

## Diversity of Pitch Accent Systems in Koshikijima Japanese

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**Abstract:** This article describes the diversity of pitch accent systems found in Koshikijima Japanese in comparison with those of Kagoshima and Tokyo Japanese. Koshikijima Japanese is a highly endangered dialect spoken on the Koshikijima Islands in the south of Japan. While sharing many phonological features with Kagoshima and Nagasaki Japanese, this dialect is strikingly different from the sister dialects in several respects. Unlike Kagoshima Japanese, for example, Koshikijima Japanese is basically a mora-counting language where the number of moras, and not syllables, is counted to compute the position of word-level phonological prominence. Unlike Kagoshima and Nagasaki, moreover, most of Koshikijima's systems permit more than one High tone in relatively long words, apparently violating the principle of culminativity. Furthermore, Koshikijima Japanese displays a high degree of regional variations, thus developing several pitch accent systems that are different from each other in several respects such as culminativity, mora-syllable interactions, the interactions between the two High tones, and the High tone deletion phenomenon at the post-lexical level.\*

**Key words:** Koshikijima Japanese, Kagoshima Japanese, pitch accent, syllable, mora

### 1. Introduction

#### 1.1. Koshikijima Japanese

Koshikijima Japanese, henceforth 'KJ' in this paper, is spoken on the Koshikijima Islands in the south of Japan, about 40 km to the west of the mainland of Kagoshima, Kyushu, or about 100 km to the south of Nagasaki (see Map 1). The name 'Koshikijima' literally means the island of *koshiki* 'steaming basket'.<sup>1</sup> While this implies that it is one island, it is in fact composed of three small islands—*kami* (north), *naka* (central) and *shimo* (south)—each containing one to seven small villages each with 50 to 1,200 inhabitants (see Map 2). Koshikijima as a whole

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\* I would like to thank the informants of Koshikijima Japanese for providing valuable data and two anonymous reviewers of the journal for their invaluable comments. The work reported in this article was supported by the JSPS KAKENHI grants (Grant no. 25580098 and 26244022) and the NINJAL collaborative research projects ('Phonological characteristics of the Japanese lexicon' and 'Cross-linguistic studies of Japanese prosody and grammar').

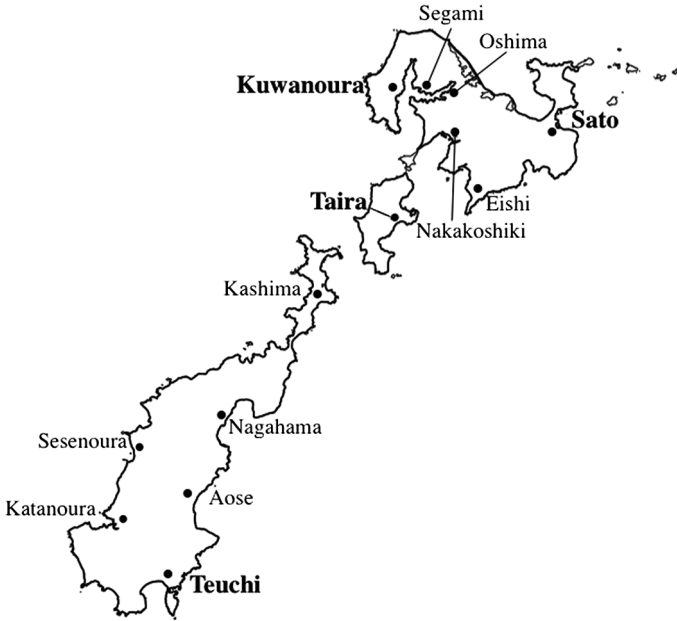
<sup>1</sup> The name of the island has two variants, *Koshikijima* (with *rendaku* voicing) and *Koshiki-shima*. This article adopts the former variant, which has a voiced consonant at the beginning of the second element.

extends 38 km from north to south and 10 km from east to west in the East China Sea.



Map 1

## Koshikijima Islands



Map 2

Separated by the sea from the mainland, Koshikijima has developed a unique prosodic system—or, better yet, prosodic systems, if we focus on regional differences within the language. As a whole, it shows many interesting features that are not found in its sister dialects such as Kagoshima and Nagasaki Japanese or in other dialects including standard Tokyo Japanese. This prompts us to call the Koshikijima Islands a ‘Galapagos of Japan’. Moreover, KJ displays considerable differences in prosodic organization among the villages since they were separated from each other by mountains or the sea. In fact, the inhabitants of the Islands mainly used small boats to travel from one village to another until they were connected by road quite recently.

The population of the Islands was about 21,000 in 1937 (Kamimura 1941), which may have increased a little bit at some point after the Second World War. However, it is currently about 5,000 partly because almost all young people have left the Islands at the age of fifteen to receive higher education on the mainland: there was and still is no senior high school on the Islands. Very few of them return to their home island due to the lack of proper work there. On the other hand, the population remains 5,000 or so because many people from the mainland began to live there for the purpose of marriage and also for public work in a military base and other places. The estimated number of native speakers of KJ is about 3,000 most of whom are over 60 years old now. Since there is virtually no public movement to revive the traditional language, KJ is indeed at the risk of extinction in the next few decades.

## 1.2. Kamimura (1937, 1941)

Not surprisingly, there are not many linguistic descriptions of KJ in the literature.<sup>2</sup> For prosody, however, Takaji Kamimura left valuable records about how basic words were pronounced on the Islands on the basis of his own fieldwork in 1937 (Kamimura 1937, 1941). His eighty-year-old descriptions are far from complete or comprehensive in our current standards, but are detailed enough for us to understand and reconstruct the basic prosodic structure of KJ eighty years ago as well as the changes that have taken place over the years. Born in 1908 and brought up in Nakakoshiki in what was formerly Kamikoshiki Village in the north island, Kamimura himself was a native speaker of the language. It is therefore safe to assume that his descriptions are primarily based on his own pronunciations and the prosodic system in his native village at that time although he claims that they cover most major villages/dialects on the Islands.<sup>3</sup> We will reconstruct his system in the course of discussion in this paper to better understand the systems that are found on the Islands today as well as the differences they exhibit among themselves.

<sup>2</sup> See Kubozono (2015b) and the references cited therein for the grammar of this language.

<sup>3</sup> Kamimura (1941) says that he did fieldwork in ten villages, i.e. Sato, Nakakoshiki, Eishi, Oshima, and Segami on the north island, Taira on the central island, and Imuta (Kashima), Nagahama, Aose, and Teuchi on the south island.

The current study is primarily based on the data collected from the original fieldwork on the Islands which the author started on his own in 2005 and has continued in collaboration with other phonologists since 2006.<sup>4,5</sup> This collaborative work has produced an accent database that is available to the public now (Kubozono 2016). This online database provides the sounds of basic words and their phrasal expressions as produced by sixteen native speakers representing eight villages on the Islands (two speakers per village).

### 1.3. Goals and organization of this article

The purpose of this article is to present a basic description of the current prosodic systems of KJ and their diversity. They are compared with the systems of its sister dialects—Kagoshima and Nagasaki Japanese—as well as the system of standard Tokyo Japanese, wherever necessary.<sup>6</sup> To achieve this goal, the paper is organized as follows. In the next section (section 2), KJ is compared with Kagoshima Japanese with main focus on the similarities and differences that they exhibit with respect to word accent systems. KJ is similar to its sister dialect in many respects but is crucially different from it in other respects. This will be followed by a discussion of inter-language differences within KJ, or the differences that the villages display in the organization of prosodic systems (section 3). The section will include the discussions of how word-level prominences are computed, how they are modified in sentence-level phonology, and how contour tones are avoided. The final section (section 4) summarizes the main points and some questions that remain for future work.

## 2. Koshikijima versus Kagoshima Japanese

### 2.1. Similarities between Koshikijima and Kagoshima Japanese

KJ as a whole resembles its sister language, Kagoshima Japanese, in many crucial ways. This section describes four major similarities regarding (i) the number of accent patterns, (ii) the direction in which the word-level prominence is computed, (iii) the left-dominant nature of the compound accent/tone rule, and (iv) the domain where the accent patterns are defined.

#### 2.1.1. Two-pattern system

The first feature that Koshikijima and Kagoshima Japanese have in common concerns the number of distinctive accent patterns permitted in the system. Unlike Tokyo and Kyoto/Osaka Japanese, where the number of distinctive accent patterns increases in proportion to the phonological length of the word, Koshikijima and

<sup>4</sup> The collaborators are Nobuko Kibe, Tomoyuki Kubo, Akiko Matsumori, Tetsuo Nitta, and Zendo Uwano.

<sup>5</sup> This article is based on the data from multiple speakers, at least two speakers in each village, aged between forty five and eighty two at the time of the recordings.

<sup>6</sup> See Uwano (1999, 2012a) and Kubozono (2010, 2012a, 2015a), among others, for the diversity of pitch accent systems in Japanese.

Kagoshima Japanese permit only two accent patterns or classes regardless of the length of the word (see Hirayama 1951: 9, Haraguchi 1977: 195, Shibatani 1990: 182, Kibe 2000: 1, and Kubozono 2004, 2006b, 2007, 2010, 2011a for Kagoshima Japanese, and Kamimura 1937, 1941 and Kubozono 2010, 2012b, c for KJ). In Uwano's (1999) classification, the Tokyo-type system is labeled as a 'multiple-pattern system', whereas the systems of Koshikijima and Kagoshima are characterized as 'two-pattern systems,' which is a subtype of 'N-pattern systems'.

The two patterns in Koshikijima and Kagoshima Japanese are traditionally called Type A and Type B, respectively (Hirayama 1951: 11).<sup>7</sup> In both languages, Type A attracts a H(igh) tone on the penultimate syllable/mora, whereas Type B involves an H tone on the final syllable/mora—we will come back to the syllable/mora distinction shortly below (section 2.2). This is illustrated in (1), where KJ is represented by the Teuchi dialect, spoken at the southern edge of the southern island. In (1) and the rest of this article, high-pitched portions are shown by capital letters, while syllable boundaries are denoted by dots.<sup>8</sup>

(1)

Accent Type	Koshikijima-Teuchi	Kagoshima	gloss
Type A	A.me	A.me	candy
	i.NA.ka	i.NA.ka	countryside
	ka.TA.ti	ka.TA.ti	shape
	KA.ma.BO.ko	ka.ma.BO.ko	boiled fish paste
Type B	a.ME	a.ME	rain
	I.no.TI	i.no.TI	life
	KO.ko.RO	ko.ko.RO	heart
	A.SA.ga.O	a.sa.ga.O	morning glory (flower)

Koshikijima-Teuchi Japanese involves two H tones in relatively long words, i.e. four-mora or longer Type A words as well as three-mora or longer Type B words. Namely, in addition to the H tone that corresponds to the H tone in Kagoshima Japanese, this dialect shows a second H tone at the beginning of relatively long words. As will be discussed later in the paper, this additional tone, which is called H1 in this paper, represents a secondary prominence that is phonologically less important than H2, which appears at or near the end of the word. The sole H tone

<sup>7</sup> These two accent classes in Koshikijima and Kagoshima Japanese are known to correspond to the traditional word classes based on accent in old Japanese generally known as *ruibetsu-goi* (Kindaichi 1974). In the case of bisyllabic nouns, for example, Type A corresponds to Classes 1 and 2 in the *ruibetsu-goi* list, while Type B corresponds to Classes 3-5 (Kibe 2000: 2).

<sup>8</sup> The Kunrei Romanization is used for the transcription of Japanese examples. Thus, /si/, /ti/, /tu/ and /hu/ are used for what the Hepburn Romanization would transcribe as /shi/, /chi/, /tsu/, and /fu/.

that appears in relatively short words corresponds to H2 in relatively long words with two prominences. Ignoring the secondary H tone in Koshikijima for the moment, the two dialects exhibit basically the same pitch patterns in involving an H tone in the penultimate (Type A) vs. final (Type B) positions.

### 2.1.2. Directionality

KJ is also similar to Kagoshima Japanese in computing the position of the word-level phonological prominence, or H tone, from the right edge of the word rather than from the left edge. In Type A words given in (1), for example, the H tone in Kagoshima and the primary H tone (H2) in KJ are both assigned to the second position (syllable or mora) from the end of the word. Type B words exhibit the same directionality except that they attract the H tone to their final position. In this way, phonological distances are measured from the end of the word rather from the beginning in both Koshikijima and Kagoshima Japanese.

This feature is shared by many dialects of Japanese including Tokyo Japanese. Although only distantly related to the Koshikijima/Kagoshima family, Tokyo Japanese computes the position of lexical pitch accent from the right edge of the word, as represented by the famous antepenultimate rule (McCawley 1968: 134). Thus, most, if not all, accented nouns bear an accent on the antepenultimate mora, i.e. the third mora from the end of the word (Kubozono 2006a, 2008, 2011a).<sup>9</sup> This is shown in (2), where the position of pitch accent—or the position of an abrupt pitch fall in phonetic terms—is denoted by an apostrophe.

- (2) Accent patterns in Tokyo Japanese  
 i'.no.ti 'life'  
 a.za'.ra.si 'earless seal'  
 o.re'n.zi 'orange'  
 ku.ri.su'.ma.su 'Christmas'

Interestingly, the right-to-left counting procedure is not shared by Nagasaki Japanese, although it is a member of the family to which Koshikijima and Kagoshima Japanese belong (Hirayama 1951, Uwano 1999). In this dialect, word-accent patterns are computed from the left edge of the word. Trimoraic or longer Type A words, for example, generally have an H tone on the second mora from the beginning of the word (Sakaguchi 2001, Matsuura 2014: 10).<sup>10</sup> This is illustrated in (3)

- (3) Accent patterns in Nagasaki Japanese (Type A)  
 i.NA.ka 'countryside'

<sup>9</sup> Tokyo Japanese has so-called 'unaccented' words as another productive pitch pattern. This pattern is so called because it involves no abrupt pitch fall, which is the phonetic correlate of lexical pitch accent in this language: e.g. /a.ME/ 'candy' and /i.NA.KA/.

<sup>10</sup> Type B words, on the other hand, are pronounced with a rather flat pitch from the beginning of the word to the end. It is difficult to tell whether this pattern is computed from the left or right edge of the word.

ka.MA.bo.ko ‘boiled fish paste’  
 o.REn.zi ‘orange’  
 paA.tii ‘party’  
 koN.saa.to ‘concert’

### 2.1.3. Left-dominant compound accent rule

A third prosodic feature that KJ shares with Kagoshima Japanese concerns the compound accent/tone rule responsible for the accentuation of compounds such as compound nouns, verbs, and adjectives. Japanese dialects fall into two groups in this respect: those that have a left-dominant accent rule and those with a right-dominant one. The former type refers to the accentual property of the initial member and preserves this property in the compound. The latter, on the other hand, refers to the phonological property of the final member and attempts to preserve the lexical accent of this member in compounds. The family to which Koshikijima, Kagoshima, and Nagasaki Japanese belong has the left-dominant rule, whereas standard Tokyo Japanese has the right-dominant one (Uwano 1997, Hayata 1999: 36–41).

The left-dominant compound rule is illustrated in (4) and (5), where KJ-Teuchi and Kagoshima patterns are given: (A) and (B) stand for Type A and Type B words, respectively. In both dialects, compounds take Type A pattern if their initial member is a Type A morpheme, whereas Type B compounds are derived from a Type B initial member. Again, the two dialects yield the same patterns if one focuses on the position of the H tone at/near the end of the words.<sup>11</sup>

- (4) Compound accent rule in KJ
- a. NA.tu (A) + KA.ta (A) → NA.tu-GA.ta (A) ‘summer type’  
 NA.tu (A) + YA.su.MI (B) → NA.TU-ya.SU.mi (A) ‘summer holiday’
  - b. ha.RU (B) + KA.ta (A) → HA.RU-ga.TA (B) ‘spring type’  
 ha.RU (B) + YA.su.MI (B) → HA.RU-YA.su.MI (B) ‘spring holiday’
- (5) Compound accent rule in Kagoshima Japanese
- a. NA.tu (A) + KA.ta (A) → na.tu-GA.ta (A) ‘summer type’  
 NA.tu (A) + ya.su.MI (B) → na.tu-ya.SU.mi (A) ‘summer holiday’
  - b. ha.RU (B) + KA.ta (A) → ha.ru-ga.TA (B) ‘spring type’  
 ha.RU (B) + ya.su.MI (B) → ha.ru-ya.su.MI (B) ‘spring holiday’

The left-dominant compound rule in (4)–(5) contrasts with the right-dominant nature of the compound rule in Tokyo Japanese. The latter rule yields two different accent patterns—accented and unaccented ones—depending on the lexical nature of the final members. Thus, compound nouns in (6a) are accented compounds with a compound accent on the second member, whereas those in (6b) take the unaccented pattern since their final member, i.e. /ka.ta/ ‘type’, serves as a

<sup>11</sup>/ka.ta/ ‘style’ undergoes *rendaku*, or sequential voicing, when it appears in non-initial positions of compounds.

deaccenting morpheme in this dialect, or the type of morpheme that yields unaccented compounds if they appear as their final member (McCawley 1968: 158). In either case, the same compound accent pattern emerges if the final member is identical, with the initial members playing little or no role in compound accentuation.<sup>12</sup> In (6), the surface pitch patterns in terms of high and low pitches are given in the parentheses for the sake of comparison with KJ and Kagoshima Japanese in (4)–(5).

- (6) Compound accent rule in Tokyo Japanese
- a. Accented compounds
    - na.tu' + ya.su.mi' → na.tu-ya'.su.mi (na.TU-YA.su.mi)
    - ha'.ru + ya.su.mi' → ha.ru-ya'.su.mi (ha.RU-YA.su.mi)
  - b. Unaccented compounds
    - na.tu' + ka.ta' → na.tu-gata 'summer type' (na.TU-GA.TA)
    - ha'.ru + ka.ta' → ha.ru-ga.ta 'spring type' (ha.RU-GA.TA)

#### 2.1.4. Domain: *bunsetsu* vs. word

KJ and Kagoshima Japanese are similar to each other and different from Tokyo Japanese with respect to the domain where the word accent patterns are defined. In fact, Japanese dialects fall into two groups in this respect, those that assign word accent in the domain of the word and those in which word accent patterns are defined within a larger domain known as *bunsetsu*, or the basic syntactic phrase consisting of a content word with one or more grammatical particles. The first group includes Tokyo and Kyoto/Osaka Japanese, while the latter includes the dialect family to which Koshikijima and its sister dialects belong (see Uwano 2012b for more details).

In Tokyo, the phonological prominence known as 'pitch accent' is determined for each word at the lexical level as opposed to the post-lexical level,<sup>13</sup> and it does not generally change its position whether the word is pronounced in isolation or with grammatical particles such as the nominative marker /ga/ or the accusative marker /o/.

- (7) Accent patterns in Tokyo Japanese
- a. i'noti 'life'
  - b. i'noti-ga 'life-nominative'
  - c. i'noti-kara 'from life'
  - d. i'noti-kara-mo 'from life, too'

<sup>12</sup>Tokyo Japanese has several accent rules that exceptionally refer to the phonological property of the leftmost element in compounds. These rules are not general rules but those that account for the accentuation of particular types of compounds like *kin-taroo* 'Gold-Taro' and *momo'-taroo* 'Peach-Taro' (Kubozono 1999, forthcoming).

<sup>13</sup>This does not mean that the position of pitch accent is lexically given. The accentuation of many words including loanwords and compound words is largely rule-governed, while words showing some marked accent patterns must be lexically specified for their accentuation (Kubozono 2006a, 2008).



In KJ and Kagoshima Japanese, on the other hand, the position of the prominence—H tone in tonal descriptions or pitch accent in accentual descriptions—changes depending on whether the word is followed by particles and how long they are. In (8) and (9), for example, the H tone apparently moves rightwards as the entire phrase becomes longer. However, its position is invariable if one looks at the entire phrase as the domain of H tone assignment in these languages. In the case of the *inoti* phrases in (8)–(9), the H tone is invariably realized on the final mora/syllable in the *bunsetsu* domain. The same is true of Type A words, which attract an H tone on the penultimate mora/syllable in the same domain: e.g. /ka.TA.ti/ ‘shape’, /KA.ta.TI-ga/ ‘shape-nominative’ (KJ-Teuchi); /ka.TA.ti/ ‘shape’, /ka.ta.TI-ga/ ‘shape-nominative’ (Kagoshima).

- (8) Apparent H tone shift in KJ-Teuchi
- a. I.no.TI ‘life’
  - b. I.NO.ti-GA ‘life-nominative’
  - c. I.NO.TI-ka.RA ‘from life’
  - d. I.NO.TI-KA.ra-MO ‘from life, too’
- (9) Apparent H tone shift in Kagoshima Japanese
- a. i.no.TI ‘life’
  - b. i.no.ti-GA ‘life-nominative’
  - c. i.no.ti-ka.RA ‘from life’
  - d. i.no.ti-ka.ra-MO ‘from life, too’

The difference between the Tokyo-type system in (7) and the KJ-type system in (8)–(9) can be explained in such a way that the former system assigns pitch accent within the word per se, while the latter assigns pitch accent or H tone within the larger domain of the *bunsetsu*. In other words, grammatical particles are simply attached to the content word after accent assignment has been made in the former system,<sup>14</sup> while they participate in pitch accent assignment in the latter system.

## 2.2. Differences between Koshikijima and Kagoshima Japanese

While KJ shares many basic prosodic features with Kagoshima Japanese, it is different from the sister dialect in two critical respects. First, KJ is basically a mora-counting language, whereas Kagoshima Japanese is a syllable-counting one. For example, Type A words attract an H tone on the penultimate *mora* in the former system, but on the penultimate *syllable* in the latter. Likewise, Type B words are high-toned on the final *mora* in the former, but on the final *syllable* in the latter. This difference can be seen from the following examples.

<sup>14</sup>In Tokyo Japanese, some grammatical particles exceptionally affect word accent patterns, such as the genitive *no*, which deletes the accent on the final syllable of its preceding noun (Akinaga 1985: 85, Poser 1984: 117–120).

## (10) Mora-counting vs. syllable-counting systems

	KJ-Teuchi (mora-counting)	Kagoshima (syllable-counting)	gloss
Type A	ba.REe	BA.ree	volleyball
	zi.KAn	ZI.kan	time
	KE.da.MO.no	ke.da.MO.no	wild animal
	KE.da.MOn	ke.DA.mon	wild animal (colloquial)
Type B	MI.kaN	mi.KAN	orange
	iN	IN	dog
	NI.WA.to.RI	ni.wa.to.RI	chicken
	NI.WA.toI	ni.wa.TOI	chicken (colloquial)

A second, and more crucial, difference between the two systems concerns ‘culminativity’ (Hyman 2006).

## (11) Each lexical word has at most one syllable marked for the highest degree of metrical prominence.

Details put aside, Kagoshima Japanese permits only one H tone per word, which is linked to a certain syllable in the *bunsetsu* domain. On the other hand, most KJ dialects allow two H tones in three-mora or longer words (see section 3.1 for an exceptional KJ dialect): the H tone that appears at or near the end of the word, or H2, corresponds to the H tone that appears in Kagoshima Japanese. This can be seen from the examples in (12) below as well as those in (1) above, both of which come from the KJ-Teuchi dialect. As Kubozono (2012b) shows, the two H tones in this dialect are both lexical (as opposed to phrasal or post-lexical) in that the first H tone (H1) as well as the second one (H2) serves to realize the lexical contrast between Type A and Type B in connected speech (see section 3.5 below for a detailed discussion).

## (12) KJ-Teuchi (double H tone) vs. Kagoshima (single H tone)

	KJ-Teuchi (double H tone)	Kagoshima (single H tone)	Gloss
Type A	O.na.GO-ga	o.na.GO-ga	woman-nominative
	NA.TU-ya.SU.mi	na.tu-ya.SU.mi	summer holiday
Type B	O.TO.ko-GA	o.to.ko-GA	man-nominative
	HA.RU-YA.su.MI	ha.ru-ya.su.MI	spring holiday

In the KJ-Teuchi dialect, H2 is realized on one particular mora of the word/ *bunsetsu*, while H1 can spread over more than one mora. These two H tones are correlated with each other in such a way that they are usually separated by one low-toned syllable. This can be seen from the various phonological forms of the Type A word /ka.za.ri.mo.no/ ‘ornament’ in (13): (13a) represents a careful pro-

nunciation, while (13b–d) are its casual variants. The same rule is used in Type B words, too, which differ from Type A words in lacking the final low-toned mora.

- (13) H1 and H2 in KJ-Teuchi
- a. KA.ZA.ri.MO.no
  - b. KA.zai.MO.no, \*KA.ZAi.MO.no
  - c. KA.ZA.ri.MOn
  - d. KA.zai.MOn, \*KA.ZAi.MOn

Two points are worthy of special attention here. First, the two H tones are separated by one low-toned *syllable*, not by a low-toned *mora*. This can be attributed to a constraint prohibiting falling contour tones in H1 such as /ZAi/ although this constraint does not work with respect to H2 as can be seen in (13c, d) (see section 3.4.3 for a full discussion). As a consequence of this, H1 is apparently linked on a syllabic rather than moraic basis and is realized on the *syllable* or stretch of *syllables* in word-initial position. While this is not true of all KJ dialects, as will be discussed in section 3.2 below, the syllable's role in the assignment of H1 contrasts with the mora's role in the assignment of H2 within the same dialect. In other words, both phonological units are indispensable for the description of one and the same word.

Another noteworthy point about the two H tones in the KJ-Teuchi system is that H2 is phonologically primary while H1 is secondary both in Type A and B words. This is not simply because H2 corresponds to the sole H tone in the sister dialect of Kagoshima, as shown in (1) and (12) above. More crucially, the domain of H1 is always dependent on the position of H2 in this system. This can be seen from the examples in (13) above, where high-toned portions in the word-initial position vary in size/length depending on the type of the following syllable. The same point can be seen more clearly in (14), where the domain of H1 becomes larger as the phrase becomes longer. In all these cases, the position of H2 is invariable, i.e. fixed on the penultimate mora in Type A and on the final mora in Type B, while the domain of H1 is variable and quite redundant for tonal distinctions. This suggests that H2 is phonologically dominant over H1. We will see additional evidence for this in section 3.3 below.

- (14) Correlation between H1 and H2 in KJ-Teuchi
- a. NA.TU-ya.SU.mi 'summer holiday'  
 NA.TU-YA.su.MI-ga 'summer holiday-nominative'  
 NA.TU-YA.SU.mi-KA.ra 'from the summer holiday'  
 NA.TU-YA.SU.MI-ka.RA-mo 'also from the summer holiday'
  - b. HA.RU-YA.su.MI 'spring holiday'  
 HA.RU-YA.SU.mi-GA 'spring holiday-nominative'  
 HA.RU-YA.SU.MI-ka.RA 'from the spring holiday'  
 HA.RU-YA.SU.MI-KA.ra-MO 'also from the spring holiday'

### 3. Regional variations in Koshikijima Japanese

Given the differences between KJ and Kagoshima Japanese in section 2.2, one might wonder why and how these differences emerged. For instance, the difference between the mora-counting system of KJ and the syllable-counting Kagoshima system is impressive and raises the question of how the mora-counting system could have developed into the syllable-counting one (or vice versa) in the history of the dialects. One might also wonder how the single H tone system in Kagoshima developed into the double H tone system of KJ (or vice versa). These differences are quite astonishing especially given their crucial similarities discussed in section 2.1. They may become easier to understand if one considers the striking variations within KJ. This section analyzes regional differences with main focus on three JK dialects, Teuchi, Taira and Kuwanoura, calling them KJ-Teuchi, KJ-Taira and KJ-Kuwanoura, respectively, in what follows.<sup>15</sup> These three dialects have been chosen here because KJ-Kuwanoura and KJ-Teuchi look most and least similar to the old KJ system that Kamimura (1937, 1941) described, respectively, while KJ-Taira has a prosodic system quite distinct from those of all other KJ dialects.

#### 3.1. Culminativity

As mentioned in section 2.2 above, KJ-Teuchi and other KJ dialects permit two H tones in three-mora or longer words. However, there is one exception to this, which is KJ-Taira. Among many KJ dialects, KJ-Taira permits only one H tone per word, irrespective of the length of the word. In this respect, KJ-Taira is similar to Kagoshima and is unique among KJ dialects. This difference, which is illustrated in (15), was already noted by Kamimura (1937, 1941), which means that KJ-Taira was already distinct from all other KJ dialects back in the 1930s.<sup>16</sup>

#### (15) Double H vs. single H tone systems in KJ

Accent Type	Kamimura's old system (Double H tone)	KJ-Teuchi (Double H tone)	KJ-Taira (Single H tone)	K a g o s h i m a (Single H tone)	gloss
Type A	o.NA.go	o.NA.go	o.NA.go	o.NA.go	woman
	KA.ma.BO.ko	KA.ma.BO.ko	ka.ma.BO.ko	ka.ma.BO.ko	boiled fish paste
	na.TU.ya.SU.mi	NA.TU.ya.SU.mi	na.tu.ya.SU.mi	na.tu.ya.SU.mi	summer holiday
	ni.GLi.ME.si	NI.gii.ME.si	ni.gii.ME.si	ni.gii.ME.si	rice ball
Type B	O.to.KO	O.to.KO	o.to.KO	o.to.KO	man
	a.SA.ga.O	A.SA.ga.O	a.sa.ga.O	a.sa.ga.O	morning glory
	ha.RU.ya.su.MI	HA.RU.YA.su.MI	ha.ru.ya.su.MI	ha.ru.ya.su.MI	spring holiday

<sup>15</sup> Of these dialects, KJ-Kuwanoura is a highly endangered dialect with only fifty native speakers. KJ-Taira and KJ-Teuchi have about 200 and 600 native speakers, respectively.

<sup>16</sup> KJ-Taira is not entirely identical to Kagoshima Japanese since, as discussed in section 2.2, it is a mora-counting system like all other KJ dialects: e.g. /ba.REe/ (KJ-Taira) vs. /BA.ree/ (Kagoshima) 'volleyball' (see section 3.4.1 for more details).

It remains a mystery why KJ-Taira was different from all the other KJ dialects eighty years ago and remains so even today. Geographically, Taira is the only village on the small central island and has thus been separated from all the other KJ villages by the sea (see Map 2). However, all the other dialects have also been geographically isolated from each other, although mainly by mountains.

Historically, the following scenario may be postulated. First, the ancestor of KJ dialects probably had only one H tone underlyingly just like their sister dialects of Kagoshima and Nagasaki Japanese today. This single H tone system has remained intact in and only in KJ-Taira: namely, this dialect keeps the old feature of the proto-KJ system in this respect. Second, this old single H tone system then developed in other villages of the Islands into a system that permits two H tones in relatively long words: the H tone at the beginning of the word probably emerged in the system as a kind of boundary tone signaling the beginning of the word or phrase.

### 3.2. Interactions between the two H tones

As mentioned above, all KJ dialects except the KJ-Taira dialect permit two H tones per word. These dialects generally exhibit two H tones in three-mora or longer words in Type B and in four-mora and longer words in Type A. However, they are not homogeneous but exhibit regional differences. They actually fall into two groups depending on the degree to which the two H tones interact with each other. One group is represented by KJ-Teuchi illustrated in (1) and (14). In this system, H1 can spread over several word-initial syllables in four-mora or longer words/phrases and is always dependent on H2 in that the domain of H1 is determined by the position of H2. As shown with the Type A word ‘Washington’ in (16), the two H tones are intervened by one and only one syllable.<sup>17</sup>

- (16) H1-H2 interactions in KJ-Teuchi
- a. WA.sin.TOn ‘Washington’
  - b. WA.sin.TOn-ga ‘Washington-nominative’
  - c. WA.SIN.ton-KA.ra ‘from Washington’
  - d. WA.SIN.TON-ka.RA-mo ‘from Washington, too’

Many KJ dialects including KJ-Sato, KJ-Nakakoshiki, and KJ-Kashima exhibit more or less the same feature as KJ-Teuchi although the two H tones may occasionally be separated by more than one syllable.<sup>18</sup>

While many KJ dialects display the same pattern as KJ-Teuchi, KJ-Kuwanoura exhibits an entirely different pattern with respect to the interaction between the two H tones. In this dialect, H1 is basically restricted to the word-initial two moras: it cannot spread over to the third mora of the phrase unless the second and

<sup>17</sup>In (16b), H2 does not fall on the penultimate mora but shifts one mora to the left because the penultimate mora is the non-head mora of a heavy syllable. This H tone shift will be discussed in detail in section 3.4.1 below.

<sup>18</sup>This inter-dialectal difference must be examined in more detail in the future.

third moras form a heavy syllable.<sup>19</sup> In this respect, this system is most similar to the old system that Kamimura (1937, 1941) described. (17) compares the two systems with each other as well as with that of KJ-Teuchi.

(17) H1-H2 interactions in KJ dialects

Accent Type	Kamimura (1937)	KJ-Kuwanoura	KJ-Teuchi	gloss
Type A	o.NA.go	O.NA.go	o.NA.go	woman
	KA.ma.BO.ko	KA.MA.BO.ko	KA.ma.BO.ko	boiled fish paste
	na.TU.ya.SU.mi	NA.TU.ya.SU.mi	NA.TU.ya.SU.mi	summer holiday
	ni.GI.i.ME.si	NI.GII.ME.si	NI.gii.ME.si	rice ball
	ka.ZAi.MOn	KA.ZAI.MOn	KA.zai.MOn	ornament
	ka.ZA.ri.MOn	KA.ZA.ri.MOn	KA.ZA.ri.MOn	ornament
Type B	O.to.KO	O.TO.KO	O.to.KO	man
	a.SA.ga.O	A.SA.ga.O	A.SA.ga.O	morning glory
	a.NI.saN	A.NI.saN	A.NI.saN	elder brother
	seN.seI	SEN.seI	SEN.seI	teacher
	ha.RU.ya.su.MI	HA.RU.ya.su.MI	HA.RU.YA.su.MI	spring holiday

While KJ-Kuwanoura looks quite similar to Kamimura's old system, they are actually different from each other in three crucial respects. First, H1 may be realized over two moras in the former, especially when the word-initial two moras form a heavy syllable, e.g. /SEN.seI/, while it is restricted to a single mora, usually the second one, in the latter system, e.g. /seN.seI/ (section 3.4.2).<sup>20</sup> Second, the two H tones may clash in the former, but not in the latter: /KA.MA.BO.ko/ vs. /KA.ma.BO.ko/ 'boiled fish paste', /O.TO.KO/ vs. /O.to.KO/ 'man'. Third, H1 exceptionally spreads to the third mora in the former system if the second and third moras form a heavy syllable: /NI.GII.ME.si/ vs. /ni.GIi.ME.si/ 'rice ball', /NI.GII.me.SI-ga/ vs. /ni.GIi.me.SI-ga/ 'rice ball (nominative)'. This rightward H tone spreading is not reported in Kamimura (1941), suggesting that it is a rather new innovation in the history of KJ-Kuwanoura (see section 3.4.3 below for more details).

In Kamimura's old system, H1 and H2 interacted with each other partially: namely, H1 is assigned to the second mora in principle independently of H2, but it moves to the first if it would clash with H2. Assuming that both KJ-Kuwanoura's and KJ-Teuchi's contemporary systems developed from Kamimura's old system, a

<sup>19</sup>The initial mora may be optionally low-toned if it does not form a heavy syllable with the second mora.

<sup>20</sup>Kamimura (1941) noted one exceptional dialect in his description. He mentions that H1 occasionally moves to the third mora in five-mora or longer words in KJ-Eishi: e.g. /sa.ku.RA.no-HA.na/ 'cherry blossom' (Type A), /i.ro-En.pi.TU/ 'color pencil' (Type B) in KJ-Eishi vs. /sa.KU.ra.no-HA.na/, /i.RO-en.pi.TU/ in other KJ dialects. It is not clear whether this rightward movement of H1 in KJ-Eishi eighty years ago has anything to do with the process of H1 spreading that takes place in present-day KJ-Teuchi and other KJ dialects.





position of H2 has been determined. Note that in this system, H1 is not just a boundary tone signaling the beginning of a new word or phrase, as it was in the old KJ system that Kamimura (1937, 1941) described. This tone as well as H2 can potentially keep the two accent classes apart from each other, although it plays a secondary, redundant role at the lexical level. This point becomes clearer when the deletion of H2 at the post-lexical level is considered shortly (section 3.5).

While H1 is totally dependent on H2 in KJ-Teuchi, the two tones are entirely independent of each other in KJ-Kuwanoura. In this latter system, H1 is restricted basically to the initial two moras irrespective of the position of H2 no matter how long the words may be: e.g. /HA.RU-ya.su.MI/, \*/HA.RU-YA.su.MI/. The only case where H1 spreads to the third mora is when the second and third moras form one heavy syllable, as mentioned above. Moreover, the two H tones may clash with each other: /KA.MA.BO.ko/, \*/KA.ma.BO.ko/ ‘boiled fish paste’; /O.TO.KO/, \*/O.to.KO/ ‘man’. What these facts mean is that H1 is assigned from left to right rather than from right to left. Thus, the two H tones are assigned in entirely different procedures in this system.

Note in this connection that H1 plays no distinctive role in the KJ-Kuwanoura system since it is assigned independent of H2 in both Type A and Type B words: e.g. /NA.TU-ya.SU.mi/ ‘summer holiday’ vs. /HA.RU-ya.su.MI/ ‘spring holiday’. This indicates that H1 only serves as a boundary tone just as it did in Kamimura’s old system eighty years ago. Seen from a historical point of view, KJ-Kuwanoura has inherited this particular feature from Kamimura’s old system, where H1 was basically fixed to the second mora from the beginning of the word and H2 was assigned from the end of the word. In this sense, the system of KJ-Kuwanoura as well as Kamimura’s old one represents a hybrid system where the two H tones are assigned in different/opposite directions within the same word.

### 3.4. Roles of the syllable in KJ

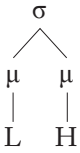
As described in section 2.2 above, KJ is basically a mora-counting language since the position of its distinctive H tone—H2 in three-mora or longer words and the sole H tone in shorter words—is computed by counting the number of *moras* from the end of the word/phrase: specifically, it is placed on the penultimate mora (Type A words) or on the final mora (Type B words). However, KJ dialects today are sensitive to the syllable, too, as evidenced by the fact that they do not freely allow contour tones, i.e. syllables involving a change in pitch level. Specifically, they generally avoid the rising contour tone in (19a), where the H tone is linked only to the non-head mora of heavy syllables. This structure should be permitted in a purely moraic system such as the one found in Nagasaki Japanese, where H tone may be linked to any mora, whether it is the head or non-head mora of a heavy syllable.<sup>22</sup>

<sup>22</sup>In Nagasaki Japanese, Type A words bear an H tone on the penultimate mora irrespective of its syllabic status: /o.NA.go/ ‘woman’, /o.REn.zi/ ‘orange’, /koN.saa.to/ ‘concert’ (Matsuura 2014).

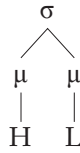


## (19) Contour tones

## a. Rising contour tone



## b. Falling contour tone

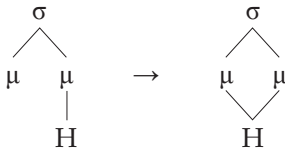


Interestingly, KJ dialects differ from each other in the extent to which these marked structures are avoided as well as how they are actually remedied. Moreover, H1 and H2 often behave differently to avoid the two marked structures in (19) within the same word in the same dialect. Despite these differences, avoidance of the contour tones in general sheds light on the role of the syllable in the KJ dialects as we will see in what follows.

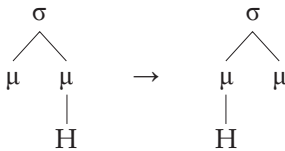
## 3.4.1. Avoidance of rising contour tone in H2

The rising contour pattern in (19a) is generally avoided across KJ dialects in assigning H2 tone (or the sole H tone in short words and the sole H tone in KJ-Taira). To avoid this marked structure, the KJ dialects exhibit two solutions, H tone spreading and H tone shift, which are schematically shown in (20) and (21), respectively.

## (20) H tone spreading



## (21) H tone shift



Of these two solutions, the rule in (20) spreads the H tone to the entire syllable. This strategy is taken only by KJ-Taira, the dialect where only one H tone—corresponding to H2 in other KJ dialects—is permitted in all words and phrases. Unlike H tone shift to be explained below, this process occurs in both accent classes, as shown in (22).

## (22) H tone spreading in KJ-Taira

## a. Type A

paN.tu → PAN.tu ‘pants’

puU.ru → PUU.ru ‘swimming pool’

- ra.I.to → RAI.to ‘light, right’  
 tyo.ko.reE.to → tyo.ko.REE.to ‘chocolate’
- b. Type B  
 iN → IN ‘dog’  
 mi.kaN → mi.KAN ‘orange’  
 sen.seI → sen.SEI

Historically, Kamimura (1941: 15) reported on this rule in his description of KJ-Taira eighty years ago although he exemplified it with Type B words only: /an.SAN/ ‘elder brother’, /ha.ma.GUI/ ‘clam’. Note that this rule does not result in tonal neutralization since Type A words are still clearly kept distinct from Type B words of the same syllable structure: e.g. /PAN.tu/ ‘pants’ (Type A) vs. /rin.GO/ ‘apple’ (Type B); /KAN/ ‘can’ (Type A) vs. /IN/ ‘dog’ (Type B); /ru.PAN/ ‘Lupin’ (Type A) vs. /mi.KAN/ ‘orange’ (Type B).

Given the examples in (22), one may suspect that this dialect is basically a syllable-counting one, just like Kagoshima Japanese illustrated in (10) above. This interpretation is compatible with the accent patterns of Type B words, which all exhibit an H tone on their final syllables, whether heavy or light. However, it does not account for some Type A patterns since the H tone readily docks on the final syllable if it is heavy. This is exemplified in (23), where the word /ke.da.MOn/ ‘wild animal’ and /sai.DAa/ ‘cider, lemonade’ clearly show the difference between KJ-Taira and Kagoshima Japanese. Both the Type A and Type B patterns in the former system can be accounted for in a principled way if and only if one assumes a mora-counting procedure and the additional H tone spreading rule illustrated in (22).

### (23) Comparison of KJ-Taira with Kagoshima Japanese

Accent type	KJ-Taira (mora counting)	Kagoshima (syllable counting)	gloss
Type A	o.NA.go	o.NA.go	woman
	ke.da.MOn	ke.DA.mon	wild animal
	sai.DAa	SAI.daa	lemonade
	o.REN.zi	o.REN.zi	orange
Type B	mi.KAN	mi.KAN	orange
	o.to.KO	o.to.KO	man

While H tone spreading is found in KJ-Taira, H tone shift in (21) is observed elsewhere in the KJ dialects including KJ-Teuchi and KJ-Kuwanoura. Interestingly, this rule differs from H tone spreading in occurring only in Type A words, thus giving rise to an asymmetry between the two accent classes. This is exemplified in (24).

- (24) H tone shift in KJ dialects (except KJ-Taira)
- a. Type A
    - paN.tu → PAn.tu ‘pants, underwear’
    - PO.paI-ga → po.PAi.-ga ‘Popeye-nominative’
  - b. Type B
    - iN → \*In ‘dog’
    - MI.kaN → \*mi.KAn ‘orange’
    - I.NA.BI.kaI → \*I.NA.bi.KAi ‘a flash of lightning’

Several points should be noted about this rule. First, the H tone shift rule is not a new rule in the history of KJ dialects as Kamimura (1941) already reported on it in his description of KJ dialects eighty years ago. Secondly, this rule is identical in nature to the accent shift observed in Tokyo Japanese and other dialects of the language.<sup>23</sup> Both in H tone shift in (24) and the accent shift in Tokyo Japanese in (25), non-head moras of heavy syllables cannot bear the highest prominence of the word on their own and shift it to the head mora of the same syllable.

- (25) Accent shift in Tokyo Japanese
- roN.don → RON.don ‘London’
  - saI.daa → SAi.daa ‘cider, lemonade’
  - paA.maa → PAa.maa ‘Palmer’

Third, H tone shift succeeds in avoiding the rising contour tone in (19a), but creates a falling contour tone in (19b) instead, suggesting that the rising contour tone is more marked than the falling contour tone. This is consistent with Hyman’s observation of African tone languages (Hyman 2007).<sup>24</sup> However, this gives rise to an interesting asymmetry between H1 and H2 with respect to (19b): the falling contour tone in (19b) is freely allowed in H2 but not in H1. As we will see in section 3.4.3 below, H1 does not tolerate this marked structure in either KJ-Kuwanoura or KJ-Teuchi. It is interesting to ask why the falling contour tone is allowed in H2, but not in H1.

One may wonder here why the H tone shift exhibits an A-B asymmetry, i.e. why Type B tolerates the marked structure in (19a). This can be attributed to a constraint against neutralization, or a loss of tonal contrast (Kubozono 2012c). If Type B words underwent H tone shift, they would end up exhibiting the same pitch pattern as Type A words: the hypothetical outputs in (24b), e.g. \*/mi.KAn/ (Type B), would be indistinguishable from their Type A counterparts, e.g. /zi.KAn/ ‘time’. This is another place where one observes a strong force to preserve a tonal contrast in KJ dialects.

Comparing KJ-Taira and other KJ dialects, it is not clear why only the former

<sup>23</sup> Because of this rule, McCawley (1968: 134, 1978: 119) characterized Tokyo Japanese as a ‘mora-counting, syllable language’, namely, a language where the mora is used as a counting unit but the syllable serves as a bearer of the accent.

<sup>24</sup> Hyman (2007: 11) notes that the rising contour tone in (19a) is more marked or ‘complex’ than its falling counterpart in (19b) in his analysis of African languages.

relies on H tone spreading in (20) rather than H tone shift in (21) to avoid the same structure in (19a). It seems difficult to attribute this to the fact that KJ-Taira is the only dialect among KJ dialects that permits only one H tone in a word: there would have been no problem if this system had chosen H tone shift as a solution to avoid (19a) and applied it to Type A words only, just like other KJ dialects. By choosing H tone spreading instead, however, KJ-Taira has successfully avoided yielding a Type A-B asymmetry and the two marked structures in (19) at the same time although it now violates the mora-based principle whereby the H tone is realized on a single mora. On the other hand, other KJ dialects respect this mora-based principle at the expense of the A-B asymmetry and the resultant falling contour tone in (19b). A more detailed analysis is required to explain this inter-dialectal difference.

### 3.4.2. Avoidance of rising contour tone in H1

According to Kamimura's (1937, 1941) observation, the rising contour tone in (19a) was permitted in word-initial position in the double H tone KJ systems in 1930s. According to his description, H1 was generally linked to the second mora, regardless of whether this mora is the non-head mora of a heavy syllable as in (26a) or the head mora as in (26b): (A) and (B) denote Type A and Type B, respectively.

- (26) Behavior of H1 in Kamimura's old system
- a. (A) zyoO.ki.SEn 'steamship'  
zyoO.ki.SEn-ga 'steamship-nominative'
  - (B) aN.saN 'elder brother'
  - b. (A) na.TU.ya.SU.mi 'summer holiday'  
ka.ZAi.MOn 'ornament'  
ka.ZAi.MOn-ga 'ornament-nominative'
  - (B) a.SA.ga.O 'morning glory (flower)'

While H1 in this old system permitted the rising contour tone in (19a), as illustrated in (26a), the same H tone does not permit this contour tone any more in present-day KJ dialects. The marked structure in question is generally avoided by H tone spreading in (20). In KJ-Kuwanoura, for example, word-initial heavy syllables are high-toned from the beginning, as in (27a), while word-initial light syllables occasionally permit a low tone as in (27b).<sup>25</sup>

- (27) Behavior of H1 in KJ-Kuwanoura
- a. (A) ZYOO.ki.SEn  
ZYOO.ki.SEn-ga

<sup>25</sup> These patterns resemble those found in Tokyo Japanese, where phrase-initial pitch rise occurs if the initial syllable is monomoraic, e.g. /yo.KO.HA.MA/ 'Yokohama', /a.ME.RI.KA/ 'America', while it is blocked if the syllable is bimoraic, e.g. /TOO.KYOO/ 'Tokyo', /KAI.DAN/ 'staircase'.

- (B) AN.saN  
 b. (A) NA.TU-ya.SU.mi (~na.TU-ya.SU.mi)  
     KA.ZAI.MOn (~ka.ZAI.MOn)  
     KA.ZAI.MOn-ga (~ka.ZAI.MOn-ga)  
 (B) A.SA.ga.O (~a.SA.ga.O)

What is very interesting about KJ-Kuwanoura is that H2 is subject to H tone *shift* to avoid the rising contour tone in (19a) in Type A words, as shown in (24a), while H1 is subject to H tone *spreading* to avoid the same marked structure as shown in (27a). This gives rise to an interesting asymmetry between H1 and H2, which use different solutions within the same word to avoid the same tonal structure: e.g. /ZYOO.ki.SEn-ga/.

Incidentally, KJ-Teuchi does not permit the rising contour in H1 just like KJ-Kuwanoura, but this should not be directly attributed to the H tone spreading in (20), but rather to the domain of the L tone intervening between the two H tones, i.e. to the fact that the two H tones are separated from each other by one low-toned *syllable*. This can be described as a step-by-step process in (28), where /ka.zai.mon-ka.ra/ ‘from the ornament’ (Type A) is used for illustration.

- (28) Derivational process in KJ-Teuchi
- |   |   |   |
|---|---|---|
| a. ka.zai.mon- <u>ka.ra</u>   | b. ka.zai. <u>mon</u> -ka.ra  | c. <u>ka.zai.mon</u> -ka.ra   |
| $\begin{array}{c}   \\ H_1 \end{array}$ $\begin{array}{c}   \\ L_1 \end{array}$ $\begin{array}{c}   \\ H_2 \end{array}$ $\begin{array}{c}   \\ L_2 \end{array}$ | $\begin{array}{c}   \\ H_1 \end{array}$ $\begin{array}{c}   \\ L_1 \end{array}$ $\begin{array}{c}   \\ H_2 \end{array}$ $\begin{array}{c}   \\ L_2 \end{array}$ | $\begin{array}{c}   \\ H_1 \end{array}$ $\begin{array}{c}   \\ L_1 \end{array}$ $\begin{array}{c}   \\ H_2 \end{array}$ $\begin{array}{c}   \\ L_2 \end{array}$ |

### 3.4.3. Avoidance of falling contour tone

Having looked at the ways the rising contour tone in (19a) is avoided in present-day KJ dialects, let us now consider how the falling contour tone in (19b) is avoided or tolerated in the same dialects. In Kamimura’s old system, this structure was permitted both in H1 and in H2 as both tones were readily associated solely with the head mora of heavy syllables. This is illustrated with Type A words in (29), where the relevant heavy syllables are underlined.

- (29) H1 and H2 in Kamimura’s old system
- a. H1  
 ni.GIi.ME.si, \*ni.GII.ME.si ‘rice ball (colloquial)’  
 ni.GIi.me.SI-ga, \*ni.GII.me.SI-ga ‘rice ball-nominative’  
 ka.ZAi.MOn, \*ka.ZAI.MOn ‘ornament’  
 ka.ZAi.MOn-ga, \*ka.ZAI.MOn-ga ‘ornament-nominative’
- b. H2  
 ka.ZAi.MOn ‘ornament’  
 KE.da.MOn ‘wild animal’

The situation is slightly different in KJ dialects today, where, interestingly, H1 and H2 behave differently from each other. As for H2, the falling contour in (19b) is still freely permitted in all KJ dialects including KJ-Teuchi, KJ-Kuwanoura, and

KJ-Taira.<sup>26</sup> This is the situation identical to (29b), which suggests that no change has occurred in this respect over the past eighty years.

H1, on the other hand, does not permit the falling contour tone any longer in any present-day KJ dialects. Interestingly enough, different strategies are employed to avoid the same structure across dialects. In KJ-Kuwanoura, it is remedied by rightward H tone spreading, as illustrated in (30), which clearly contrasts with what happens in Kamimura's old system illustrated in (29a).

- (30) H1 spreading in KJ-Kuwanoura today  
 NI.GII.ME.si, \*NI.GIi.ME.si 'rice ball (colloquial)'  
 cf. NI.GI.ri.ME.si 'rice ball (polite)'  
 NI.GII.me.SI-ga, \*NI.GIi.me.SI-ga 'rice ball-nominative'  
 cf. NI.GI.ri.me.SI-ga 'rice ball-nominative (polite)'  
 KA.ZAI.MOn, \*KA.ZAi.MOn 'ornament'  
 KA.ZAI.MOn-ga, \*KA.ZAi.MOn-ga 'ornament-nominative'  
 KA.ZAI.mon-KA.ra, \*KA.ZAi.mon-KA.ra 'from the ornament'

In KJ-Teuchi, in contrast, the same contour tone is avoided as H1 is assigned from right to left to all phonological materials before the low-toned syllable. This apparent leftward shift of H1 is illustrated in (31).

- (31) H1 in KJ-Teuchi today  
 NI.gii.ME.si, \*NI.GIi.ME.si 'rice ball (colloquial)'  
 cf. NI.GI.ri.ME.si 'rice ball (polite)'  
 NI.GII.me.SI-ga 'rice ball-nominative'  
 cf. NI.GI.RI.me.SI-ga 'rice ball-nominative (polite)'  
 KA.zai.MOn, \*KA.ZAi.MOn 'ornament'  
 KA.zai.MOn-ga, \*KA.ZAi.MOn-ga 'ornament-nominative'

In sum, both H1 and H2 tolerated the falling contour tone in (19b) in Kamimura's old system eighty years ago. These two tones behave differently in KJ dialects today with respect to the same contour tone, giving rise to an interesting H1/H2 asymmetry: the falling contour tone in (19b) is freely allowed in H2 but not in H1. It will be interesting to ask why such an asymmetry occurs at all.

#### 3.4.4. Summary

The discussion in this subsection has shown that on the whole KJ dialects are mora-based rather than syllable-based. Seen from a historical viewpoint, however, they changed from a mora-only system to a hybrid system in which both the mora and the syllable are used. On the one hand, Kamimura's old system was almost exclusively mora-based since the positions of both H1 and H2 are calculated by counting the number of moras, from the end of the word in the case of

<sup>26</sup> KJ-Taira permits only one H tone per word/phrase, which corresponds to H2 in the discussion here.

H2 and from the beginning of the word in the case of H1. The only evidence for the syllable in Kamimura's system is the H2 shift in Type A words illustrated in (24a), which occurs to avoid a rising contour tone in (19a). This pattern persists in present-day KJ systems except KJ-Taira, which employs H tone spreading instead to avoid the same marked structure.

In the course of time, the role of the syllable has expanded in KJ dialects as H1 became sensitive to the syllable, but in different ways in different dialects. In KJ-Kuwanoura, it is manifested in H1 tone spreading to avoid a rising contour tone as in (27a) and a falling contour tone as in (30). Here, the entire syllable now bears an H tone instead of showing a change in pitch level within the same syllable.

The role of the syllable has expanded in KJ-Teuchi, too, but in a different way. In this system, H1 spreads over a syllable or a stretch of syllables toward the word-initial position since H1 and H2 are separated by a low-toned syllable. This leftward H1 spreading eliminated the possibility of the marked structures in (19a) and (19b).

The basic differences among the dialects are summarized in (32), where the solutions used to avoid the relevant marked structure are given in brackets.

(32) Summary

	H1		H2	
	Rising contour	Falling contour	Rising contour	Falling contour
Kamimura (1937, 1941)	permitted	permitted	Not permitted in Type A [H tone shift]	permitted
KJ-Taira	N.A.	N.A.	Not permitted [H tone spreading]	permitted
KJ-Kuwanoura	not permitted [H tone spreading]	not permitted [H tone spreading]	Not permitted in Type A [H tone shift]	permitted
KJ-Teuchi	not permitted [H tone spreading]	not permitted [H tone shift]	Not permitted in Type A [H tone shift]	permitted

### 3.5. H2 deletion in connected speech

Looking beyond the lexical level, KJ displays intriguing tonal phenomena at the post-lexical level, too, where multiple words and *bunsetsu* are connected to form utterances. The most noticeable phenomenon is H tone deletion by which H2 is deleted in non-final positions in connected speech. Here, again, KJ dialects exhibit regional differences.

### 3.5.1. H2 deletion in KJ-Teuchi

In KJ-Teuchi and many other KJ dialects today, H2 tends to delete in non-final phrases in connected speech. This post-lexical process is observed most clearly in KJ-Teuchi, where it occurs obligatorily so that non-deletion in non-final phrases would create somewhat unnatural utterances. In this system, H2 deletion occurs both in Type A and Type B words. Some typical examples are given in (33) (Kubozono 2012b, c).

(33) H2 deletion in connected speech in KJ-Teuchi

	Sentence-final phrases	Non-final phrases	gloss
Type A	NA.TU-ya.SU.mi	NA.TU-ya.su.mi...	summer holiday
	A.ME-ma.TU.ri	A.ME-ma.tu.ri...	candy festival
Type B	HA.RU-YA.su.MI	HA.RU-YA.su.mi...	spring holiday
	A.ME-MA.tu.RI	A.ME-MA.tu.ri...	rain festival

The same deletion phenomenon is observed in most other KJ dialects, too, although to different degrees: this includes KJ-Sato, KJ-Kashima and KJ-Nakakoshiki, the last of which is the direct descendent of Kamimura's native dialect. H2 deletion in non-final positions is obligatory in KJ-Teuchi, but not always in other dialects.

Two facts are worth emphasizing here. First, this process does not take place in short words with only one H tone, e.g. /a.ME-ga/ 'candy-nominative' (Type A), /me-GA/ 'eye-nominative' (Type B), although this sole tone corresponds to H2 in longer words with two H tones.<sup>27</sup> Another noteworthy fact is that the H tone deletion process does not trigger tonal neutralization of the two accent types. The contrast between /NA.TU-ya.SU.mi/ 'summer holiday' (Type A) and /HA.RU-YA.su.MI/ 'spring holiday' (Type B), for example, is well preserved in connected speech since they can still be differentiated from each other by the domain of H1 after H2 disappears: i.e. /NA.TU-ya.su.mi.../ vs. /HA.RU-YA.su.mi.../.

Given this, H tone deletion looks peculiar since it involves the deletion of the lexically dominant H tone (H2) and the resultant promotion of the lexically redundant H tone (H1) to a distinctive one at the post-lexical level. In connected speech, H1 remains redundant in sentence-final position, but it comes to play a distinctive role elsewhere as H2 disappears. It is very interesting to find that H2 dominates H1 at the lexical level but the dominance relationship is reversed at the post-lexical level. This represents an opaque case (Kubozono 2012b).

Seen from a functional perspective, deletion of H2 in connected speech signals non-finality, or that the sentence will still continue, whereas non-deletion signals finality, or the end of the sentence. This is reminiscent of stress shift in English, which occurs to avoid stress clash in connected speech (Lieberman and Prince 1977): e.g. *Jāpanése* vs. *Jāpanese people* (see Kubozono 2012c for more details about

<sup>27</sup> Similarly, KJ-Taira does not show this phenomenon since it permits only one H tone per word.



the resemblances between H2 deletion in KJ dialects and stress shift in English).

### 3.5.2. Old system in 1937

Interestingly, Kamimura (1937, 1941) did not report H2 deletion or any analogous phenomenon in his own dialect (KJ-Nakakoshiki) or in any other KJ dialect he described. The absence of an analogous process in this system can be understood easily if seen from a functional point of view. If H2 deletion had occurred in this old system, it would have triggered neutralization of the two accent patterns since H1 was basically fixed onto the second mora and did not differentiate the two patterns in this system. This situation is illustrated in (34), where hypothetical forms are marked with asterisks.

#### (34) Kamimura's old system

	Sentence-final phrases	Non-final phrases	gloss
Type A	na.TU-ya.SU.mi	*na.TU-ya.su.mi...	summer holiday
	a.ME-ma.TU.ri	*a.ME-ma.tu.ri...	candy festival
Type B	ha.RU-ya.su.MI	*ha.RU-ya.su.mi...	spring holiday
	a.ME-ma.tu.RI	*a.ME-ma.tu.ri...	rain festival

The fact that Kamimura (1937, 1941) actually mentions no such phenomenon suggests that H2 deletion had not taken place at his time, namely, that it is a relatively new development in the history of KJ dialects. This interpretation can be supported by the fact that H2 deletion is still not obligatory in many JK dialects today, such as KJ-Sato. In these dialects, H2 may remain in non-final phrases in connected speech, where one finds variations between a monomodal pattern and a bimodal one: e.g. /NA.TU-ya.SU.mi.../ ~/NA.TU-ya.su.mi.../.

More crucial evidence for our historical analysis comes from KJ-Kuwanoura today, which is most similar to Kamimura's old system with respect to the behavior of H1. In this system, H1 is restricted basically to the initial two moras. Since the domain of H1 is restricted, this tone occurs rather independently of H2, as demonstrated in section 3.2 above. Interestingly, H2 deletion occurs in this system, too, but in an incomplete fashion; it takes place only in Type B words. In Type A words, H2 is phonetically reduced but is not deleted. This is illustrated in (35).

#### (35) H2 deletion in KJ-Kuwanoura

	Sentence-final phrases	Non-final phrases	gloss
Type A	NA.TU-ya.SU.mi	NA.TU-ya.SU.mi...	summer holiday
	A.ME-ma.TU.ri	A.ME-ma.TU.ri...	candy festival
Type B	HA.RU-ya.su.MI	HA.RU-ya.su.mi...	spring holiday
	A.ME-ma.tu.RI	A.ME-ma.tu.ri...	rain festival

In (35), the distinction between Type A and Type B is preserved in non-final phrases as well as sentence-final phrases since Type A words resist H2 deletion. In

this way, the tonal contrast is preserved although H1 is independent of H2.

In sum, the tonal distinction is well preserved in connected speech as well as in citation forms in all KJ dialects. This is arguably the utmost requirement that must be obeyed across KJ dialects. In Kamimura's old system, this requirement was fulfilled by the absence of H2 tone deletion in connected speech: H1 was basically independent of H2, and the latter remained distinctive in connected speech as well as in citation forms. In KJ-Kuwanoura today, in contrast, H1 is more independent of H2, but H2 deletion occurs. The tonal distinction is nevertheless preserved in this system, too, since H2 deletion is permitted only in one accent class. Finally, in KJ-Teuchi today, H2 deletion occurs obligatorily in both accent classes. Since H1 is entirely dependent on H2 in this system, the tonal distinction can be shown by the domain of H1 alone in connected speech.

Considering these dialectal variations, it can be assumed that the H2 deletion process is not necessarily triggered by the spreading of H1 and the subsequent correlation with H2 per se.<sup>28</sup> It was triggered by H tone clash or an analogous factor (Kubozono 2012b, c), while it was probably accelerated by the emergence of a correlation between H1 and H2. In KJ-Kuwanoura, H2 deletion was not allowed to occur in the entire system since it would give rise to a loss of tonal contrast. In KJ-Teuchi, on the other hand, it was allowed to take place in the entire system because H1 has become entirely dependent on H2 and replaced it as a distinctive tone in connected speech, at least in non-final positions.

(36) gives a summary of the three types of systems with respect to H1 spreading, H1-H2 correlation and H2 deletion in connected speech. It is worth emphasizing here again that the tonal contrast is preserved in all systems, both in citation forms and connected speech.

(36) Comparison of the KJ dialects with respect to H1-H2 correlation, H2 deletion, and tonal contrast

	H1 spreading	H1-H2 correlation	H2 deletion in connected speech	Tonal contrast in connected speech
Kamimura's old system	restricted	little correlation	did not occur (no report of the occurrence)	preserved
KJ-Kuwanoura	restricted	no correlation	occurs only in Type B	preserved
KJ-Sato	permitted rather freely	considerable correlation	occurs in both accent classes, but not obligatorily	preserved

<sup>28</sup> Kubozono (2012c) claims that the dependence of H1 on H2 was the prerequisite of H tone deletion in KJ. This claim is too strong in light of the new evidence from KJ-Kuwanoura, where H2 deletion occurs even though H1 is independent of H2. In this system, H2 deletion did not give rise to loss of tonal contrast since it occurs only in one accent class.

KJ-Teuchi	permitted freely	perfect correlation	obligatory in both accent classes	preserved
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### 3.6. Summary

To summarize the discussion so far, KJ dialects share some basic prosodic features with each other, while showing crucial differences among themselves. They exhibit three common features. First, the position of H2 is calculated by counting moras from the end of the word/phrase. Second, H2 is linked basically to the penultimate mora in Type A words and to the final mora in Type B words. Third, H2 in relatively long words and the sole H tone in short words (or the sole H tone in KJ-Taira's single H tone system) do not generally permit heavy syllables with a rising contour tone, i.e. (19a), although they permit heavy syllables with a falling contour tone, i.e. (19b).

On the other hand, KJ dialects differ from each other in the following four respects. First, KJ-Taira permits only one H tone per word or *bunsetsu*, while all other KJ dialects permit two H tones in relatively long words and phrases. Second, the structure with H2 on the non-head mora of heavy syllables in (19a) is avoided in different ways: H tone spreading in both accent classes (KJ-Taira) vs. H tone shift in only Type A words (all other KJ dialects). This also separates KJ-Taira from all other KJ dialects. Third, KJ dialects fall into two groups depending upon whether or not H1 correlates with H2. In KJ-Teuchi and most other KJ dialects, H1 may be linked to the third and following moras/syllables, and bears a secondary distinctive role as its domain becomes dependent on the position of H2. In KJ-Kuwanoura, on the other hand, H1 is basically restricted to the first two moras and, hence, it still functions simply as a boundary tone that plays no distinctive role. This system resembles Kamimura's old system in this respect, which implies that it represents the most conservative system among double H tone systems in KJ. In all other KJ systems that permit more than one H tone per word, H1 has expanded its domain and changed its nature in the past eighty years. KJ-Teuchi represents the most advanced system that has undergone this change most radically.

Finally, KJ dialects show differences with respect to H2 deletion in non-final phrases in connected speech. This is a new rule in KJ dialects that was not observed in Kamimura's old system. It occurs only in one accent class in KJ-Kuwanoura, while it occurs in the entire system in other KJ dialects (except KJ-Taira, where H2 deletion does not occur at all). KJ-Teuchi represents the most developed system in the latter group, where H2 is now obligatorily deleted in both accent classes in non-final phrases in connected speech.

## 4. Conclusions

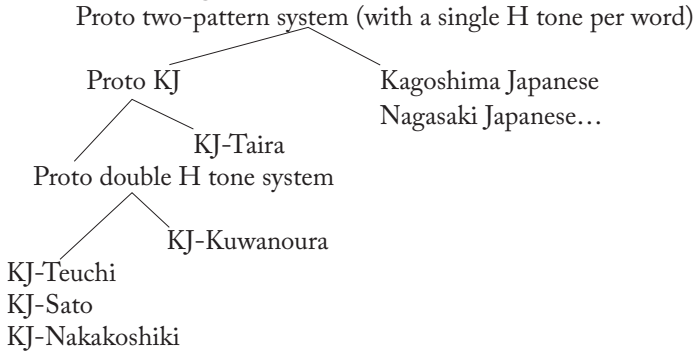
### 4.1. Summary of main points

Overall, KJ dialects resist a change to neutralize the two accent classes/patterns,

Type A and Type B, both at the lexical and post-lexical levels. At the lexical level, while H tone shift occurs in all KJ dialects except KJ-Taira to avoid assigning H2 to the non-head mora of heavy syllables, it occurs only in Type A words. This A-B asymmetry can best be explained by a constraint prohibiting a loss of tonal contrast. At the post-lexical level, H2 deletion did not take place in Kamimura's old system since it would have resulted in a complete loss of tonal contrast in connected speech. The same process does occur in present-day KJ-Kuwanoura, but only in Type B words. This A-B asymmetry, too, can be attributed to the constraint prohibiting a loss of tonal contrast. Thus, this anti-neutralization constraint serves as an undominated constraint in the phonology of KJ dialects.

Finally, (37) shows the assumed historical divergences of KJ and its sister dialects with a two-pattern system in south-western Kyushu. There is no doubt that the ancestor of present-day KJ dialects derived from a common system as Kagoshima and Nagasaki Japanese. This proto two-pattern system did not permit more than one H tone per word. This feature has been inherited only by KJ-Taira among present-day KJ dialects. In the course of time, this single H tone system developed in a double H tone system in KJ dialects, or the system where two H tones are permitted in relatively long words. This new system underwent further divergences among KJ dialects, reaching the system of KJ-Kuwanoura, on the one hand, and the system of KJ-Teuchi, on the other. Most other KJ dialects such as KJ-Sato, KJ-Nakakoshiki, and KJ-Kashima developed in the same direction as KJ-Teuchi, although to different degrees.

(37) Historical divergences



#### 4.2. Remaining questions

This study has revealed many interesting prosodic features of KJ dialects, but also uncovered many new questions that remain for future work. The most important task will be to examine the pitch accent system of individual KJ dialects in more detail. Equally important is to look at not only regional variations but also variations within each dialect, e.g. differences between different age groups in the same village. Given the accentual changes that have taken place in KJ over the past eighty years, one should not be surprised to find some ongoing changes in the

pitch accent systems of individual dialects today.

From a historical viewpoint, it will be interesting to ask about the historical relationship between mora-counting and syllable-counting systems. KJ is by and large a mora-counting language, while its sister dialect of Kagoshima Japanese is syllable-counting. Supposing that Kagoshima Japanese is the only syllable-counting system among two-pattern pitch accent systems in Japan, e.g. Nagasaki Japanese (Sakaguchi 2001, Matsuura 2014) and Kikaijima Japanese (Uwano 2000, 2002, Kubozono 2011b), it will be more realistic to assume that a mora-counting system changed into a syllable-counting system in the course of time than to assume the other way around. This analysis can be supported by the fact that KJ dialects have strengthened the roles of the syllable over the past eighty years, developing from a basically mora-only system to a hybrid system where the syllable as well as the mora plays pivotal roles. Detailed analysis of KJ dialects today may well shed new light on the historical processes yielding the syllable-counting system of Kagoshima Japanese from a mora-counting one.

Seen from a phonological perspective, KJ dialects may provide a new insight into the issue of tonal neutralization. While the tonal distinction between Type A and Type B is generally well preserved in KJ, it tends to be lost in short words. Kamimura already noted eighty years ago that the Type A/B contrast is lost in the citation forms of monomoraic nouns: /e/ 'grip' (Type A) and /e/ 'picture' (Type B) does not tonally contrast with each other in citation forms, although its phrasal forms kept the contrast as in /E-ga/ 'grip-nominative' vs. /e-GA/ 'picture-nominative'. This is true in present-day KJ dialects, too, but this type of tonal neutralization has expanded to bimoraic nouns in some dialects. For example, middle-aged or younger speakers in KJ-Kashima no longer keep the tonal contrast in bimoraic nouns, e.g. /A.me/ 'candy' vs. /a.ME/ 'rain', at least in their citation forms. A detailed examination of the KJ dialects may well illuminate the ways tonal contrasts are lost in the course of time.

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[Received 2 March 2016;  
Accepted 31 July 2016]

**【要 旨】**

**甌島方言アクセントの多様性**

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本稿では鹿児島県甌島方言のアクセントについて、その特徴と多様性を論じる。甌島は鹿児島県の西 40 キロの東シナ海に浮かぶ孤島であり、その方言は母語話者が推定で約 3000 人しかいない危機方言である。鹿児島方言や長崎方言と同じ二型アクセント体系を有しているが、これらの姉妹方言とは異なる特徴がいくつも観察される。たとえば鹿児島方言とは違い、モーラを数える体系であり、また一つの語に複数のアクセントの山（重起伏）を持つ。甌島方言のアクセントはさらに地域差が大きいという特徴を有しており、音節の役割や重起伏の形、文レベルにおける高音調削除規則などの点において多様な体系を有している。本稿では鹿児島方言や東京方言と比較しながら、この方言の特徴と多様性、そして一般言語学的意義を考察する。