Typology of intonational phrasing in Japanese dialects

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1. Introduction

The cross-linguistic comparison of intonation has become increasingly widespread in recent years, and the findings from typologically different languages have contributed to intonational theory in general (Gussenhoven 2004; Jun ed. 2005). This has become possible since the emergence of a common framework: the Autosegmental-Metrical (AM) model (Pierrehumbert 1980; Ladd 1996). As a prototypical ‘pitch accent language’ (cf. Beckman 1986) and as a language typologically different from well-studied European languages, Japanese has played a leading role in the development of the AM theory of intonational phonology (Poser 1984; Beckman and Pierrehumbert 1986; Pierrehumbert and Beckman 1988).

It is important to point out, however, that the language identified in most literature as “Japanese” is in fact more accurately Tokyo Japanese, one of the many varieties of the language, whose dialects exhibit surprisingly diverse prosodic systems. The intonational systems of dialects spoken outside Tokyo are at best understudied; most have not been documented at all. It must also be pointed out that current theories of Tokyo intonation are all built on a long tradition of research in word-level prosody (Yamada 1892; Sakuma 1919; Jinbo 1925; Miyata 1928; Arisaka 1941), which has been largely motivated by comparative descriptions of various Japanese dialects (e.g. Hattori 1929; Kindaichi 1937; Hirayama 1951). There is a tremendously large number of studies on
the word-prosodic systems of various Japanese dialects, some of which have helped
construct of a word-prosodic typology of dialects, taking either a diachronic or
synchronic viewpoint (Tokugawa 1962; Hirayama 1967; Kindaichi 1974; Shibata 1961;

The first and (thus far) only attempt to form a typology of Japanese dialectal
intonation is Uwano’s (1984) study, which briefly describes the intonational phrasing of
nearly twenty dialects. Continuing this line of research by integrating the findings from
traditional studies on word-prosodic systems of Japanese dialects and our current
knowledge of the intonational phonology of world’s languages would shed new light on
our understanding of Japanese intonation and would also contribute to general theories
of intonational phonology.

The goal of this chapter is to form a typology of intonational phrasing in Japanese
dialects. Because of the largely preliminary nature of the current body of research on
Japanese dialectal intonation, it is beyond the scope of the current study to
comprehensively describe all existing dialects. The present study, therefore, focuses
primarily on a specific group of dialects: dialects without lexically-specified tone
(traditionally called lexical pitch accent or simply accent). Although previous research
on the prosodic systems of these dialects is limited, the analysis of these particular
dialects provides the foundation for developing intonational typology of Japanese for
the following two reasons. First, as dialects without lexical tone have no complex tonal
phenomena whose domain is a word-sized unit, there is no interference from word-level
tones on the surface pitch track of an utterance, thus providing the ideal material for
analyzing purely postlexical phenomena (Maekawa 1997). Second, as will be shown, it
is possible to extract a single typological parameter from the analysis of this specific
group of dialects, which will then enable the generalization of intonational phrasing in
dialects with and without lexical tones.

Before analyzing intonational phrasing in Japanese dialects, I describe the methods of
analysis adopted in the current chapter and make explicit the assumptions made in
regards to intonational phrasing in Section 2.

Section 3 resolves how to best classify dialects without lexical tones. While these
dialects are traditionally divided into two subgroups, the precise feature that
distinguishes them has sometimes served as a point of controversy. I propose that the
two types of dialects are distinguished by a parameter concerning intonational phrasing:
the presence or absence of what I call multiword Accentual Phrases ([±multiword AP]).

Section 4 briefly describes intonational phrasing in a number of dialects with lexical
tone —specifically, the Tokyo, Fukuoka, Osaka and Kagoshima dialects—and proposes
that these dialects can also be categorized by means of the [±multiword AP] parameter.
In combination with another parameter, [±lexical tone], which distinguishes dialects
with respect to the presence or absence of lexical tone, Japanese dialects are claimed to
be classified into four logically possible categories. Section 5 concludes this chapter.

2. Approach

2.1 Intonational phrasing

One of the functions of prosodic features is to mark the division of an utterance into
smaller linguistic units, or conversely, the grouping of multiple linguistic units (e.g.
‘words’) into larger units forming the utterance. While various sorts of prosodic features
play a role in this division or grouping (generally called prosodic phrasing), the present
chapter analyzes only prosodic phrasing by intonation, or intonational phrasing.
There is ample evidence showing that, in general, the intonational phrasing can not be predicted by syntax (Bolinger 1972); there can be multiple prosodic phrasings for utterances with same syntax, and well-formed prosodic structure can violate syntactic structure. It is also known that some factors outside the realm of syntax, such as speech rate and length of utterance, play a role in determining prosodic phrasing (see Shattuck-Hufnagel & Turk 1996 for a review). Due to the lack of isomorphism between syntactic structure and prosodic structure, the field has witnessed intense debate about how the two are related to each other (e.g. Truckenbrodt 1999; Selkirk 2000), but as yet no consensus has emerged. Consequently, there is no general agreement on how prosodic phrases are defined. To put it briefly, opinions diverge depending on the degree to which syntax is included in the definition of prosodic phrases. This chapter adopts what Jun (1998) calls the ‘intonational phonological approach’ (as opposed to the ‘syntactic approach’), in which a prosodic phrase is defined on the basis of the surface phonetic form of the utterance, i.e. its tonal shape, without reference to its syntactic structure.

In the present study, I claim that Japanese dialects differ in whether or not the Accentual Phrase (see 3.5) is allowed to contain more than one ‘word’. A cross-dialectal comparison of this sort is made possible by postulating the (lack of) correspondence between the prosodic phrase (defined independently of syntax) and the ‘word’ (defined independently of prosody). The ‘word’, therefore, serves as the reference point for the description of cross-dialectal differences in intonational phrasing.

2.2 Word

What is a ‘word’? Rather than delving into this fundamental debate, the word-like unit will be defined operationally for the sake of cross-dialectal comparison. What is
important is that the definition does not make reference to the prosody, in order to avoid
circularity in the definition. Thus, the word-like unit in this chapter is defined
morphosyntactically as (1) and is identified here as Word, with the first letter capitalized.

(1) Word

A lexical item potentially followed by one or more postpositional particles.

For example, the sentence *asita-wa yuki-ga hur-u-yo* (tomorrow-TOP snow-NOM fall-
PRES-SFP ‘Tomorrow, it will snow.’), where -wa, -ga and -yo are particles, consists of
three Words: *asitawa*, *yukiga*, and *huruyo*. Even without these particles, the sentence
*asita yuki hur-u* (tomorrow snow fall-PRES ‘Tomorrow, it will snow.’) also consists of
three Words, because a particle can potentially be inserted after the lexical items *asita*,
yuki, and *hur-u*.

A unit equivalent to the Word is introduced into the prosodic hierarchy of Tokyo
Japanese by Pierrehumbert & Beckman (1988) and into that of Seoul Korean by Jun
(1998). This unit, called a ‘word’ or ‘phonological word’, is posited at the level
immediately below the Accentual Phrase. What has to be noticed here is that it is not
always easy to speak of hierarchical organization between the Accentual Phrase and the
Word in Japanese. On the one hand (at least in the Tokyo dialect), more than one Word
can be grouped into a single Accentual Phrase (i.e. the former appears hierarchically
*lower* than the latter), but on the other hand, a single Word can be divided into two or
more Accentual Phrases (i.e. the former appears hierarchically *higher* than the latter).
Examples of the division of a single Word into multiple Accentual Phrases include
cases where a long compound noun is divided into multiple Accentual Phrases
(Kubozono 1988), and cases where a particle is tonally decoupled from the preceding lexical item (Okumura 1956; Sagisaka and Sato 1983; Kubozono 1988; Maekawa and Igarashi 2007). Divisions such as these are arguably a feature of most Japanese dialects. In any case, however, the division of a single Word is not relevant to the present work. It is the tonal grouping of more than one Word that I discuss here, and I demonstrate below that there is a crucial cross-dialectal difference with regard to such groupings.

2.3 Data collection

Since previous research on the intonational structure of the dialects covered here has been fairly limited, it is better at this stage to focus the analysis on controlled, laboratory speech than on natural, spontaneous speech. The data examined in this chapter consist of recordings of a ‘simulation task’ (Maekawa 1990; Kori 2006b), in which speakers are asked to translate prepared test sentences written in Standard Japanese into their dialect, and then are asked to read them aloud as if they were talking to their local friends.

It is worth noting, as discussed in Section 2.1, that even a carefully-controlled experimental design does not necessarily guarantee that speakers will produce utterances with consistent intonational phrasing. Nevertheless, two syntactic/informational factors are known to considerably narrow down the range of options in intonational phrasing in Japanese. These include focus and syntactic branching, which I describe below.

Effects of focus on intonational phrasing have been described extensively for the Tokyo dialect (Hattori 1933; Kindaichi 1951; Kawakami 1957a; Poser 1984; Pierrehumbert and Beckman 1988; Fujisaki 1989; Kori 1997; Maekawa 1994a, among many others). In general, a rise in fundamental frequency (f0) is observed at the
beginning of the focused Word and the post-focal Words are prosodically subordinated to the focused Word (see also Venditti et al. 2008). Similar effects are reported for dialects such as Osaka (Kori 1987, 1989), Kobayashi (Sato 2005; Igarashi 2006), Goshogawara (Igarashi 2007a) and Fukuoka (Igarashi 2007b).

Fig. 1 shows the waveforms and f0 contours of an utterance in the Goshogawara dialect (a dialect with lexical tones). The utterance ‘He was punched by the local gang in Inagaki Village’ consists of three Words with focus either on the first Word (left) or on the second Word (right). (Vertical lines in diagrams showing f0 contours stand for Word boundaries.) In the utterance on the left, the pitch range during the post-focal Words is considerably compressed, as that they are prosodically subordinate to the focused Word. In the utterance on the right, in contrast, the pitch range of the second (focused) Word is expanded and the third (post-focal) Word is compressed. Such pitch range expansion on a Word can be seen as a manifestation of the presence of prosodic boundary before it, and pitch range compression signals the absence of such a boundary.

Wh-elements such as what, who, and where consistently control focus in sentences (Maekawa 1994a; Kitagawa 2005; Ishihara 2007; Kubozono 2007, for the Tokyo dialect), and thus they were also exploited for the elicited utterances in this chapter.

Syntactic constituency has also been described as one of the factors that determine intonational phrasing in the Tokyo dialect (Uyeno et al. 1979; Fujisaki 1989; Selkirk and Tateishi 1991; Kori 1997). Kubozono (1988) formulated this syntax-intonation mapping as a ‘branching constraint’, in which a right-branching syntactic boundary introduces f0 boosting, while a left-branching boundary does not. This sort of mapping has been reported for other dialects, such as Kumamoto (Maekawa 1990, 1994b; Kori
Take for example the following sets of sentences controlled for structure: the Apple set (2) (borrowed from Kori 1989) and the Sleepy set (3) (borrowed from Maekawa 1990). (These examples will be used repeatedly in this chapter.) The sentences are given in Standard Japanese, and their branching structure is indicated by square brackets. Notice that there is a right-branching syntactic boundary between the first and second Words in (2b) and (3b), but not in (2a) and (3a).

(2) Apple set:

a. Left-branching

Nagano-no obaatyan-ni ringo-o morat-ta.

[[Nagano-GEN grandmother-ABL] [apple-ACC receive-PAST]]

‘I received an apple from the grandmother in Nagano.’

b. Right-branching

Nagano-de obaatyan-ni ringo-o morat-ta.

[Nagano-LOC [grandmother-ABL [apple-ACC receive-PAST]]]

‘In Nagano, I received an apple from an old woman.’

(3) Sleepy set:

a. Left-branching

Ziroo-ga yom-u-to nemutaku nar-u.

[[Jiro-NOM read-PRES-CNJ] [sleepy become-PRES]]
‘(We) get sleepy if Jiro reads’

b. Right-branching

\[
\text{Jiro-wa nom-u-to nemutaku nar-u.}
\]

\[
\text{[[Jiro-TOP [drink-PRES-CNJ [sleepy become-PRES]]]]}
\]

‘Jiro gets sleepy if he drinks.’

Fig. 2 and Fig. 3 show the contours for Apple set (2) and Sleepy set (3), respectively, in the Fukuoka dialect (a dialect with lexical tones).\(^2\) Pitch range expansion can be observed on the second Word in the utterances in the right panels in both figures, caused by the existence of a right-branching syntactic boundary between the first and second Words in both cases.

<<FIG. 2 AROUND HERE>>

<<FIG. 3 AROUND HERE>>

3. Subclassification of dialects without lexical tones

3.1 Dialects without lexical tonal specification

A number of Japanese dialects have no lexically-specified tones at all. These dialects are widely distributed in geographically-noncontiguous areas of the Japanese archipelago (for their geographical distribution, see Hirayama 1960; Akinaga 2002). Research on historical change in tonal systems suggests that these dialects have emerged as a result of the loss of lexical tonal contrasts that existed in the Japanese protolanguage (Hirayama 1957; Kindaichi 1974). I propose here a typological parameter \([\pm\text{lexical tone}]\) as (4), which distinguishes dialects that have lexical tone from those that do not.
(4) $\pm$lexical tone:

The presence or absence of lexically-specified tone in a given dialect.

Many Japanese linguists further classify the [-lexical tone] dialects into two subgroups (e.g. Hirayama 1951; Shibata 1961; Uwano 1989, 1998a). While terminology differs across researchers, they are referred to in this chapter as ‘one-pattern accent’ dialects and ‘accentless’ dialects, respectively, based on the terminology of Uwano (1998a). Although the one-pattern accent vs. accentless dichotomy has gained broad acceptance in Japanese dialectology, it has at the same time been a point of controversy (Yamaguchi 1975, 1998; Ramsey 1998); the question of what parameter can be used to further sub-classify the [-lexical tone] dialects has not always been answered explicitly. One of the goals of the current chapter is to propose a parameter by which the one-pattern accent and accentless dialects can be classified.

Although the precise nature of the one-pattern accent vs. accentless distinction has failed to be clearly defined in the literature, the idea that the [-lexical tone] dialects are broken down into two subgroups provides an insightful implication to the development of intonational typology. This section, therefore, focuses on elaborating this idea by redefining the parameter $\pm X$ shown in Table 1, which distinguishes the one-pattern accent from accentless dialects. Let us begin with summarizing previous descriptions of word-level tonal phenomena in these two types of dialects.

<<TABLE 1 AROUND HERE>>

3.2 One-pattern accent dialects
Dialects with the one-pattern accent system are spoken around the boundary between Miyazaki and Kagoshima Prefectures on the island of Kyushu. These include the Miyakonojo, Kobayashi, and Shibushi dialects, among others (Hirayama 1951).

According to Hirayama (1951), the one-pattern accent system historically developed from the ‘two-pattern accent’ system preserved in neighboring Kagoshima dialect. As is discussed further below in 4.5, the Kagoshima dialect has two unpredictable groups of words, generally called Type A (characterized by an f0 fall) and Type B (characterized by an f0 rise). Hirayama proposes that the one-pattern accent dialects have lost this tonal contrast, preserving only the Type B (i.e. rising) pattern.3

In one-pattern accent dialects, the Word exhibits an f0 rise from the penultimate to the final syllable. Thus, the pitch contours on one-, two-, three- and four-syllable Words can be represented schematically as H, LH, LLH and LLLH, respectively, where H stands for a high-toned syllable and L for a low-toned one.4 The resulting tonal shape, which resembles that of Type B in the Kagoshima dialect, is known as a ‘high-tailed pattern’. Unlike dialects such as Kagoshima and Tokyo, which may have more than one lexically-specified (i.e. unpredictable) tonal shape in their inventory, one-pattern accent dialects have a fixed tonal pattern: the high tone is consistently found on the final syllable of the Word (but see 3.8).

3.3 Accentless dialects

The accentless dialects include, among many others, the Kumamoto and Omuta dialects spoken on Kyushu Island, the Fukui dialect spoken in the Hokuriku region, the Yamagata, Sendai, and Koriyama dialects spoken in the Southern Tohoku region, and the Takahagi and Imaichi dialects spoken in the Northern Kanto region.
Roughly speaking, there are two views concerning the property that differentiates the accentless dialects from the one-pattern accent dialects: one is what I call the ‘accentless-as-flat view’ and the other is what I call the ‘accentless-as-inconsistent view’. The former view can be found, for example, in Hattori (1932) and Hirayama (1940). According to their observation, the accentless dialects exhibit relatively ‘flat’ tonal patterning; in other words, words are pronounced with a narrower pitch range in the accentless dialects than other dialects. The validation of the accentless-as-flat view is beyond the scope of this study, and thus it will not be discussed.

The accentless-as-inconsistent view is shared by most Japanese dialectologists: accentless dialects do not appear to have a consistent tonal pattern specified for the Word, whereas the one-pattern accent dialects have a fixed pattern (e.g. the ‘high-tailed pattern’). Shibata (1961), for example, reports that a three-syllable Word such as azuki ‘bean’ can be produced HHH, LLL, HLL, LHL or LLH. Hirayama states that in the accentless dialects ‘there are no accent rules for any word, and all words are pronounced quite freely (non-systematically)’ (Hirayama 1968: 34, parentheses his). Similar descriptions can be found in many other studies (see references in Yamaguchi 1998).

It is important to note that the studies cited above describe the absence of a consistent tonal pattern at the Word level, but they say nothing about tonal patterning at the phrase or utterance level. Unfortunately, however, the studies have long served as a source of the undocumented but widespread belief that accentless dialects have no consistent tonal patterning in their phonology at all.

In fact, the existence of consistent phrase-level tonal patterning in the accentless dialects has been suggested as early as the 1930’s by Hattori (1932), who speculated that the domain of the tonal pattern in the Sendai (accentless) dialect might be not the
Word but rather the sentence as a whole or ‘breath group’. Uwano (1984) reinterpreted Hattori’s data and suggested that the tonal pattern in the Sendai dialect marks a prosodic unit consisting of a group of Words. Nonetheless, no systematic investigation has been made to explore Hattori’s insight, and tonal phenomena in the accentless dialects have largely remained unexplained until Maekawa’s (1990, 1994b, 1997, 1999) quantitative studies on the intonational systems of the Kumamoto and Fukui dialects. The results of his production and perception experiments revealed that tonal phenomena in these accentless dialects are largely equivalent to those in the Tokyo dialect, in that syntactic factors such as wh-induced focus and branching structure systematically determine prosodic phrasing of the utterances.

Nonetheless, even after the accentless dialects were revealed to have consistent tonal patterning at the phrase level, no reevaluation of the one-pattern accent vs. accentless distinction was conducted prior to the current study. As long as the scope of the examination is extended to phrase-level prosody, the accentless-as-inconsistent view is no longer viable, and it is thus necessary to propose another property that subclassifies the [-lexical tone] dialects.

3.4 Dialect-specific intonational phrasing

Fig. 4 shows f0 contours of utterances containing three Words in the Kobayashi (one-pattern accent) dialect. The utterance is ‘Saburo punched Akemi’, in response to broad focus ‘What happened?’ (left) versus narrow focus ‘Who did Saburo punch?’ (right). In the narrow focus utterance (right), the focus is on the second Word. In both utterances, a high-tailed tonal pattern is observed on each Word. The difference between the two utterances is found not in the tonal realization of the Words—they all have the basic
high-tailed pattern—but in the manipulation of pitch range. Specifically, in the narrow focus utterance (right) the pitch range of the second (i.e. focused) Word is expanded and that of the third (i.e. post-focal) Word is compressed.

Fig. 5 shows a comparable pair of utterances in the Koriyama (accentless) dialect produced in the same contexts mentioned above. Rise-fall contours are found in the broad focus utterance (left), one on each Word. Thus, for broad focus utterances, the situation is superficially the same as that in the one-pattern accent dialects: each Word is marked by the same tonal pattern.

The cross-dialectal difference becomes clear in the utterance with narrow focus on the second Word (Fig. 5, right panel). Here, not every Word bears its own rise-fall pattern. Instead, the utterance has only two rise-fall patterns: one on the first (i.e. pre-focal) Word and the other spanning the last two Words (i.e. the focused Word and the post-focal Word). This phenomenon has been reported for other accentless dialects such as Fukui and Kumamoto (Maekawa 1990 et seq.), but it has not been observed in one-pattern accent dialects (cf. Uwano 1998a).

The difference between these two types of dialects can be illustrated schematically as in (5), where dotted lines stand for f0 contours.

(5) a. Kobayashi (one-pattern accent) dialect

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(5) a. Kobayashi (one-pattern accent) dialect

[\[\begin{array}{c}
\text{Word} \\
\text{Word} \\
\text{Word} \\
\text{Word}
\end{array}\]\]
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(5) a. Kobayashi (one-pattern accent) dialect

[\[\begin{array}{c}
\text{Word} \\
\text{Word} \\
\text{Word} \\
\text{Word}
\end{array}\]\]
```
b. Koriyama (accentless) dialect

In Kobayashi, the tonal pattern (high-tailed pattern) never spans more than one Word; the contour in (5a, right) is prohibited in one-pattern accent dialects. In Koriyama, in contrast, the tonal pattern (rise-fall pattern) can span two or more Words; the contour in (5b, right) is in fact allowed in accentless dialects. I propose that this distinction is a manifestation of the parameter distinguishing the one-pattern accent dialects from the accentless dialects.5

3.5 Accentual Phrase

I now describe the dialect-specific prosodic phrasing within the AM framework of intonational phonology. The prosodic phrasing most relevant here is at the level of the Accentual Phrase (AP), defined in (6).

(6) Accentual Phrase:

A tonally-marked prosodic unit immediately above the Word level.

The tonal shape associated with the AP differs across dialects. In the Kobayashi (one-pattern accent) dialect, the AP is marked by the high-tailed pattern, whereas in the Koriyama (accentless) dialect, the AP is marked by a rise-fall pattern with the beginning of the rise aligned near the left-edge of the AP and the end of the fall aligned near its
right edge. In fact, most of the accentless dialects—regardless of their geographical distribution—appear to mark APs by a variation of this rise-fall pattern (the Kumamoto dialect described by Maekawa 1994b, 1997, 1999, and the Yamagata, Omuta, and Imaichi dialects discussed in Sections 3.6, 3.7, and 3.8 below). In some accentless dialects, such as that of Fukui, the beginning of the rise is considerably delayed toward the right edge of the AP (Maekawa 1990, 1997). In contrast to the accentless and one-pattern accent dialects, [+lexical tone] dialects (e.g. Tokyo dialect) are characterized by lexically-specified tone; thus, the various Word-level tones within the AP play a role, at least in part, in the determination of the AP’s overall tonal shape (see Section 4).

Thus, in the AM terms, the difference in prosodic phrasing between the one-pattern and accentless dialects can be described as follows. In the Kobayashi (one-pattern) accent dialect, each AP never contains more than one Word, whereas in the Koriyama (accentless) dialect, a single AP can contain two or more Words. Henceforth, an AP containing only one Word is referred to as a monoword AP and an AP containing more than one Word as a multiword AP. Now we can define the parameter [±X] in Table 1, which distinguishes the one-pattern accent from accentless dialects, as (7).

(7) [±multiword AP]:

The presence or absence of APs containing more than one Word in a given dialect.

The traditional one-pattern accent vs. accentless dichotomy of the [-lexical tone] dialects can now be redefined as shown in Table 2.

<<TABLE 2 AROUND HERE>>

3.6 More examples of prosodic phrasing in dialects without lexical tone
A dialect is regarded to have the parameter [+multiword AP] as long as it allows APs to contain more than one Word. This should be true no matter what factors are responsible for deriving the prosodic phrasing. Venditti et al. (1996) examined the prosodic phrasing in broad focus and narrow focus utterances in English, Tokyo Japanese, and Chonnam Korean. The phrasing mechanism in the latter two languages is quite similar to that in Koriyama (accentless) dialects shown in Fig. 5. The authors interpret the phrasing in the narrow focus utterance as the result of restructuring of the prosodic hierarchy, with the deletion of existing prosodic boundaries (called ‘dephrasing’) and/or the insertion of new boundaries. The pitch contour in the Koriyama (accentless) example shown in the right panel of Fig. 5 can be interpreted as the result of dephrasing in their frameworks. However, the parameter [±multiword AP] proposed in this chapter is not defined by the presence or absence of dephrasing caused by focus, even if the examples given in Fig. 4 and Fig. 5 demonstrate prosodic phrasing derived by narrow focus. 6

In order to make explicit that the parameter [±multiword AP] has no direct relevance to focus prosody, let us examine the prosodic phrasing as manipulated by syntactic branching in examples from different [-lexical tone] dialects. Fig. 6 shows utterances from the Sleepy set (3) in the Yamagata (accentless) dialect. In the left-branching utterance (left), the first AP is a multiword AP containing two Words, between which there is no right-branching syntactic boundary. The second AP is also a multiword AP containing two Words. In the right-branching utterance (right), in contrast, each of the first two Words constitutes its own AP due to the existence of a right-branching syntactic boundary between them. The last two Words combine to form a single AP.
Thus, the utterance consists of three APs, the first two are monoword APs and the last is a multiword AP.

<<FIG. 6 AROUND HERE>>

Examples from the Takahagi (accentless) dialect are provided in Fig. 7, which shows utterances from the Apple set (2). The figure shows that Words are grouped together into a multiword AP when there is no right-branching boundary intervening.

<<FIG. 7 AROUND HERE>>

The fact that a multiword AP is prohibited in the one-pattern accent dialects can be confirmed in Fig. 8, showing the utterances of the Apple Set (2) in the Kobayashi dialect. The first thing to note is that the two utterances have nearly the same contour regardless of their difference in branching structure (for this apparent lack of syntax-intonation mapping, see Section 5 below). More importantly, each Word constitutes its own AP; there are no multiword APs.

<<FIG. 8 AROUND HERE>>

3.7 Intermediate Phrase

So far, I have not discussed the prosodic grouping of more than one Word in one-pattern accent dialects. If an AP cannot contain more than one Word in the one-pattern accent dialects, at what level are Words grouped prosodically?

The right panel of Fig. 4 above shows that prosodic phrasing induced by narrow focus in the Kobayashi (one-pattern accent) dialect is marked by pitch range modification (see Sato 2005; Igarashi 2006). The pitch range expansion during the focused Word is a sign that the focused Word is preceded by a prosodic boundary, and the pitch range
compression on the post-focal Word signals the absence of such a boundary between the focused Word and the post-focal string.

The pitch range expansion signaling a prosodic boundary is often called reset. In Pierrehumbert & Beckman’s (1988) model of the Tokyo dialect, the prosodic phrase that functions as the domain of pitch range specification is the ‘Intermediate Phrase’. Adopting this unit for the Japanese dialects that we are considering, I define the Intermediate Phrase as in (8).

(8) Intermediate Phrase (ip):

The prosodic phrase immediately above the AP in the prosodic hierarchy, functioning as the domain of pitch range specification.

Pitch range compression occurs on all but the leftmost AP within an ip. At the ip boundary, the speaker resets the pitch range.

It must be pointed out that Pierrehumbert and Beckman’s (1988) original definition of the ip relies on a phonological process specific to the Tokyo dialect: namely, cataphresis, or downstep, which is a compression of pitch range induced by a lexical accent. Downstep is blocked across an ip boundary, and thus the ip can be considered the prosodic domain of downstep. Since the [-lexical tone] dialects, by definition, have no lexical accents and thus no phonological downstep as defined by Pierrehumbert and Beckman (1988), non-application of downstep may not be a good indicator of reset in these dialects. This poses a problem for defining reset and thus the ip in the [-lexical tone] dialects. Further research is clearly needed to investigate evidence of phrasing
marked by pitch range modification (for relevant discussion regarding the Tokyo dialect, see Kubozono 2007; Venditti et al. 2008).

I have shown that in the one-pattern accent dialects, more than one Word can be prosodically grouped together into a single ip, whose boundary is marked by pitch reset. The question of interest, then, is whether the accentless dialects also have prosodic phrasing at the ip level. Phrasing at the ip level in the accentless dialects is suggested by Maekawa (1997) and Kori (2006b) for the Kumamoto dialect and is confirmed by data collected in the current study in the Omuta dialect. Fig. 9 and Fig. 10 both show a pair of utterances from the Sleepy set (3). (Note that the f0 movement observed on the final syllable of the last AP is due to a boundary pitch movement (BPM), which contributes to the pragmatic interpretation of utterance or phrase, e.g. questioning, continuation, etc. For a description of BPMs in the Tokyo dialect, see Venditti et al. 2008.) Fig. 9 shows that in the Omuta dialect, prosodic phrasing occurs at the AP level in the same manner as that in the Yamagata and Takahagi (accentless) dialects. Nevertheless, the same utterances spoken by a different speaker in Fig. 10 show that, despite the absence of a right-branching syntactic boundary between them, the first two Words are not grouped together into a single AP. Instead, the peak of the second AP in this utterance is considerably reduced, suggesting that the first two Words, each of which constitutes an AP, are grouped together at the ip level.

<<FIG. 9 AROUND HERE>>

<<FIG. 10 AROUND HERE>>

The question of how prosodic phrasing at the AP and ip levels differs functionally is left open in this chapter. In any case, both one-pattern accent and accentless dialects exhibit phrasing at the ip level.
3.8 Tonal variability at the phrase level

In the typology I propose, [-lexical tone] dialects are divided into two groups solely based on a parameter concerning intonational phrasing, i.e. [+multiword AP], without needing to take into account the consistency in tonal patterning that many previous researchers have resorted to for the classification (i.e. ‘accentless-as-inconsistent view’, see Section 3.3). In order to make this argument conclusive, I investigate the tonal variability exhibited by various dialects at the phrase level. Specifically, I show that the AP has a large range of variability in its tonal shape not only in the accentless dialects but also, to a lesser extent, in at least one [+lexical tone] dialect.

Phrase-level tonal variability in the accentless dialects is reported by Maekawa (1994b, 1997; 1999) for the Kumamoto (accentless) dialect. While the AP in this dialect basically has a rise-fall tonal pattern, this shape shows considerable variability in three areas. First, the alignment of the f0 peak varies; as shown schematically in (9a), the f0 peak can appear on virtually any syllable within the AP. The varying peak location has been called a ‘wandering high’ (Maekawa 1994b, 1999). Second, a high plateau can be observed between the rise and fall (9b). Maekawa (1994b, 1999) accounts for this pattern by assuming the spreading of a high tone. Finally, the fall at the end of the phrase can be unrealized (9c). Henceforth, the three phenomena listed above will be called, respectively, ‘H wandering’, ‘H spreading’, and ‘L deletion’.

(9) Variations in the tonal shape of the AP in the Kumamoto dialect (Maekawa 1994b)

\[ \begin{align*}
&\text{a. H wandering} \quad \text{b. H spreading} \quad \text{c. L deletion} \\
\end{align*} \]
Further research is needed to examine whether the variability shown in (9) is observed in all the accentless dialects. Some accentless dialects might show a greater or lesser degree of variability in the tonal shape than the Kumamoto dialect. But at the very least, data from the Koriyama (accentless) dialect do show evidence of H wandering. Fig. 11 shows contours of six tokens of the same wh-question ‘What can you see?’ produced by a single speaker (the wh-element is the first Word). Each utterance consists of a single AP, and the rise at the end of the AP is due to a BPM. The location of the f0 peak in the AP varies from one token to another.

H spreading in other accentless dialects can also be observed in Fig. 6 (Yamagata), Fig. 7 (Takahagi), and Fig. 8 (Omuta) above. The two panels in Fig. 12 below contrast utterances without (left) and with (right) H spreading in the same wh-question in the Imaichi (accentless) dialect, produced by a single speaker (the wh-element is in the first Word). Both utterances are composed of a single AP with a BPM on its final syllable. The pattern of the AP in this dialect is also a rise-fall, although the rise tends to be more concave. In the utterance in the left panel, f0 continuously rises from the beginning of the AP to around the middle of the third Word, then falls towards the AP-final syllable. In the utterance in the right panel, a sharp initial f0 rise ends around the beginning of the second Word, followed by a high (slightly rising) plateau that persists until about the middle of the final Word.

L deletion is also observed in the Imaichi dialect. Fig. 13 shows two tokens of the same wh-question produced by the same speaker (the wh-element is the second Word).
Both utterances consist of two APs with a BPM at the end of the second AP. They differ in that the f0 fall seen in the second AP in the left panel is not found in the in the right panel. Maekawa (1994a, 1994b, 1999) analyzed L deletion in the Kumamoto dialect as the result of the interaction between f0 peak alignment variations and the occurrence of a BPM. The current data from the Imaichi dialect are consistent with his analysis; the existence of a BPM appears to be a necessary (but not sufficient) condition on L deletion.

Are these variations in the tonal shape of the AP the surface manifestations of different underlying intonational structures? If so, what ‘meanings’ do these different structures convey? These questions were partially addressed in Maekawa’s (1999) study of the Kumamoto dialect, in which it was shown that the peak alignment difference affects the perceived politeness of the utterance, with a later alignment yielding more ‘polite’ judgments. In any case, further research is necessary concerning variations in the tonal shape of the AP, and the questions raised above are left open in this chapter.

What is of direct relevance to the current discussion is whether such variations in the tonal shape of the AP are a characteristic only of the accentless dialects. If so, then this phrase-level tonal variability could be regarded as the definitional property of the accentless dialects in the intonational typology. I claim that such variability is in fact not confined just to the accentless dialects. In the Tokyo dialect, for example, the peak of the f0 rise marking the beginning of the AP (see 4.2) can be aligned either earlier or later, depending on aspects pertaining to the speaker’s attitudes and intentions, e.g. emphasis, suspicion, and admiration (Kawakami 1957a; Maekawa & Kitagawa 2002). The f0 rise is at times delayed so drastically that its peak is found in the following Word
(for a similar observation, see Beckman 1986: 101-102). These alignment variations are analogous to the H wandering seen in accentless dialects as in (9a). Furthermore, phenomena similar to H spreading (9b) and L deletion (9c) are reported in the Tokyo dialect by Sugahara (2003) and Gussenhoven (2004), respectively.

While tonal variability in the AP is not limited to the accentless dialects, it should be noted that the variability in these dialects may be more extensive than that in other types of dialects. Still, this larger range of variability is predictable from the typological parameters [±lexical tone] and [±multiword AP], and thus need not be regarded as an independent parameter. It is plausible to assume that lexical tonal contrasts limit the range of variability in the [+lexical tone] dialects. Furthermore, the [-multiword AP] dialects are assumed to have a smaller range of variability than the [+multiword AP] dialects, as APs in the former dialects cannot contain more than one Word each, and thus must be generally smaller in size (in terms of the number of Words they contain) than APs in the latter dialects. The accentless dialects, having parameters [-lexical tone, +multiword AP], are predicted to exhibit the largest degree of tonal variability.

The assumptions described above predict that the AP’s tonal shape should exhibit some variability in the one-pattern accent dialects ([±lexical tone, ±multiword AP]), although to smaller degree than in the accentless dialects ([±lexical tone, ±multiword AP]). This prediction appears to be borne out. Sato (2005) and Igarashi (2006) report that focus induces later f0 peak alignment in APs in the Kobayashi (one-pattern) dialect. More drastic variations in peak location are reported in Kishie (1996), which reveals that in the Miyakonojo (one-pattern accent) dialect, the peak of the AP can be located on non-final syllables.
3.9 Summary

In this section, I proposed a parameter to distinguish one-pattern accent dialects from accentless dialects. The dialects without lexically-specified tones ([−lexical tone]) are further classified into two categories by a parameter [±multiword AP], indicating the presence or absence of APs containing more than one Word. The variability observed in tonal shape can be derived by the parameters [±lexical tone] and [±multiword AP], and does not serve as a classification property on its own.

4. Classification of dialects with lexical tones

4.1 Classification of the [+lexical tone] dialects by the parameter [±multiword AP]

To complete the intonational typology being proposed, this section describes intonational phrasing in dialects with lexically-specified tone ([+lexical tone]). The description here is limited to few dialects; namely, the Tokyo, Fukuoka, Osaka and Kagoshima dialects. It will be shown that the [+lexical tone] dialects can also be divided into two categories by the parameter [±multiword AP], and that the proposed typology can be generalized across dialects.

4.2 Tokyo dialect

The Tokyo dialect has two types of words in its lexicon, traditionally called ‘accented words’ and ‘unaccented words’; the former exhibit tonal patterns that contain a steep f0 fall, or ‘accent’, while the latter show patterns that have no such fall (Fig. 14). The presence or absence of the accent is an underlying property of a given lexical item and is thus not predictable. The location of the fall in accented words, known as the ‘accented mora’, is also unpredictable (Miyata 1928; Hattori 1954; Kawakami 1957b;
McCawley 1968; Uwano 1989, 1998a; Poser 1984; Kubozono 1988; Pierrehumbert and Beckman 1988; and many others). Thus, the Tokyo dialect has lexically-specified tone and as such is a member of the [+lexical tone] dialects.

<<FIG. 14 AROUND HERE>>

The f0 rise observed at the beginning of both unaccented and accented words as in Fig. 14 has long been regarded as a property of the Word (e.g. Jibo 1929; Hattori 1954; see also Kori 2004). However, Kawakami (1957b) successfully formulated an account in which the rise marks the beginning not of a Word but of a prosodic phrase which can contain more than one Word. Kawakami’s formulation is reminiscent of Bruce’s (1977) seminal finding of ‘phrase accent’ in Stockholm Swedish, which also had been previously regarded as a property of the word. Bruce’s conception of phrase accent was applied to the Pierrehumbert’s (1980) theory of English intonation, which in turn contributed to the development of the AM model of Tokyo Japanese (Poser 1984; Pierrehumbert and Beckman 1988). Just as Kawakami did in the 1950s, Pierrehumbert and Beckman posited a prosodic phrase (i.e. the AP) that can contain more than one Word. Thus the Tokyo dialect is also included in the group of [+multiword AP] dialects.

Multiword APs in the Tokyo dialect are shown in Fig. 15, illustrating utterances from the Apple set (2). The words constituting the utterance are all lexically unaccented. In the left panel, the first two Words are grouped together into one AP marked by a single rise-fall pattern (multiword AP), whereas in the right panel the syntactic boundary between these two Words prevents such a grouping.

<<FIG. 15 AROUND HERE>>

4.3 Fukuoka dialect
Hayata’s (1985) extensive description of the Fukuoka dialect, though it is aimed at describing mainly morphophonological tonal phenomena, strongly suggests that the intonational system of this dialect is quite similar to that of the Tokyo dialect. First, the Fukuoka dialect has lexically-specified tone ([+lexical tone]): words are divided into two groups, accented words (having a sharp f0 fall) and unaccented words (having no such fall), with the location of the fall in the former group being unpredictable (i.e. underlying). One of the differences from the Tokyo dialect, however, is that the Fukuoka dialect has no lexical tonal contrasts for verbs and adjectives: accent placement in verbs and adjectives is determined by default rules, which ordinarily assign the accent on the syllable containing the penultimate mora.

Multiword APs in the Fukuoka dialect are most notably observed in wh-questions. As reported first by Hayata (1985) and extensively described by Kubo (1989), the wh-element consistently deletes all lexical accents within its scope (see also Smith 2005). Fig. 16 depicts a non-wh-question (left) and a wh-question (right) in the Fukuoka dialect (with a BPM on the final syllable of the utterance). Both utterances have five Words: the second, third and fourth Words contain an accented word and the final Word consists of a verb.

A sequence of accentual falls is observed in the non-wh-question (left), in which the first Word is the lexically accented indefinite pronoun dareka ‘someone’. In contrast, all of the accentual falls are deleted in the wh-question (right), in which the first Word contains the lexically unaccented wh-element dare ‘who’ and the Words are all grouped into a single multiword AP. Such consistent deletion of lexical accents within the wh-scope in Japanese is, to my knowledge, reported only for the Fukuoka dialect. (An
equivalent phenomenon is found in some dialects of Korean, see Gim 1970; Kubo 2005).

Data showing multiword APs in other contexts in the Fukuoka dialect is limited in published works, but based on my observations it can arguably occur in nearly the same contexts as in the Tokyo dialect. This and the wh-question data presented above indicate that the Fukuoka dialect is a [+multiword AP] dialect.

### 4.4 Osaka dialect

The Osaka dialect has a much more complex tonal system than the Tokyo dialect. The two dialects are similar in that they both have two groups of words specified in the lexicon: accented words (with a sharp f0 fall) and unaccented words (with no fall). Furthermore, as in the Tokyo dialect, the presence or absence of an accent on a given word and the location of the f0 fall in the accented words are lexically-specified and thus unpredictable in the Osaka dialect. The major difference between these two dialects is that words in the Osaka dialect have an additional paradigmatic tonal contrast at the beginning: words can begin either with a high tone (‘high-beginning words’) or with a low tone (‘low-beginning words’). This lexically-specified choice of tone at the beginning of a word is traditionally referred to in the literature as ‘register’ (Ikeda 1942; Wada 1957; Kori 1987; Nakai 2002; see also Pierrehumbert and Beckman 1988). The register distinction is for the most part independent of accent (although there are a few gaps in the paradigm of possible combinations); as shown in Fig. 17, both high-beginning words and low-beginning words can be either accented or unaccented. (Low-beginning unaccented words also exhibit a rise on the final mora). Needless to say, Osaka dialect is a member of the [+lexical tone] dialects.
Pierrehumbert and Beckman (1988), reanalyzing Kori’s (1987) data of Osaka dialect, point out that tonal patterns of Words are much better preserved than in the Tokyo dialect and suggest the absence of ‘dephrasing’ (see 3.6 above) in Osaka. Similar observations can also be found in other studies (Yamada et al. 1982; Sugito 2001), suggesting the absence of multiword APs in this dialect.

Another line of evidence against the existence of multiword APs in Osaka comes from Uwano’s (1989) analysis of the Kyoto dialect, which has virtually the same intonational system as Osaka. According to Uwano, the beginning of a prosodic phrase containing a group of Words is marked by a large rise, and the absence of a phrasal boundary is signaled by a reduced rise. The ‘rise’ here means 1) the f0 rise at the beginning of a high-beginning word, 2) the f0 rise up to the accented mora in a low-beginning accented word, and 3) the f0 rise up to the final mora in a low-beginning unaccented word. It is clear that the prosodic boundary in question is being marked by pitch range modification of the AP (phrasing at the ip level), and the AP itself cannot contain more than one Word.

Evidence laid out in past descriptions suggests that the Osaka dialect exhibits no multiword APs, and thus it is one of the [-multiword AP] dialects.

4.5 Kagoshima dialect

As mentioned briefly in 3.2, the Kagoshima dialect is known to have a ‘two-pattern accent’ system (Hirayama 1951; Kibe 2000). The words in this dialect are classified into two groups according to their surface tonal pattern, generally called Type A (with an f0 fall) and Type B (with an f0 rise). Thus, along with the Tokyo and Osaka dialects,
the Kagoshima dialect is a member of the [+lexical tone] dialects. The location of the fall or rise is completely predictable: both start on the penultimate syllable and end on the final syllable of the Word. That is, the f0 is high on the penultimate syllable in Type A words, whereas it is high on the final syllable in Type B words (Fig. 18).

If the Kagoshima dialect exhibited multiword APs, then resulting contours would resemble those schematized in (10). In (a), the Type A pattern spans two Words, while in (b), the Type B pattern spans them.

(10) Hypothesized contours of multiword APs in the Kagoshima dialect

Contours such as those in (10) have not been documented in the impressionistic descriptions of word-level prosody in the Kagoshima dialect (Hirayama 1951; Kibe 2000). No multiword AP is reported in the study of Ishihara (2004) either, in which tonal patterns of single and combined Words are acoustically analyzed in a large set of controlled production data. Thus, the Kagoshima dialect is a member of the [-multiword AP] dialects.

4.6 Summary

I have shown that not only the [-lexical tone] dialects but also the [+lexical tone] dialects can be further divided into two groups based on the parameter [±multiword AP].
The complete intonational typology for Japanese dialects proposed in this chapter is summarized in Table 3.

<<TABLE 3 AROUND HERE>>

With regard to intonational phrasing, the Tokyo and Fukuoka dialects are similar to the accentless dialects, while the Osaka and Kagoshima dialects are similar to the one-pattern accent dialects. This generalization across dialects with and without lexical tones has not been accomplished by previously proposed typologies.

5. Conclusion

This goal of this chapter was to form a typology of the intonational systems of Japanese dialects, which have been sparsely investigated in previous literature. In the proposed typology, Japanese dialects were classified into four categories by means of two binary parameters. One is [±lexical tone], which distinguishes dialects with and without lexically-specified tone. The other is [±multiword AP], which distinguishes dialects based on whether they allow Accentual Phrases to span more than one Word.

Some previous researchers have noticed that Japanese dialects differ depending on how tones are used for prosodic phrasing: some dialects use tonal patterns primarily for marking a Word, whereas others use them primarily for marking a group of Words. They attribute this cross-dialectal difference to lexical tonal contrasts: namely, the dialects with a large number of lexical tonal contrasts (such as the Osaka dialect) exploit tones for marking of a Word, while the dialects with a small number of lexical tonal contrasts (such as the Tokyo dialect) exploit it for marking of a group of Words (Uemura 1997; Sugito 2001). The view of this sort, however, misses the fact that lexical tonal contrasts are more or less independent from dialect-specific prosodic phrasing. A
particularly striking piece of evidence for this independence comes from the one-pattern accent dialects, which have no lexical tonal contrasts at all, yet the AP nevertheless does not mark a group of Words. This independence can be captured by the typology proposed here, in which the parameters [±lexical tone] and [±multiword AP] are defined separately. This in turn supports the separation of these parameters postulated in the typology.

The remainder of the current section briefly describes issues for future research that concern dialect-specific relations between syntactic branching and intonational phrasing. Sugito (2001) argues that differences in syntactic branching are realized as differences in intonational phrasing in the Tokyo dialect, whereas this is not the case in the Osaka dialect. My data also support this observation. In Fig. 19, which shows utterances from the Apple set (2) in the Osaka dialect, no considerable difference between the two branching structures is observed. Kori (1989, 2006a), in contrast, argues that the mapping does exist in Osaka as well, realized as pitch range expansion at the right-branching syntactic boundary (i.e. phrasing at the ip level), though phonetic differences between the two phrasing structures are smaller in Osaka than in Tokyo.

Does the Osaka dialect have the same syntax-intonation mapping seen in the Tokyo dialect? If so, then how do these dialects differ in the prosodic realization of syntactic branching? Although sufficient evidence has not yet been presented to answer these questions, it is at least evident that there is a cross-dialectal difference in the prosodic realization of syntactic branching.

It might be reasonable to hypothesize here that the typological parameter [±multiword AP] is behind the cross-dialectal difference at issue. In a [-multiword AP] dialect such
as that of Osaka, the absence of a right-branching syntactic boundary cannot be signaled by the prosodic grouping at the AP level. It can be signaled only by the grouping at the ip level. This may yield the results showing the ambiguity of—or at times the absence of—the syntax-intonation relation investigated here. In contrast, in a [+multiword AP] dialect such as that of Tokyo, the mapping can be achieved, conceptually, at both the AP- and ip-levels. This may give rise to clearer and more consistent mapping.

The results reported so far do not contradict the hypothesis above. Studies on the [+multiword AP] dialects reveal fairly consistent branching-phrasing mapping; such dialects include the Tokyo (Uyeno et al. 1979; Kubozono 1988; Fujisaki 1989; Selkirk and Tateishi 1991; Kori 1997), Fukuoka (Igarashi 2007b), Kumamoto (accentless) (Maekawa 1990, 1997; Kori 2006b), and Fukui (accentless) dialects (Maekawa 1990, 1997) (for other accentless dialects, see 3.6 and 3.7). The [-multiword AP] dialects reportedly exhibit ambiguous syntax-intonation mapping. In the Kobayashi (one-pattern accent) dialect ([+multiword AP]), a right-branching boundary causes a pitch range expansion (i.e. marking an ip-level boundary) in some cases, but in other cases it does not (Igarashi 2006, see also Fig. 8 in this chapter). To my knowledge, there have been no studies to date which have investigated this aspect of the syntax-intonation mapping in the Kagoshima dialect ([+multiword AP]), but at the very least, my pilot work (unpublished) suggests that the dialect exhibits ambiguous mapping at best.

Without further research, any discussion on this topic remains merely speculative; nevertheless, the hypothesis proposed above is certainly worth exploring. If it is validated, then the intonational typology I have proposed for Japanese dialects would receive independent support.
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Appendix
Figures

Fig. 1. Goshogawara dialect: Inagaki-GEN local.gang-DAT punch-PASS-PAST, ‘He was punched by the local gang in Inagaki Village,’ with focus on the first Word (left) and second Word (right), produced by a female speaker born in 1984. Data from Igarashi (2007a).

Fig. 2. Fukuoka dialect: Apple set (2), Nagano-GEN grandmother-ABL apple-ACC receive-PAST-NMR-SFP (left: left-branching) and Nagano-LOC grandmother-ABL apple-ACC receive-PAST-NMR-SFP (right: right-branching), produced by a female speaker born in 1984. Data from Igarashi (2007b).
Fig. 3. Fukoka dialect: Sleepy set (3), Jiro-NOM read-CNJ sleepy become-PRES-NMR-SFP (left: left-branching), and Jiro-TOP drink-CNJ sleepy become-PRES-NMR-SFP (right: right-branching), produced by a female speaker born in 1985. Data from Igarashi (2007b).

Fig. 4. Kobayashi (one-pattern accent) dialect: Saburo-NOM Akemi-ACC punch-PAST ‘Saburo punched Akemi’ uttered with broad focus (left) versus narrow focus on the second Word ‘Akemi’ (right), produced by a female speaker born in 1983.
Fig. 5. Koriyama (accentless) dialect: Saburo-NOM Akemi-ACC punch-PAST-NMR-COP-SFP ‘Saburo punched Akemi’ uttered with broad focus (left) versus narrow focus on the second Word (right), produced by a female speaker born in 1957.

Fig. 6. Yamagata (accentless) dialect: Sleepy set (3), Jiro read-PRES-CNJ sleepy become-PRES (left: left branching) and Jiro-TOP drink-PRES-CNJ sleepy become-PRES (right: right branching), produced by a male speaker born in 1932.
Fig. 7. Takahagi (accentless) dialect: Apple set (2), Nagano-GEN grandmother-ABL apple receive-PAST-SFP (left: left branching), and Nagano-LOC grandmother-ABL apple receive-PAST-SFP (right: right branching), produced by a female speaker born in 1954.

Fig. 8. Kobayashi (one-pattern accent) dialect: Apple set (2), Nagano-GEN grandmother-ABL apple-ACC receive-PAST-SFP (left: left-branching), and Nagano-LOC grandmother-ABL apple-ACC receive-PAST-SFP (right: right-branching), produced by a male speaker born in 1988. Data from Igarashi (2005).
Fig. 9. Omuta (accentless) dialect: Sleepy set (3), Jiro-NOM read-PRES-CNJ sleepy become-PRES-SFP-SFP (left: left-branching) and Jiro-TOP drink-PRES-CNJ sleepy become-PRES-HNR-SFP-SFP (right: right-branching), produced by a female speaker born in 1980.

Fig. 10. Omuta (accentless) dialect: Sleepy set (3), Jiro-NOM read-PRES-CNJ sleepy become-PRES-SFP (left: left branching) and Jiro-TOP drink-PRES-CNJ sleepy become-PRES-HNR-SFP (right: right branching), produced by a female speaker born in 1980, who is different from the speaker in Fig. 9.
Fig. 11. ‘H wandering’ in the Koriyama (accentless) dialect: what-NOM see-POT-PRES-NMR-COP-SFP ‘What can you see?’, produced by a single female speaker born in 1957. Six tokens normalized along the temporal scale are overlaid.

Fig. 12. H spreading in the Imaichi (accentless) dialect: where-GEN gang-DAT punch-PASS-PAST ‘What gang were you punched by?’, produced by a female speaker born in 1984.
Fig. 13. L deletion in the Imaichi (accentless) dialect: Odawara-GEN who-DAT punch-PASS-PAST ‘Who in Odawara City were you punched by?’, produced by a female speaker born in 1984.

Fig. 14. Tokyo dialect: unaccented word *omiyage* ‘souvenir’ (left), and accented word *onigiri* ‘rice ball’ with accent on the second mora /ni/ (right), produced by the author born in 1976.
Fig. 15. Tokyo dialect: Miyajima-GEN aunt-ABL apple-ACC receive-PAST ‘I received an apple from the aunt in Miyajima Town.’ (left: left branching) and Miyajima-LOC aunt-ABL apple-ACC receive-PAST ‘In Miyajima Town, I received an apple from a woman.’ (right: right branching), produced by the author born in 1976.

Fig. 16. Fukuoka dialect: anyone Naoya-COM Nagano-LOC maple-ACC see-PAST-NMR ‘Did anyone see maples with Naoya in Nagano?’ (left: non-wh-question) and who-NOM Naoya-COM Nagano-LOC maple-ACC see-PAST-NMR ‘Who saw maples with Naoya in Nagano?’ (right: wh-question), produced by a female speaker born in 1984.
Fig. 17. Osaka dialect: high-beginning unaccented word *norimono* ‘vehicle’, high-beginning accented word with accent on the third mora (*-no-*) *naminori* ‘surfing’, low-beginning unaccented word *omiyage* ‘souvenir’, and low-beginning accented word with accent on the third mora (*-gi-*) *onigiri* ‘rice ball’, produced by a female speaker born in 1968.

Fig. 18. Kagoshima dialect: Type A word ‘candy’ followed by a Type B word: candy-*ACC* see ‘I see candy.’ (left), and the Type B word ‘rain’ followed by another Type B word: rain-*ACC* see ‘I see rain.’ (right), produced by a male speaker born in 1983.
Fig. 19. Osaka dialect: Apple set, Nagano-GEN grandmother-ABL apple receive-PAST (left: left-branching), and Nagano-LOC grandmother-ABL apple receive-PAST (right: right-branching), produced by a female speaker born in 1968. All Words consist of a high-beginning accented word with the accent on the first mora.
### Tables

**Table 1: Classification of the [-lexical tone] dialects**

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**Table 2: Classification of the [-lexical tone] dialects**

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<th>[±multiword AP]</th>
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</thead>
<tbody>
<tr>
<td>One-pattern accent</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Accentless</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

**Table 3. Intonational typology of Japanese dialects**

<table>
<thead>
<tr>
<th>Dialects</th>
<th>[±lexical tone]</th>
<th>[±multiword AP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-pattern accent</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Accentless</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Osaka, Kagoshima</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Tokyo, Fukuoka</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
Footnotes

1 The abbreviations are as follows: ABL = ablative, ACC = accusative, CNJ = conjugative, COM = comitative, COP = copula, DAT = dative, GEN = genitive, HNR = honorific, LOC = locative, NMR = nominalizer, NOM = nominative, PASS = passive, PAST = past, POT = potential, PRES = present, SFP = sentence-final particle, and TOP = topic.

2 While verbal endings in our speech examples can differ across dialects, it does not affect their syntactic branching and focal structure under consideration.

3 Based on this diachronic consideration, Hirayama (1951) calls the one-pattern accent system the ‘integrated one-pattern accent’ as opposed to the ‘disintegrated one-pattern accent’, the latter referring to the accentless system.

4 While the syllable vs. mora debate is not relevant to our discussion, it should be noted that the minimal tone-bearing unit in the one-pattern accent dialects and the Kagoshima dialect is, unlike Tokyo, Osaka, and Fukuoka dialects, the syllable rather than mora (Shibata 1962; Hayata 1985). The minimal tone-bearing unit in the accentless dialects is also assumed in this chapter to be the syllable.

5 Uwano (1998b: 186) captures this cross-dialectal difference in (5) when he says that the tonal pattern in the Miyakonojo (one-pattern accent) dialect has the demarcative function (for a Word) because it marks the end of a Word, whereas that in the Sendai (accentless) dialect does not.

6 A point of interest concerning the results of Venditti et al. (1996) is that the AP in Chonnam Korean can contain two or more Words. Since the Chonnam Korean lacks lexically-specified tone, it can be thought of as having the features [-lexical tone, +multiword AP] and thus it is classified into the same typological class as that of the
accentless dialects of Japanese. Seoul Korean (Jun 1998) can be thought of as having
the features [-lexical tone, +multiword AP].

7 It should be pointed out here that the proposed dichotomy might be compatible with
the idea couched in three-line footnote of Uwano (1989: 202, fn. 2). He points out the
possibility that these dialects might be classified by whether tone is assigned for each
Word (one-pattern accent) or for a unit containing a group of Words (accentless). To
some degree, my redefinition of the two types of [-lexical tone] dialects may be seen as
an extension of his idea.