙音節並列語兩成分間的聲調關係 [The relation of the two components in Mandarin Chinese disyllabic phrases], in 中國語言學論文集 [A Collection of Chinese Linguistics]. Zhonghua Books, Beijing.

Sohn, Ho-min. 2001. *The Korean Language*. Cambridge University Press, Cambridge.