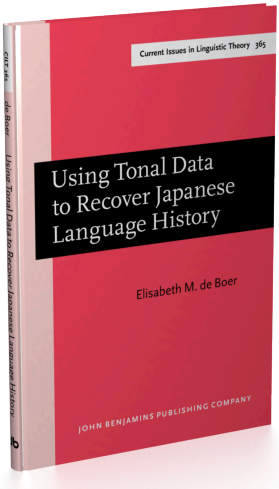
Current Issues in Linguistic Theory
365

CHAPTER 3

The tone systems of the modern dialects

https://doi.org/10.1075/cilt.365.c3



Pages 18–26 of
Using Tonal Data to Recover Japanese Language History
Elisabeth M. de Boer
[**Current Issues in Linguistic Theory**, 365]
2024. viii, 130 pp.

CHAPTER 3

The tone systems of the modern dialects

Abandoning the concept of accent, let us see how different Japanese dialects can be analyzed in terms of restricted tone, starting with the so-called Tōkyō type dialects. These constitute the vast majority of Japanese dialects, and include three principal subtypes. As we shall see (Section 3.2.2 below), the identification of these subtypes is closely related to the tone classes into which lexical items are divided.

3.1 On counting syllables or morae

Old Japanese (ca. 700–800) had only short open syllables, but modern Japanese distinguishes between light (1-mora) and heavy (2-mora) syllables.[7] The old pattern was altered by a large influx of Chinese loanwords and subsequent phonological changes within Japanese itself. By the 12th century, these changes had led to the inclusion of long vowels, vowel sequences, and closed syllables ending in moraic nasals and voiceless consonants.[8] Examples of phonological changes that resulted in mora consonants and vowel sequences in native Japanese words are seen in the so-called *onbin* assimilations in the gerund forms of verbs such as *yomite* > *yonde* 'read', *matite* > *matte* 'wait', *kakite* > *kaite* 'write', *kikite* > *kiite* 'hear', which began to appear in Early Middle Japanese.

In modern standard Japanese as well as in most dialects, the second half of a heavy syllable serves as an independent timing unit. In other dialects, such as that of Okayama, it can function as an independent tone-bearing unit as well.[9] In this regard, Okayama is more conservative than modern Tōkyō, in which /H/ on the second mora shifts left to the first mora if its vowel is high. For instance, *koi* 'carp' (< OJ *kopi*) in Okayama has /H/ on the first mora whereas with *kai* 'shell' (< OJ *kapi*) has /H/ on the second. In Tōkyō, both words have /H/ on the first mora. The height of the second vowel is critical: *ie* 'house' (< OJ *ipye*[10]), *sao* 'pole' (< OJ *sawo*),

---

7. Although contour tones almost certainly entailed some extension of vowel length in Old Japanese, there was no phonological distinction between long and short vowels.

8. Borrowing from Western languages introduced syllables with more than two morae; e.g., *sain* 'sign; sine'.

9. The second mora in these cases is a vowel of mora nasal; the acoustic realization of the syllable-final voiceless consonants is silence, and so are unable to carry definite tone.

and *yue* 'reason' (<OJ *yuwe*) all have /H/ on the second mora in both Okayama and Tōkyō. In light of the Okayama data, one way to account for the fact that, in Tōkyō, *koe* 'voice' has /H/ on the second mora whereas *kai* 'shell' does not is to treat *koe* as consisting of two light syllables but *kai* as a heavy syllable.

In some dialects, the second mora of heavy syllables is shortened so that they sound much like the light syllables. These dialects are found in parts of northeastern Honshū, Niigata, and Shimane, and in southeastern Kyūshū (Martin 1987: 4). In such dialects, syllables are the minimal temporal units, and forms like *matti* 'match' and *hon'ya* 'bookstore' are not counted as having three morae (*ma-t-ti, ho-n-ya*), but are rather divided into two temporal units (*mat-ti, hon-ya*). Shibata Takeshi (1962) has called these 'syllabeme' dialects to distinguish them from those in which the mora functions as the minimal timing unit.

To summarize, in modern Japanese, morae within heavy syllables may function as timing and tone-bearing units as they anciently did when all syllables were one mora long. In the most widespread present-day system (of which the standard language is representative), the mora counts as an independent timing unit, but not always as an independent tone-bearing unit: the ability of second morae with high vowels to carry tone has evidently eroded over time. In the so-called syllabeme dialects, the second morae are no longer tone-bearing units or timing units.

The distinction between syllable and mora plays its largest role in the phonology of dialects, like standard Japanese, in which subsyllabic morae have preserved the capacity to function as independent timing units but have mostly lost the capacity to bear /H/ tone. McCawley (1968: 134) famously described Tōkyō Japanese as a 'mora-counting syllable language', since the syllable is the /H/ tone-bearing unit, but counting the morae is necessary to determine where in the syllable the pitch will fall.

3.2 The Tōkyō type tone systems

With the exception of some dialects on Noto Island, discussed later, modern Tōkyō type tone systems allow no more than one /H/ tone per word or minor tonal phrase. In the standard language, if the first mora of the phrase is /Ø/, it is realized as [L]; if it is /H/, it is realized as [H]. All non-initial morae up to the /H/ mora, if there is one, are realized as [H]; any following morae are [L]. Some Tōkyō type dialects, however, do not have an automatic rise after the phrase-initial low; in these, only the /H/ tone itself is realized [H]. Table 3.1 gives examples of standard

10. In Old Japanese, /pye/ and /pe/ were distinct. OJ /p/ regularly became MJ /h/ in initial position and merged with /w/ medially; all /w/ were later lost except before /a/.

language nouns followed by the topic marker *wa*. Boldfacing indicates that a high pitch [H] is a direct realization of an underlying /H/ tone.

For the most part, all Tōkyō type dialects agree on the location in the word of the /H/ tone if there is one. They comprise the vast majority of tone systems in main-island Japan, (i.e., Honshū, Shikoku, Kyūshū and Hokkaidō, leaving the Ryūkyūan islands apart).

Table 3.1 Realization of tonal distinctions in Tōkyō Japanese

Gloss	Noun + *wa*	Tones	Phrase-initial realization	Phrase-internal realization
'child'	ko-wa	/Ø-Ø/	[L-H]	[H-H]
'hand'	te-wa	/H-Ø/	[**H**-L]	[**H**-L]
'wind'	kaze-wa	/ØØ-Ø/	[LH-H]	[HH-H]
'flower'	hana-wa	/ØH-Ø/	[L**H**-L]	[H**H**-L]
'sea'	umi-wa	/HØ-Ø/	[**H**L-L]	[**H**L-L]
'shape'	katati-wa	/ØØØ-Ø/	[LHH-H]	[HHH-H]
'mirror'	kagami-wa	/ØØH-Ø/	[LH**H**-L]	[HH**H**-L]
'heart'	kokoro-wa	/ØHØ-Ø/	[L**H**L-L]	[H**H**L-L]
'sparrow'	suzume-wa	/HØØ-Ø/	[**H**LL-L]	[**H**LL-L]

A word with /Ø/ tones throughout and a word with word-final /H/ (OXYTONIC in Martin's terminology) are tonally alike in many Tōkyō type dialects unless followed by an enclitic or a form of the copula.[11] After a word with all /Ø/ tones, a particle or copula is [H], but after a word with an /H/, it is [L].

Tōkyō type tone systems can be divided into subtypes in two different ways. Here we will examine divisions among dialects based on synchronic pitch assignment rules different from those of the Tōkyō standard. In Chapter 5, we will turn to the alternative, taking diachronic changes from Middle Japanese to each modern dialect into account. In Tottori and in Akita and other areas of northern Honshū, there are dialects where there is no automatic rise after an initial /Ø/, as there is in Tōkyō proper: in these, all syllables with /Ø/ tone are realized with [L] pitch throughout. There are also two Tōkyō type dialects – Shizukuishi and Hirosaki, both in the Tōhoku region – in which the syllables before an /H/ are all [L], but the /H/ = [H] spreads onto /Ø/ morae that follow it. As a result, the rise from [L] to [H] shows where the /H /tone is located; this rise makes words in these dialects sound very different from the same words in other Tōkyō type dialects (Table 3.2; Uwano 1997).

11. There are dialects where, in the absence of an enclitic, the word-final H tone is made audible by converting the [H] tone into a fall [F].

Table 3.2 Pitch assignment rules in different Tōkyō type dialects

	kabuto-wa	***murasaki-wa***	***karakasa-wa***
underlying tone	/**H**ØØ-Ø/	/Ø**H**ØØ-Ø/	/ØØ**H**Ø-Ø/
Tōkyō	[**H**LL-L]	[L**H**LL-L]	[LH**H**L-L]
Akita	[**H**LL-L]	[L**H**LL-L]	[LL**H**L-L]
Shizukuishi	[**H**HH-H]	[L**H**HH-H]	[LL**H**H-H]

While the realization of the tones in Shizukuishi and in Akita are strikingly different, they are both predictable from the same underlying phonemic representation.

3.2.1 The archaic tone system of Nozaki

The prosodic system of the village of Nozaki and two other villages on Noto Island is also exceptional. The system has preserved words with more than one /H/ as well as words with a distinctive /R/ tone. Historical changes in other Tōkyō type dialects have eliminated these archaic extra /H/ and /R/ tones. Note that, because of the extra /H/ tones in some words, Nozaki dialect is not culminative, so it would be hard to describe it rigorously in terms of pitch-accent; however, under our restricted tone analysis, it presents no problems provided we can account for its loss of the extra /H/ in other Tōkyō type dialects.

The Nozaki type system was described by Kindaichi in 1954. Anticipating for a moment later discussion of historical tone classes, we introduce labels for groups of words that shared the same tone patterns: a word belongs to in class *n.k*, where *n* is the number of its syllables (each originally a single mora) and *k* is a class designator. As explained more fully in Section 6.2 below, Nozaki words in tone class 3.7 are realized as [HLH] whereas words in class 3.6 are realized as [HLL]. Phonemically, class 3.7 has the pattern /HØH/. Words in class 2.5 plus a particle such as *wa, ga, o,* or *ni* are realized as [HL-H] whereas words in class 2.4 with the same particles are realized as [HL-L]. Finally, we can phonemicize Nozaki words in class 2.5 as having /HR/ tones, where word-final /R/ is realized with [L] before pause; with a particle, the phrase ends with [L-H].

The dialects of Tōkyō and Nozaki both have restricted tone systems in which tonal anticipation occurs. Tōkyō, however, has lost the rare word-final /R/ tone, and allows only one /H/ per word, so that words in 2.5 and 2.4 have merged (both yielding [HL-L]); likewise, words in 3.7 and 3.6 have merged (both to [HLL]). Thus, while the Tōkyō dialect proper is amenable to a pitch accent analysis, other dialects – Nozaki for one – though of the same general type, are not. Descriptions

of the Noto Island dialect type in more recent years (both based on fieldwork in the village of Shima-Bessho) showed that two developments have occurred since Kindaichi's research in the 1950s. Both Nitta (2005) and Hirako (2015) found that the first [H] in words that contain an extra /H/ is realized slightly lower than the second [H]. This suggests that, in these dialects, words with an extra /H/ may be losing the first /H/ (whereas, in most Tōkyō type dialects, as just explained, it is the second /H/ that has changed). In fact, this loss of the first /H/ is found in related dialects, such as Hakui and Hannora, on the Noto peninsula (de Boer 2010: 168–170).

Furthermore, according to Nitta (2005), in words of class 2.5, the [HL] part of the contour was realized entirely on a lengthened first syllable. Thus the word 'rain' plus a particle was now *a:me-ga* [F:L-H] (i.e., [HLLH]). This enabled the next stage, recorded by Hirako (2015), in which the rise to [H] was realized on the second syllable [F:H-L] (i.e., [HLHL]). The [L-H] contour, in other words, had moved left into the word. Unfortunately, this exceptional Nozaki-type tone system on Noto Island appears to have died out.[12]

3.2.2 The three Tōkyō subtypes

Although the location in words of the /H/ tone (if there is one) is largely the same in all Tōkyō type tone systems, three subtypes – Nairin, Chūrin, and Gairin – can be distinguished on the basis of the distribution of words over tone classes as well as geographically. As shown in Table 3.3, in Nairin type tone systems, class 1.2 nouns with the topic marker *wa* have merged with their counterparts in class 1.3; by contrast, in Chūrin and Gairin type tone systems, class 1.2 has merged with class 1.1. On the other hand, the Nairin and Chūrin types have both merged nouns in classes 2.2 and 2.3 while, Gairin, it is 2.1 and 2.2 that have merged. Likewise, 3.2 and 3.4 have merged in Chūrin and Nairin systems whereas 3.1 and 3.2 have merged in Gairin. (Note that, for reasons explained later, there is no class 3.3 in Table 3.3.) In all dialects, classes 3.6 and 3.7 have merged.

Referring back to Figure 1.6, one sees that two of the four Gairin areas contain both a conservative variety A and a more innovative variety B. In the B dialects, there is a tendency to avoid /H/ on morae with high vowels. In some Gairin B dialects, a non-final /H/ tone on a high vowel is shifted onto the next mora provided its vowel is not high. In others, this rightward shift happens regardless of the vowel with the original /H/. (See Chapter 4 for a discussion of the evidence that informs us of the tones of syllables in premodern stages of the language.)

---

12. Hirako Tatsuya, personal communication.

Table 3.3 The merger patterns of the tone classes in typical Tōkyō type tone systems

Example word	Totsukawa (Nairin)		Tōkyō (Chūrin)		Ōita (Gairin)	
1.1 *ko-wa*	[L:-H]	/Ø-Ø/	[L-H]	/Ø-Ø/	[L-H]	/Ø-Ø/
1.2 *na-wa*	[**H**:-L]	/H-Ø/	[L-H]	/Ø-Ø/	[L-H]	/Ø-Ø/
1.3 *te-wa*	[**H**:-L]	/H-Ø/	[**H**-L]	/H-Ø/	[**H**-L]	/H-Ø/
2.1 *tori-wa*	[LH-H]	/ØØ-Ø/	[LH-H]	/ØØ-Ø/	[LH-H]	/ØØ-Ø/
2.2 *mura-wa*	[L**H**-L]	/ØH-Ø/	[L**H**-L]	/ØH-Ø/	[LH-H]	/ØØ-Ø/
2.3 *yama-wa*	[L**H**-L]	/ØH-Ø/	[L**H**-L]	/ØH-Ø/	[L**H**-L]	/ØH-Ø/
2.4 *umi-wa*	[**H**L-L]	/HØ-Ø/	[**H**L-L]	/HØ-Ø/	[**H**L-L]	/HØ-Ø/
2.5 *saru-wa*	[**H**L-L]	/HØ-Ø/	[**H**L-L]	/HØ-Ø/	[**H**L-L]	/HØ-Ø/
3.1 *katati-wa*	[LHH-H]	/ØØØ-Ø/	[LHH-H]	/ØØØ-Ø/	[LHH-H]	/ØØØ-Ø/
3.2 *azuki-wa*	[LH**H**-L]	/ØØH-Ø/	[LH**H**-L]	/ØØH-Ø/	[LHH-H]	/ØØØ-Ø/
3.4 *kagami-wa*	[LH**H**-L]	/ØØH-Ø/	[LH**H**-L]	/ØØH-Ø/	[LH**H**-L]	/ØØH-Ø/
3.5 *kokoro-wa*	[L**H**L-L]	/ØHØ-Ø/	[L**H**L-L]	/ØHØ-Ø/	[L**H**L-L]	/ØHØ-Ø/
3.6 *karasu-wa*	[**H**LL-L]	/HØØ-Ø/	[**H**LL-L]	/HØØ-Ø/	[**H**LL-L]	/HØØ-Ø/
3.7 *kabuto-wa*	[**H**LL-L]	/HØØ-Ø/	[**H**LL-L]	/HØØ-Ø/	[**H**LL-L]	/HØØ-Ø/

3.3 Word-melody type tone systems

In the Tōkyō type dialects, an /H/ tone is linked to a particular tone bearing unit in the word (the first or only mora of a syllable). In dialects outside the Tōkyō group, the locus of the /H/ has become irrelevant: words are realized in one of two ways depending on whether the historical source of word did or did not contain an underlying /H/. The tone system of these dialects can be seen as a simplification of the Tōkyō type tone systems. They are found in the Ryūkyū islands and in southern Kyūshū, where they are called Kagoshima type after its most important urban center. We can tell that their tone systems developed specifically from the Gairin Tōkyō subtype because words inherited from classes 2.1 and 2.2 and classes 3.1 and 3.2 have the same word-melodies.[13] Using the same reasoning, we can see that the dialect of Oki, an island between Kyūshū and the Korean

13. Some Ryūkyū dialects show a three-way melody distinction rather than a Kagoshima type two-way distinction. I discussed the developments of Ryūkyūan in de Boer 2010: 206–246 and de Boer 2017, and therefore omit them here.

peninsula, developed from a Chūrin Tōkyō type tone system: in Oki, classes 2.2 and 2.3 have the same word-melody.

We can be more specific about the Gairin system from which the Kagoshima type word-melody system arose because the melodies determined by /H/ or its absence correlate with the /H/ tones found in the Gairin dialects of northwest Kyūshū. The Kagoshima realizations are often referred to as A and B in the literature. (Note that these labels have nothing to do with our Gairin A and Gairin B distinction.) The general patterns for phrases of up to 5 morae, and examples of phrases of 2 to 4 morae each are given in Table 3.4.

Table 3.4 Kagoshima word-melody contrasts

	1 mora	**2 morae**	**3 morae**	**4 morae**	**5 morae**
A	[F]	[HL]	[LHL]	[LLHL]	[LLLHL]
B	[H]	[LH]	[LLH]	[LLLH]	[LLLLH]

	2 morae	**3 morae**	**4 morae**
A	*kaze* 'wind'	*kaze-wa* 'wind' TOP	*kaze-made* 'until the wind'
	[HL]	[LH-L]	[LL-HL]
B	*hana* 'flower'	*hana-wa* 'flower' TOP	*hana-made* 'until the flower'
	[LH]	[LL-H]	[LL-LH]

A comparison with Tōkyō shows how fundamentally different the two systems are: In Tōkyō the /H/ tone is linked to a specific location in the word and remains there. There are as many classes as there are syllables in the word to carry the /H/ tone, plus one more for atonic words. In Kagoshima there are only two classes, no matter how long the word is, each with its own melody: the longer the word or phrase, the farther to the right does the [H] appear in the string of morae.

Though the phonemic contrast of the two melodies remains the same, the realization rules for word-melodies A and B differ in other Kagoshima type dialects. Some of the differences are so great that, in Makurazaki in southwest Kyūshū (McCawley 1978) and in Nishi-no-omote on Tanegashima (Arakawa 2015), the two melodies are phonetically almost the exact reverse of those in the majority of the Kagoshima type dialects (i.e., [L] appears for [H] and vice versa). We will discuss the reasons for this in Chapter 11.

Table 3.5 The difference between syllable-based tone and word-based tone

'wind'	Tōkyō (no /H/ tone)[14]		
	kaze	*kaze-ga*	*kaze-made*
	[LH]	[LH-H]	[LH-**H**L]
	Kagoshima (word-melody A)		
	kaze	*kaze-ga*	*kaze-made*
	[HL]	[LH-L]	[LL-HL]
'flower'	Tōkyō (word-final /H/ tone)		
	hana	*hana-ga*	*hana-made*
	[L**H**]	[L**H**-L]	[L**H**-LL]
	Kagoshima (word melody B)		
	hana	*hana-ga*	*hana-made*
	[LH]	[LL-H]	[LL-LH]

3.4 The Kyōto type tone systems

The Kyōto type tone systems are found in central Honshū in and around the old cultural center of Japan, in the larger part of Shikoku, and (in a simplified form) on Sado Island, where the dialect has been strongly influenced by the dialect of Kyōto in other respects as well. These tone systems have a distinctive /L/ tone as well as /H/ and /Ø/ tones. The /L/ tones were inherited from Middle Japanese; this is one reason that it has been mistakenly believed that the Kyōto tone system must be more historically conservative than those of other dialects. The /L/ of Middle Japanese could fall on any syllable whereas, in modern Kyōto type dialects, it falls only on the first syllable, if present.

As in Tōkyō, the /H/ tone in Kyōto type tone systems is followed by a fall in pitch, but the location of the /H/ tone is one syllable earlier (i.e., to the left) of the /H/ syllable in the corresponding Tōkyō word. In particular, when Tōkyō has word-final /H/, Kyōto has /H/ on the penult syllable; as a result, word-final /H/ tone in Kyōto is rare. Classes 1.2 and 2.5 regularly have word-final /H/ tone in the Kyōto type dialects, but, as we shall see, these are special cases – small classes for which one must reconstruct word-final rising tone /R/ in Middle Japanese. Apart from a handful of 3-mora words with voiceless geminate consonants that have word-final /H/ tone, word-final /H/ are virtually absent Kyōto type dialects.

14. There are independent reasons for reconstructing the particle *made* 'up to, until' as /HØ/.

When a word has initial /H/ tone in Tōkyō (Martin calls these PROTOTONIC), it cannot be shifted to the left in Kyōto. In these cases, the Kyōto type tone systems have a distinctive /L/ tone on the initial syllable.[15] As a result, in these words, a [L] second syllable in Tōkyō type systems corresponds regularly to [L] in Kyōto type systems.

We will discuss the origin of the word-initial /L/ tone in more detail in Chapter 6. Here, we simply lay out the tonal distinctions that exist in the Kyōto type tone systems, and explain how they can be analyzed within the framework of restricted tone.

Since word-initial /L/ tone is phonemic in Kyōto, there is no automatic [L] pitch on the first mora, and words with only /Ø/ tones are level and high in pitch. Nevertheless, after a /H/ tone, there is a drop in pitch just as in the Tōkyō type tone system. Words that start with /L/ tone followed only by /Ø/ tones have an automatic rise to [H] pitch at the end of the word or tonal phrase. Thus, for nouns of 3 morae, for example, we have Table 3.6.

Table 3.6 Canonical pitch shapes of 3-mora nouns in Kyōto

/ØØØ/	[HHH]
/ØHØ/	[H**H**L]
/HØØ/	[**H**LL]
/LØØ/	[**L**LH]
/LHØ/	[**LH**L]

Traditional Japanese linguistic analysis prefers to divide Kyōto words into two REGISTERS, called 'low' and 'high'. The low register corresponds to our /L/-initial words, the high register to both /H/- and /Ø/-initial words. The concept of register is then projected back onto Middle Japanese to distinguish words with initial [L] or [H] in the mistaken belief that Kyōto type dialects reflect older stages of the language more faithfully than other dialects. Even worse, the term register is applied to the word-melody Kagoshima type dialects and to dialects of the Ryūkyū islands. Even the first /H/ tone in words that contain more than one /H/ in the dialect of Nozaki have been analyzed in terms of register. But none of this is desirable much less necessary: as we shall see, MJ textual evidence does not support the idea that word-initial tone had some special status relative to other tones in the MJ tonal system.

15. An exception are words of tone class 3.2. Words of this class mostly have /LHØ/ tone in the Kyōto type tone systems, /ØØØ/ in the Gairin Tōkyō type tone systems, and word-final /H/ in most other Tōkyō type tone systems. For an explanation of this correspondence pattern, see Chapter 6.