Dephrasing in Kobayashi Japanese: Is it a reality?

Yosuke Igarashi

Japan Society for the Promotion of Science, National Institute for Japanese Language

yosuke.igarashi@kokken.go.jp

1. Introduction

In majority of Japanese dialects including Tokyo and Osaka, pitch difference is used to distinguish one word from another. These dialects have pitch specification in the lexicon (lexical tone, henceforth), and are generally classified into the 'accented' (*yuakusento*) dialects. At the same time, not a few of the dialects lack lexical tones. These include for example, Sendai, Utsunomiya, Fukui, and Kumamoto. They are usually called 'accentless' (*muakusento*) dialects [17, 19, 20].

It is an accepted wisdom that the Morokata dialects, including Miyakonojo, Nichinan and Kobayashi (spoken in Miyazaki prefecture) are typologically distinguished from the accentless dialects, though they do not have lexical tones. The most widespread distinction between the accentless dialects and the Morokata might be a feature of 'pitch pattern fixation'. In the former the pitch pattern of *bunsetsu*, or prosodic word (ω) presents variability, whereas in the latter it is always fixed. Specifically, a ω in Morokata always shows a pitch rise on the final syllable, exhibiting a 'high-tailed' (*odaka*) pattern. Thus, Morokata has been typologically classified as the 'one-pattern' (*ikkei*) dialects [2]. In other words, this dialectal group can be considered to have a *fixed accent system*.

The present study reports the results of an experiment which investigates prosodic characteristics in Kobayashi Japanese spoken by the younger generation. The first goal is to examine whether the mapping between prosody and syntax (or pragmatics), which most of Japanese dialects are reported to possess, can be observed in this fixed accent dialect. The second goal is to confirm whether Kobayashi can safely be classified as a fixed accent dialect.

2. Prosody of the fixed accent dialects

2.1 Relation between Prosody and syntax

The following three syntactic (or pragmatic) items are reported to show a clear correlation with prosody in Japanese dialects. They will be exploited in the experiment to see if they are mapped onto prosody of a fixed accent dialect as well.

(1) Branching structure

In Tokyo (an accented dialect), a syntactic boundary with a right-branching structure brings about 'metrical boost', or pitch range expansion [10]. The sentence with a left-branching structure, on the other hand, does not cause pitch range reset but it is merged into a single prosodic unit. Henceforth, prosodic unit which serves as the domain of pitch range will be called *intonational phrase* (*ip*). This mapping has been reported for the accented dialects such as Tokyo [6] Osaka [5], Hirosaki [7], Goshogawara [3], as well as for accentless dialects such as Fukui [11], Kumamoto [12, 8]. The mapping between branching structure and *ip* in Osaka is in fact controversial. Sugito [18] argues against it, suggesting dialect-specific difference in prosody-syntax mapping.

(2) Wh question

In Tokyo, a wh word compresses the pitch range for the following words and thus all the words within the scope of the wh word constitute a single *ip* [11]. This effect is similar to that of focus discussed below. The mapping between wh question and *ip* is reported for the accentless dialects such as Fukui and Kumamoto as well [11, 12], though the merging of words into an *ip* is slightly different from Tokyo. Reportedly, prosodic phrasing due to a wh word accompanies deletion of lexical tones in Fukuoka (an accented dialect) [9].

(3) Focus

Focus is one of the main factors that influence on intonation in many dialects. In Tokyo, the effects are similar to those of wh word: pitch range is reset at the beginning of the focused word and is compressed in the post-focal words [13]. That is, focus introduces an *ip*-boundary at the beginning of the focused word and the post-focal words are merged into the same *ip*. These phenomena are reported for the accented dialects such as Tokyo [6], Osaka [5], Kagoshima [7], Goshogawara [3], as well as for the accentless dialects such as Kumamoto [8]. Sato [16] found the similar effect of focus for Kobayashi (a fixed accent dialect), remarking that the final rise does not occur in the post-focal words. Since it is crucial for typological status of the dialect, her description will be discussed below in a little depth.

2.2 Absence of dephrasing in the fixed accent dialects

The well-established view that Morokata has a fixed accent system is challenged by the fact these dialects can show what I refer to as 'high pitch dislocation', i.e. a phenomenon where the pitch peak is retracted from the ω-final syllable. Miyakonojo exhibits high pitch dislocation when the ω consists of an auxiliary verb *zya* [22]. Sato [16] reports for Kobayashi that, when a ω includes a sentence-final particle (*shujoshi*) such as *o*, the pitch peak is dislocated to the syllable preceding the particle: *muzekatta-o* 'It was cute.' is pronounced as *muzekattáo*, instead of *muzekattaó* (where acute accent indicate high pitch). While what triggers high pitch dislocation should be examined in depth, it is at least clear that even in the fixed accent dialects, pitch pattern is not fixed in a strict sense.

The absence of a strictly constant pitch pattern in Morokata might make the difference between these dialects and the accentless dialects ambiguous. In fact, the distinction between the two systems has been found controversial by some researchers [14, 22]. Crucially, even in the accentless dialects pitch pattern is by no means random. As Maekawa [11, 12] demonstrated, accentless dialects such as Kumamoto and Fukui exhibit regularity in pitch patterns of some prosodic unit, albeit 'degree of freedom' seems large in the accentless dialects [12, 8].

In my view, consistency in pitch pattern itself can not serve as the defining feature for the fixed accent dialects. The reliable classificatory feature should be found in *prosodic phrasing*. The typological distinction on the basis of prosodic phrasing is actually suggested by Uwano [19, 21]. To simplify, let us introduce three terms, '*basic pattern*', '*accentual phrase*' and '*dephrasing*'. 'Basic pattern' is the pitch pattern that a given dialect exhibits. In case of Morokata, it is the high-tailed pattern. 'Accentual phrase' (*α*) refers to a prosodic unit defined by the basic pattern.

In Morokata, the basic pattern is always mapped onto a single *ω* as schematically illustrated in Figure 2.1 (a). In other words, a *ω* necessarily constitutes an *α*. According to Uwano [21], the grouping of two or more *ω*'s into a single *α*, like in (b), is prohibited in Morokata. The phenomenon, in which two or more *ω*'s are merged into a single *α*, is referred to as 'dephrasing'. Thus, the fixed accent dialects have a constraint that prohibits dephrasing.

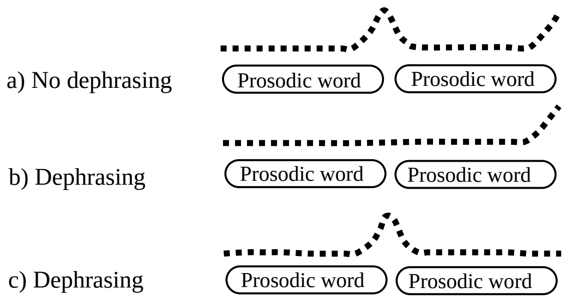

Figure 2.1: Schematic illustration of dephrasing. Dotted lines indicate Fundamental frequency (F0) contours.

Accentless dialects, on the contrary, lack this constraint: while two or more *ω*'s can constitute an independent *α*, as in (a), each of them can also be merged into a single *α*, as in Figure 2.1 (b). In fact, Fukui (an accentless dialect), whose basic pattern is similar to Morokata (i.e. the high-tailed pattern), exhibits both (a) and (b): two *ω*'s can constitute its own *α*, e.g. (zjirowá) (nomutó) 'If Jiro drinks', as well as they can be dephrased, e.g. (ziro:ga yomutó) 'If Jiro reads' [11].

Hence, in my view, 'presence or absence of dephrasing', or [±dephrasing] is the defining feature between the two systems.

However, dephrasing in Morokata dialects has been previously reported. Sato [16] states that when a certain constituent of a sentence is focused, the final rise is not realized in post-focal words: the pitch in the post-focal words falls until the end of the sentence. Inspection of the fundamental frequency (F0) contours presented in Sato's work confirms her description. After the focused *ω*, there are no visible F0 peaks corresponding to the final rises. While a notion of prosodic phrasing is not introduced to Sato's work, her description can be illustrated as in (2.1), where focused constituents are marked in boldface and an *α* is represented by brackets.

(2.1) a. (na.o.mi.wá) (ma.fu.raa.ó) (**an.dá**z.zyai.yo)
b. (na.o.mi.wá) (**ma.fu.raa.**ó an.daz.zyai.yo)
c. (**na.o.mi.**wá ma.fu.raa.o an.daz.zyai.yo)
'Naomi knitted a muffler'

(b) and (c) are examples of dephrasing in combination with high pitch dislocation. (This is the case (c) of Figure 2.1.) Thus, Sato's work strongly suggests the existence of dephrasing in Morokata, which, in my view, serves as evidence against the classification of Morokata as the fixed accent dialect.

However, the question still remains: are pitch rises indeed deleted? Crucially, the fact that the *ω*-final rises are not visually detected in the F0 contour can not necessarily mean that they are deleted. It would be equally possible that the high-tailed pattern actually survives, though the physical manifestation might have deviated from its canonical form. Importantly, invisibility of the rise on the F0 contour can also be accounted for by the *undershoot* view. Since the number of syllables of the post-focal *ω*'s is small in Sato's work, there would be articulatory constraint to realize the rise under strongly compressed pitch range. If so, we should expect some remaining trace of the high-tailed pattern to be found in post-focal *ω*'s with large number of syllables. This will be examined in the experiment.

3. Experiment

3.1 Method

The aims of the experiment are 1) to examine whether Kobayashi shares prosody-syntax mappings with most of other Japanese dialects, and 2) to see whether dephrasing ever occurs in this dialect.

The general approach of this experiment is a 'simulation method'. First, the sentences with controlled syntactic structures and discoursal contexts were prepared. Second, subjects were asked to translate the sentences into their own dialect. Third, the subjects were asked to read the translated sentences for multiple times as if they were talking to their friends. Produced utterances were recorded and analyzed on the basis of measurement of the extracted F0.

3.1.1 Speech materials

Six sets of test sentences were designed. They were originally written in standard Japanese, and then translated by the three native speakers of Kobayashi (the participants). The test sentences are shown in Table 3.1.

Dataset I, II and III were designed to investigate effect of branching structure. For each dataset, (a) contained left-branching structure while (b) had right-branching structure. The sentences in Dataset I, II and IV were adopted from [11] and those in Dataset III form [5].

In Dataset I (a), an adjective *aoi* modifies an immediately following noun *yane*, and *aoi yane* as a whole modifies a noun *ie*. In (b), *aoi* modifies *ie*, passing through an adjective *dekai*, which also modifies *ie*. The sentences in Dataset II were so-called non-thematic sentence (a) and thematic sentence (b). The difference between these sentences can also be generalized to their branching structure [11]. In (a) a proper noun *ziro:* marked by a case particle *ga* serves as the subject for the predicate of the embedded clause *yon*, but does not serve as the subject for the predicate of the main clause *nemu naru*. In (b), on the other hand *ziro:* marked by a particle *wa* serves as the subject for the predicates of the embedded clause *non* and main clauses *nemu naru*. In Dataset IV (a) a proper noun *nagano* followed by a particle *no* modifies an immediately following noun *ba:cyan*, where as in (b) the *nagano* followed by a case particle *de* modifies a predicative verb *morota*.

Dataset IV examines effect of wh word. It contained (a) a wh question and (b) a yes-no question.

Dataset V-VI was designed to investigate the effect of focus. In order to replicate Sato's results, the sentences in Dataset V were adopted from [15]. Focused constituents are marked in boldface. All the sentences were in short dialogues, in which focus falls on the boldfaced constituent. For example, a sentence (a) was preceded by 'Was **Hanako** given an apple?'. Notice that in the test sentences of Dataset VI, each of the post-focal *ω*'s contains different numbers of syllables. This was done in order to validate the *undershoot* account for the invisibility of the post-focal *ω*'s. Just as for Dataset V, all the sentences were in short dialogues: for instance, sentence (a) was preceded by 'Is **Yanagida** behind a vegetable shop?'.

Table 3.1: Test sentences.

Dataset I		
(a)	*aoi yanen iega miyuggayo.*	I see a house with a blue roof.
(b)	*aoi dekai iega miyuggayo.*	I see a blue big house.
Dataset II		
(a)	*ziro:ga yonto nemu naru.*	I get sleepy if Jiro reads.
(b)	*ziro:wa nonto nemu naru.*	Jiro gets sleepy if he drinks.
Dataset III		
(a)	*Naganon ba:cyankai ringoo mororaiyo.*	I was given an apple by a grandmother in Nagano.
(b)	*Naganode ba:cyankai ringoo mororaiyo.*	In Nagano I was given an apple by a grandmother.
Dataset IV		
(a)	*Nanga miyukke?*	What do you see?
(b)	*Nanka miyukke?*	Do you see anything?
Dataset V		
(a)	***Naomiga** ringoo morotazzyaiyo.*	**Naomi** was given an apple.
(b)	*Naomiwa **ringoo** morotazzyaiyo.*	Naomi was given an **apple**.
(c)	*Naomiwa ringoo **morota**zzyaiyo.*	Naomi was **given** an apple.
Dataset VI		
(a)	***Minamida**ga yaoyano urani ottoyo.*	**Minamida** is behind a vegetable shop.
(b)	***Minamida**ga meganeyano urani ottoyo.*	**Minamida** is behind an optician's shop.
(c)	***Minamida**ga omiyageyano urani ottoyo.*	**Minamida** is behind a souvenir shop.
(d)	***Minamida**ga miyagemonoyano urani ottoyo.*	**Minamida** is behind a souvenir shop.

3.1.2 Subjects, recording, and analysis procedure

Three speakers participated in the experiment, one 21 year-old female (FT) and two 18 year-old males (MH, MN). All subjects were born in Kobayashi and spent their life there before they came to study in Tokyo at the age 18. Subjects read entire set of the translated sentences five or six times. The recordings were made using Marantz PMD 660 and saved onto a Compact Flash memory card at a 48 kHz sampling rate. Recorded materials were analyzed using the Praat software [1].

3.2 Results

3.2.1 Branching structure (Dataset I-III)

Figure 3.1 illustrates F0 contours for Dataset I. Notice that high pitch dislocation occurs in the last *ω*, because it contained final particles -*ga* and -*yo*.

It is shown in Figure 3.1 that in left-branching sentence (a), the F0 peaks for each *ω* exhibit an iterative downtrend throughout the sentence (except the final one with the same F0 level as the preceding peak). In right-branching sentence (b), on the other hand, the downtrend is blocked at the boundary between first and second *ω*'s, i.e. pitch range is reset.

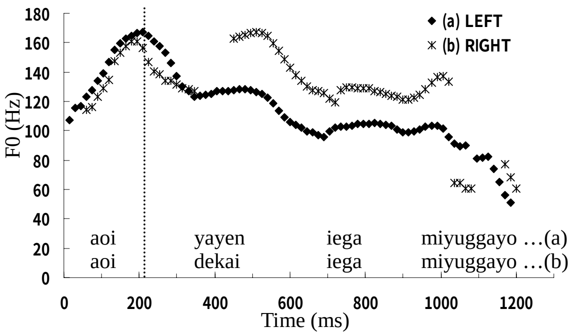

Figure 3.1: F0 contours for Dataset II. Aligned at the boundary between the first and second ω's, which is indicated by vertical line. Subject is MH.

F0 values for the first peak (P1) and second peak (P2) were measured. The relative P2 height, i.e. P2 value divided by P1 value for both conditions were also measured and *t*-tests were conducted for each subject separately (Table 3.2). The results showed that the difference was significant for all the subjects.

Thus, the results for Dataset I suggest a mapping between branching structure and *ip* for Kobayashi.

Table 3.2: Height of P2 relative to P1 for Dataset II. Means and individual analyses. Standard deviations in parentheses.

Subject	Left	Right	*df*	*t*	*P*
MH	.828(.045)	1.000(.095)	8	-3.661	=0.006**
MN	.907(.028)	.959(.032)	10	-2.934	=0.015*
FT	.814(.057)	1.179(.129)	8	-5.816	<0.001***

The F0 contours for Dataset II are shown in Figure 3.2. Note that the final rise of the last *ω naru* is not observed. While this might be taken as a case of dephrasing, it can also be accounted for by undershooting of the final rise, since the last *ω* had only two syllables. This will not be discussed further.

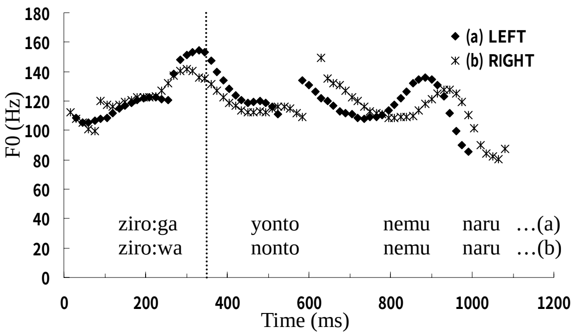

Figure 3.2 F0 contours for Dataset III. Aligned at the boundary between the first and second ω's, which is indicated by vertical line. Subject is MN.

From Figure 3.2 we see that the results are not as obvious as Dataset I. P2 is lower than the P1 for both conditions, i.e. a clear pitch range reset is not found. At the same time, the similar effect to Dataset I is also observed: namely the F0 difference between P1 and P2 is larger in left-branching structure (a) than in right-branching structure (b). The F0 difference is, however, brought about not by the lowering of P2 but by the raising of P1.

As for Dataset I, relative P2 height was measured and *t*-tests were run, for each subject separately (Table 3.3). The results revealed a significant difference only for MN and FT.

Thus, the results for Dataset II did not strongly confirm the mapping between branching and *ip*.

Table 3.3: Height of P2 relative to P1 for Dataset III. Means and individual analyses. Standard errors in parentheses.

Subject	(a) Left	(b) Right	*df*	*t*	*P*
MH	.783(.050)	.878(.092)	8	-2.038	=0.076
MN	.842(.059)	.917(.035)	10	-2.649	=0.024*
FT	.857(.088)	1.034(.132)	8	-2.499	=0.037*

Figure 3.3 illustrates F0 contours for Dataset IV. Note that there is an F0 rise at the end of the utterance. This is due to the utterance-final rising boundary tone, which is not relevant to our discussion. The peak of the final ω was dislocated to the penultimate syllable because of a final particle -*yo*.

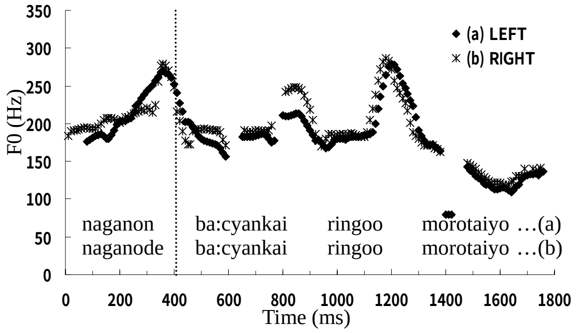

Figure 3.3 F0 contours for Dataset IV. Aligned at the boundary between the first and second ω's, which is indicated by vertical line. Subject is FT.

We see from the Figure 3.3 similar effects as in Dataset I: namely, in left-branching sentence (a) P2 is considerably lowered compared with P1, while in right-branching sentence (b) F0 difference between P1 and P2 is small. Again, relative P2 height was measured and *t*-tests were conducted for each subject separately (Table 3.4). While the tendency for lowering of P2 in (a) can be seen for all the subjects, *t*-tests revealed that the difference was significant only for FT. Again, strong evidence for mapping between syntactic branching and prosodic phrasing was not found for Dataset III.

Table 3.4: Height of P2 relative to P1 for Dataset IV. Means and individual analyses. Standard deviations in parentheses.

Subject	(a) Left	(b) Right	*df*	*t*	*P*
MH	.791(.053)	.837(.020)	8	-1.830	=0.105
MN	.893(.022)	.921(.029)	10	-1.871	=0.091
FT	.787(.052)	.852(.026)	8	-2.496	=0.037*

To sum up, there was a tendency towards pitch range reset at the syntactic boundary with a right-branching structure. The results were, however, not as clear as has been reported for other dialects. It can, therefore, be concluded that mapping between branching structure and prosodic phrasing was not strongly confirmed in Kobayashi.

3.2.2 Wh question (Dataset IV)

Figure 3.4 shows F0 contours for Dataset IV[1]. Notice that high pitch dislocation is observed in the second ω because of an final particle -*ke*.

It can be seen from Figure 3.4 that in wh question (a), there is no visible peak in the second ω, whereas in yes-no question (b) there are clearly two peaks of almost the same level. Again, relative P2 height for both conditions was measured and *t*-tests were conducted for each subject separately (Table 3.5). When there was no peak (case of wh question), F0 value in the middle of the final syllable of the first ω was defined as P1. The *t*-tests revealed that P2 was significantly lower for wh question than yes-no question for all speakers.

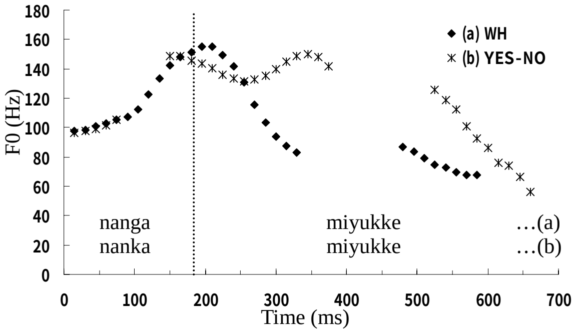

Figure 3.4: F0 contours for Dataset VI. Aligned at the boundary between the first and second ω's, which is indicated by vertical line. Subject is MH.

Table 3.5: Height of P2 relative to P1 for Dataset I. Means and individual analyses. Standard deviations in parentheses.

Subject	(a) WH	(b) YES-NO	*df*	*t*	*P*
MH	.546(.056)	.910(.105)	10	-7.008	<0.001***
MN	.778(.121)	.928(.060)	10	-2.716	=0.022*
FT	.599(.073)	.978(.067)	8	-8.533	<0.001***

In summary, pitch range compression for the ω's following a wh word was confirmed. The results are consistent with other Japanese dialects such as Tokyo: wh question is comprised of a single *ip*, while yes-no question is divided into two *ip*'s. We are left with the question of whether the final rise of the second ω is deleted. In other words, does dephrasing happen in Kobayashi, as Sato [16] reports for sentence with focus?

3.2.4 Focus 1 (Dataset V)

Figure 3.5 illustrates normalized F0 contours[2] of all the repetitions of Dataset V, for each subject separately[3]. Notice, first, that the F0 rise at the end of the utterance is due to the rising boundary tone. Also notice that the peak of the third ω is seen in the antepenultimate syllable -*ta*- (high pitch dislocation), because the last two syllables are a combination of an auxiliary verb and a final particle.

From Figure 3.5 we see that in case with focus on *mayumi* (a), clear final rise is observed only in the first (focused) ω. The F0 in the post-focal ω's falls from the peak of preceding ω towards the end of the sentence. When *ringo* is focused (b), the final rise is clearly seen in both the first (pre-focal) and second (focused) ω's, with the second peak being higher than the first. That is, pitch range is reset at the beginning of the focused ω. The F0 in the post-focal ω, again, falls toward the end of the sentence. In case with focus on *morota* (c), the rise occurs in all three ω's. The second peak is lower than the preceding peak, while the third (focused) peak is higher than the second. That is,

[1] The first peak is delayed in wh question. The peak delay for the focused constituent was found by Sato [b]. The present result showed that this effect was true of wh question as well.

[2] The normalization was done using the following procedure. First, each utterance was partitioned into four parts along a temporal scale. The first and second ω's corresponded to the first and second parts respectively, while the third ω was divided into fourth and fifth parts. The boundary between the last two parts was defined at the syllable offset of -*ta*- of *morota*. Second, a mean contour was computed by taking thirty F0 points within each part and averaging them across the repetitions.

[3] The peak of the focused ω can be aligned later relative to the ω-boundary. This is consistent with Sato's observation on peak delay [16].

pitch range is reset at the beginning of the focused ω.

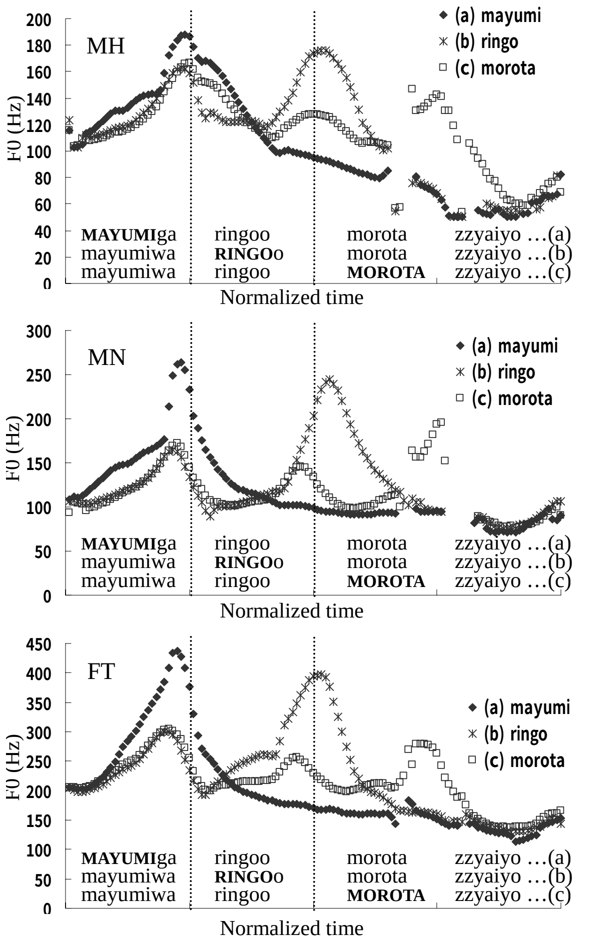

Figure 3.5: Normalized F0 contours of all repetitions for Dataset V. Vertical line indicates ω-boundary. The third ω was divided into two parts (see footnote 2).

In order to confirm the preceding observation, I measured F0 value of the first (P1), second (P2) and third (P3) peaks. When there was no clear peak (in case of post-focal ω's), F0 value of middle of the ω-final syllable (for P1 and P2) or of the third syllable *-ta-* (for P3) was identified as the peak. Then I conducted one-way analyses of variance (ANOVAs), for each subject separately, with F0 value of P1, P2 or P3 as the dependent variable and FOCUS LOCATION (three levels; *mayumi*, *ringo*, *morota*) as the independent variable (Table 3.6).

Table 3.6: Means and individual analyses for Dataset V. Standard deviations in parentheses.

Sub.	Focus location (a) *mayumi*	(b) *ringo*	(c) *morota*	d*f*	*F*	*P*
F0 value of P1 (the peak of the first ω)						
MH	188.8 (9.1)	164.0 (4.3)	167.6 (5.8)	2,17	25.483	<0.001***
MN	276.6(36.7)	161.2(29.1)	173.9(23.3)	2,18	30.654	<0.001***
FT	439.0(29.7)	302.4(21.0)	305.1(20.0)	2,16	66.291	<0.001***
F0 value of P2 (the peak of the second ω)						
MH	98.3 (3.8)	176.9 (5.5)	129.4(12.8)	2,17	138.911	<0.001***
MN	102.3 (4.3)	252.1(41.0)	151.1(15.9)	2,18	62.607	<0.001***
FT	179.2(14.6)	407.1(37.4)	261.7(32.4)	2,16	89.108	<0.001***
F0 value of P3 (the peak of the third ω)						
MH	72.6 (8.2)	76.2 (6.5)	142.6(24.3)	2,17	43.586	<0.001***
MN	95.4 (6.3)	98.1(15.1)	194.4(41.4)	2,18	33.624	<0.001***
FT	159.9(10.6)	162.3 (5.9)	279.6(69.3)	2,16	16.764	<0.001***

The ANOVAs revealed that for all peaks (P1, P2, P3), there were significant effects of FOCUS LOCATION for all the subjects. *Post hoc* Bonferroni test revealed that for all subjects, P1 is significantly higher (P<0.001) in focus on *mayumi* than *ringo* and *morota*. This is the difference between the focused ω and the pre-focal ω. For P2, there were significant differences (P<0.01 or better) between all three categories for all subjects, according to Bonferroni test. Thus, we see a gradation in height from the focused ω via the pre-focal ω to the post-focal ω. Finally, Boferroni test showed that for all subjects, P3 is significantly higher (P<0.001) in focus on *morota* than *mayumi* and *ringo*, indicating the difference between focused ω and post-focused ω.

In summary, the results revealed that focus induces pitch range expansion of focused ω and compression of post-focal ω's. That is, focused ω introduces an *ip*-boundary, and post-focal ω's are merged into the *ip*. In the post-focal ω's, clearly identifiable F0 peaks could not be found. Thus, the present results quantitatively confirm Sato's observation [16].

The residual question is whether Sato's claim on dephrasing is correct: are final rises ever deleted in the post-focal ω's? It must be remarked in this regard that we can see a turning point around the third syllable of the post-focal ω *morotazzyaiyo* in case of (b) and (c). This point can possibly be taken as a trace of the (dislocated) final rise, which is due to target *undershooting* in the strongly compressed pitch range. If this interpretation is correct, then there should be no dephrasing in Kobayashi. This possibility will be further explored in 4.2.3.

3.2.3 Focus 2 (Dataset VI)

Since a reliable quantitative method of analysis for Dataset VI could not be found, its interpretation was based on visual inspection of normalized F0 contours. Figure 3.6 depicts normalized F0 contours of the first post-focal ω for Dataset VI, for each subject separately[4]. Data for FT was deleted because she failed to manipulate focus.

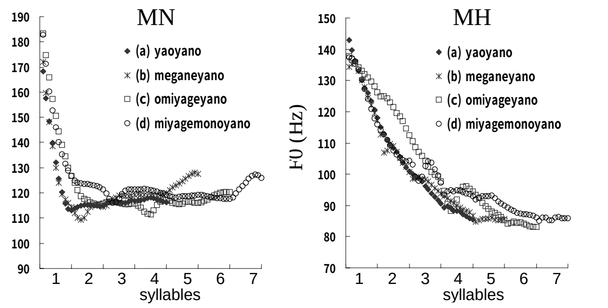

Figure 3.6: Normalized F0 contours for the first post-focal ω for all repetitions of Dataset VI. MN (left) and MH (right).

It can be seen that MN does not show dephrasing. The F0 movement is consistent with the basic 'high-tailed' pattern of Kobayashi. Thus, for MN focus does *not* delete the final rise of the post-focal ω's.

The result for MH, on the contrary, favors the *dephrasing* view. F0 gradually falls from the peak of the preceding ω without exhibiting a noticeable final rise. On close inspection of the F0 contours, however, we notice that there are two turning points in the contours. One of the turning points is around the third syllable, where we see the contours start to diverge (they show a considerable overlap until this point). The other is around the final syllable, where F0 values are quite similar for all conditions. In the *undershoot* view, the first and

[4] The normalized contour was computed by taking ten F0 points within each syllable and averaging them across the repetitions.

second turning points can be regarded as a trace of the initial low and the final rise of the high-tailed pattern.

The presence of the turning point at the final syllable of the first post-focal ω becomes clear, if all the contours are aligned at the boundary between the first and second post-focal ω's, as shown in Figure 3.7. This figure illustrates normalized F0 contours[5] of three successive post-focal ω's for NH (all repetitions). Clearly, all the contours converge on each other at the end of the first post-focal ω.

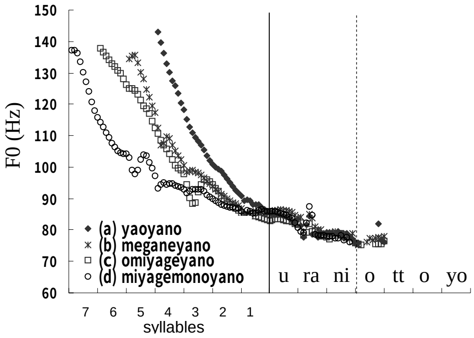

Figure 3.7: Normalized F0 contours for the post-focal ω's for all the repetitions of Dataset VI. Aligned at the boundary between the first post-focal ω and the second (solid line). Subject is MH.

Further, we see from Figure 3.7 an almost complete overlap of F0 contours of the following two ω's, probably because the number of ω's and of their syllables is same for all conditions.

It is clear from the observation so far that the ω-boundaries affect the F0 movement of the post-focal ω's. In the *undershoot* theory, this specific F0 movement can be taken as a trace of the high-tailed pattern. If undershoot is a viable theory, then the final rise cannot be deleted, instead it is support for the absence of dephrasing in Kobayashi.

The results for Dataset VI can be summarized as follows. First, focus does not necessarily delete the final rise. Unlike Sato's claim [16], there is not a one-to-one relation between focus and dephrasing. Second, some trace of the high-tailed pattern can be detected on the post-focal ω's. While the second result may not serve as strong evidence against dephrasing, the results as a whole are compatible with the *undershoot* view: the final rise does occur even in the post-focal ω's, though it is undershot under strong pitch range compression. Therefore, there is no strong support for dephrasing in Kobayashi and the dialect can safely be classified as a fixed accent dialect.

4. Conclusion

The present study reported the results of an experiment which investigated prosodic characteristics in Kobayashi Japanese spoken by younger generation. The results revealed that 1) a mapping between syntactic branching structure and prosodic phrasing is not as clear as has been reported for other Japanese dialects, 2) just as in Tokyo, wh word compresses pitch range of the following words 3) pitch range expands on the focused word concurrently with a compression on the post-focal words, and 4) even in the post-focal words, some trace of the high-tailed pattern can be detected. From result (4) it is concluded that no strong support for dephrasing can be found in Kobayashi and that this dialect can safely be regarded as a fixed accent dialect.

A final remark on the absence of clear mapping between branching and prosodic phrasing; it is tempting to speculate that this parameter would result from a correlation with another independent parameter of the fixed accent dialects, i.e. [-dephrasing]. It would be of typological interest to assume that the absence of this prosody-syntax mapping in Osaka, suggested by Sugito [18], would also be due to [-dephrasing] in this (accented) dialect. This interpretation is, of course, merely speculative without further data.

Acknowledgements

I would like to thank Kikuo Maekawa, Akira Utsugi, Kumiko Sato and Caroline Menezes, for helpful discussion. Any errors or omissions are, of course, my own.

Reference

[1] Boersma, Paul and David Weenink (2005) Praat: doing phonetics by computer, ver. 4.3.19 (Computer program).

[2] Hirayama, Teruo (1951) *Kyushu hogen oncho no kenkyu*. Gakkainoshishinsha.

[3] Igarashi, Yosuke (2005) A preliminary analysis of the relation between lexical pitch accent and prosodic phrasing in Goshogawara Japanese. *Proceedings of the 20th General Meeting of the Phonetic Society of Japan*, 141-146.

[4] Kaji, Shigeki (1998) (ed.) *Proceedings of the symposium Cross-Linguistic Studies of Tonal Phenomena, Tonogenesis, Typology, and Related Topics*.

[5] Kori, Shiro (1989) Hatsuwa no oncho o kitei suru yoin: nihongo intoneeshonron. *Yoshizawa Norio kyoju tsuito ronbunshu*, pp. 116-127.

[6] Kori, Shiro (1997) Nihongo no intoneeshon –kata to kino–. In: *Nihongo onsei 1: Akusento intoneeshon rizumu to poozu*, Sanseido, pp. 169-202.

[7] Kori, Shiro (2006a) Inritsu tokucho no chiikisa. *Inritsu to onseigengojohoshori*, Maruzen, pp. 50-64.

[8] Kori, Shiro (2006b) Kumamotoshi oyobi shuhen no hiteikei akusento hogen ni okeru gooncho to onchoku no keisei. *Journal of the Phonetic Society of Japan*, 10-2, 43-60.

[9] Kubo, Tomoyuki (1989) Fukuoka hogen no, dare, nani to no gumonshi o fukumu bun no pitchi pataan. *Kokugogaku* 156, 51-70.

[10] Kubozono Haruo (1988) *The Organization of Japanese Prosody*. Ph.D. dissertation, Edinburgh University.

[11] Maekawa, Kikuo (1990) Muakusentohogen no intoneeshon (shiron). *Studies in phonetics and speech communication* IV, 87-110.

[12] Maekawa, Kikuo (1997) Akusento to intoneeshon –akusento no nai chiiki. *Nihongo onsei 1: Shohogen no akusento to intoneeshon*. Sanseido, pp. 97-122.

[13] Pierrehumbert, Janet and Mary Beckman (1988) *Japanese tone structure*. MIT Press.

[14] Ramsey, S. Robert (1998) Comments on Professor Uwano Zendo's "Classification of Japanese accent systems". In: Kaji (1998), pp. 179-182.

[15] Sato, Kumiko (2005a) Morokata hogen ni okeru 'ikkei akusento' no jitsugen ni tsui te –fookasu to no kakawari ni chuumoku shi te– *Proceedings of the 131st general meeting of the Linguistic Society of Japan*, 66-71.

[16] Sato, Kumiko (2005b) Kobayashi hogen no 'ikkei akusento' wa dono yo ni jitsugen suru ka. *Kyushu University Papers in Linguistics*, vol. 25-26 (combined number), 163-187.

[17] Shibata, Takeshi (1961) Nihongo no akusento *Kokugogaku* 21.

[18] Sugito, Miyoko (2001) Bunpo to nihongo no akusento oyobi intoneeshon –tokyo to osaka no baai–. *Bunpo to onsei*, Kuroshio, pp. 197-210.

[19] Uwano, Zendo (1989) Nihongo no akusento. *Koza nihongo to nihongokyoiku 2: Nihongo no onsei, on'in,* vol. 1. Meiji Shoin, pp. 178-205.

[20] Uwano, Zendo (1998a) Classification of Japanese accent systems, In: Kaji (1998), pp. 151-178.

[21] Uwano, Zendo (1998b) A reply to Professor Ramsey's comments. In: Kaji (1998), pp. 183-186.

[22] Yamaguchi, Koyo (1998) *Nihongo hogen ikkei akusento no kenkyu*. Hitsuji Shobo.

[5] The normalization method is the same as Figure 3.6, except that the ter-syllabic ω *ottoyo* was divided into four parts with a closure of the geminate *-tt-* as one part for the sake of convenience.