Focus and Monotony

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- Fukuoka Japanese
  - Spoken around Fukuoka City, Fukuoka Prefecture
  - Also known as Hakata dialect
Both “Initial Lowering” and falling lexical pitch accents (≈ Tokyo Japanese)

We tentatively assume here that Fukuoka has a similar prosodic organization to Tokyo (suggested by Hayata 1985).

One crucial difference from Tokyo: The tonal patterns for **verbs** and **adjectives** are **not lexically contrastive**
(19) Wh-focus in Fukuoka (Uaaa + Verb)

- All Wh-words are unaccented
- All post-focal words, accented or not, are realized as a flat high contour (Kubo 1989) (with a gradual fall presumably due to declination)

\[\text{dare-ga na'oya-to na'gano-de mo'mizi-o mita-to-φCOMP?} \]
\[\text{who-NOM Naoya-with Nagano-in maple-ACC saw-NZR-COMP} \]

'Who saw maples in Nagano with Naoya?'
(20) Post-focal restraint in Fukuoka

**Fall & Rise**

“Avoid starting either radical fall or radical rise of the pitch in each post-focal prosodic word”
(21) Phonetic restraint of fall and rise in Fukuoka

- *Rise: \( H \) of the LH (rise) is phonetically restrained
- *Fall: \( L \) of the HL (fall) is phonetically restrained

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\[ \text{U u + Verb} \]

\[
\begin{array}{ccc}
\text{dare-ga} & \text{kinoo} & \text{nonda-to-COMP}\uparrow \\
\text{who-NOM} & \text{yesterday} & \text{drank-NZR-COMP} \\
\end{array}
\]

‘Who drank yesterday?’

\[
\begin{array}{c}
(\langle \text{dare-ga} >_ω )_φ (\langle \text{kinoo} >_ω )_φ (\langle \text{nonda-to} >_ω )_φ \]_u \\
L_u \ H_φ \\
(\L_φ ) (\H_φ ) \\
(\L_φ ) (\H_φ ) \\
\L_φ \ H_u \\
\end{array}
\]
(21) Phonetic restraint of fall and rise in Fukuoka

- *Rise: H of the LH (rise) is phonetically restrained
- *Fall: L of the HL (fall) is phonetically restrained

We have not adopted the deaccenting (& dephrasing) analysis of Fukuoka

We have experimental results that may indicate that deaccenting does not take place in the WH domain
The sequence of H tones in the post-focal domain does NOT induce 'upstep' in Fukuoka.

This contrasts with some African languages in which H-tones are upstepped in some tonal contexts (e.g., Yoruba (Connel and Ladd (1990))).
5. Further Motivation
5. Further Motivation

- Post-focal monotony shows up as a flat contour in the dialects we have examined so far (Tokyo and Fukuoka)

- We will observe and examine below:
  - A dialect that exhibits a post-focal flat contour even it has the prosodic structure quite different from Tokyo or Fukuoka
  - A dialect in which post-focal monotony is not realized as a flat contour
5.1 Kobayashi Japanese

- **Kobayashi Japanese:**
  - Spoken in Miyazaki Prefecture
  - Known as one of the “one-pattern accent” dialects (Hirayama 1951; Sato 2005; Igarashi 2006)
In the so-called "one-pattern accent" dialects, pitch is **not lexically idiosyncratic**

- Pitch is not used to distinguish one word from another

- All prosodic words exhibit the same fixed tonal pattern (Hirayama 1951)
(24) Tone patterns in Kobayashi Japanese

Kobayashi Japanese (along with well-known Miyakonojo Japanese) is considered as one of the "one-pattern accent" dialects (e.g. Sato 2005)

All prosodic words exhibit a rise from the penultimate to final syllables ("high-tailed pattern")

Saburo:-ga akemi-o nagut-ta.
Saburo-NOM Akemi-ACC punched
'Saburo punched Akemi',
as answer to "What happened?"
L and H are linked to **prosodic word** \((\omega)\)

- The L is linked to its left edge
- The H is linked to its right edge

No need to postulate prosodic phrase \((\varphi)\)

… since the dialect has no dephrasing (Igarashi 2007)
(25) Sato (2005): Focus deletes H tones

Sato (2005): **Focus** deletes post-focal H tones in **Kobayashi**

naomi-ga ring-o moro-ta-t-zyai-yo
Naomi-NOM apple-ACC received-COMP-COP-PRT

‘Naomi received apples as a gift.’

Focus on:

Naomi, ‘Naomi’ ringo ‘apple’, morota ‘received’

Data from Igarashi (2006)
(26) Igarashi's (2006) experiment with longer post-focal words

L and H are clearly observed in the post-focal prosodic word.

The post-focal L H in Kobayashi are not deleted but only weakened.
(27) Wh-focus in Kobayashi

nan-ga   miyuk-ke?
what-NOM visible-COMP
'What can you see?'

- Similar ‘continuous fall’ is observed
- But we assume that LH tones of the post focal word is not deleted
(28) Post-focal restraint in Kobayashi

*Rise

“Avoid starting radical rise of the pitch in each post-focal prosodic word”

The same as Tokyo Japanese
The H of the "high-tailed" patterns (LH) becomes phonetically restrained.

"What can be seen in the mountain?"

\[ \text{WH} \]

\[ \text{nan-ga} \quad \text{oyama-ni} \quad \text{miyuk-ke} \]

This results in the 'continuous fall' (or 'flat low') in the post-focal domain.
The proposed system of post-focal restraint predicts the existence of two other types of dialects:

<table>
<thead>
<tr>
<th></th>
<th>*Rise</th>
<th>*Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>√</td>
<td>φ</td>
</tr>
<tr>
<td>B</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>C</td>
<td>φ</td>
<td>√</td>
</tr>
<tr>
<td>D</td>
<td>φ</td>
<td>φ</td>
</tr>
</tbody>
</table>

Dialects C (*Fall) are predicted to exist.

Koriyama Japanese may be an example.
5.2 Koriyama Japanese

- **Koriyama Japanese:**
  - Spoken in Fukushima Prefecture
  - Known as one of the “accentless” dialects (Uwano 1998; Igarashi 2006)
(31) “Accentless” dialects

- Pitch is not lexically idiosyncratic, just as the "one-pattern accent" dialects.
- Researchers often reported that words do not exhibit any systematic pitch patterns (e.g. Hirayama 1968).
- A closer examination reveals, however, that prosodic phrases in such dialects in fact exhibit some specific and consistent tonal pattern (Maekawa (1994b) for Kumamoto)
- “Wandering high”
  - The peak of the tonal pattern has freedom to be realized on virtually any syllable within the domain (Maekawa 1994b, for Kumamoto; Igarashi 2007, for Koriyama)
Koriyama Japanese is regarded as one of the "accentless" dialects.

Just as Kumamoto Japanese, prosodic phrases exhibit the rise-fall pattern (Igarashi 2007).

**Wandering high**

The peak of the rise-fall pattern may appear on virtually any syllable (Igarashi 2007).

*nani-ka miek-ka-i? 'Can anything be seen?'* something visible-COMP_Y/N-PRT
Prosodic words are not associated with any tone

The rise-fall pattern is due to

\[ \text{L}_u \text{H}_\varphi \text{L}_\varphi, \text{ or } \text{L}_\varphi \text{H}_\varphi \text{L}_\varphi \]

\[
\left[ \left( < \text{nani-ka} > \omega \right)_\varphi \left( < \text{mieki-ka-i} > \omega \right)_\varphi \right]_u
\]

The H of the prosodic phrase (H_\varphi) can be freely linked to any syllable within the prosodic phrase.

This captures the "Wandering High" phenomenon.
Unaccented words in Tokyo have exactly the same phrasal tonal specification (H_φ and L_φ) as in Koriyama.

But H_φ is specified to be linked to (generally) the second mora in its domain, resulting in more stable initial lowering.

Tokyo Japanese

φ( ω < o mi ya ge ... ‘sougenir’

Koriyama Japanese

φ( ω < o mi ya ge ...
φ( ω < o mi ya ge ...
φ( ω < o mi ya ge ...

“Wandering high” phenomenon
(34) Focus prosody in Koriyama

- Non-Wh focus: (Answer to "Who did Saburo punch?"

Saburoo-ga  akemi-koto  buttobasita-n-φCOMP-da-wai.
Saburo-NOM  Akemi-NLR  punched-NLR-COMP-COP-PRT

'It is Akemi who Saburo punched.'

- Pitch **continuously rises** from focal domain to post-focal domain, and then falls down.

(Igarashi 2007)
(34) Focus prosody in Koriyama

- **Wh focus**

  \[ \text{nani-ga} \quad \text{mie-n-\text{\textendash}COMP-da-i?} \]
  \[ \text{what-NOM} \quad \text{visible-NLR-COMP-COP-PRT} \]

  'What can be seen?'

  (Igarashi 2007)

- Pitch **continuously rises** from focal to post-focal domains, and then falls down.
Focus prosody in Koriyama

"Wandering High" in focus prosody

What can be seen?

The H tone has freedom to be realized among different tokens
Let us explore…

“Avoid starting radical fall of the pitch in each post-focal prosodic word”
(36) Post-focal restraint of fall in Koriyama

- Fall is restrained

This fall is outside the post-focal domain and thus not restrained.
"Wandering high" can be ascribed to the presence of more than one H in the Wh-domain, any one or more of which may be freely linked to any syllable in the prosodic phrase as the locus of the tonal peak.

- If the first Hφ in is targeted, the pattern (c) is realized.
- If the second Hφ in is targeted, the pattern (a) is realized.
- If both first Hφ and second Hφ are targeted, the pattern (b) is realized.

\[ \text{nani-ga} \quad \text{mie-n-dai} \]

**Major “wandering” patterns**
Crucial assumptions involved in the *Fall analysis for K.J.
- The post-focal domain starts immediately after the salience of [F1]
- The post-focal domain ends at [F2] (= phonetically empty COMP) as part of a prosodic word
— It is not clear how plausible these assumptions are
If the *Fall analysis of Koriyama is plausible, we have confirmed all three types of dialects that the proposed system of post-focal restraint predicts to exist:

<table>
<thead>
<tr>
<th></th>
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<th>*Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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</tr>
<tr>
<td>C</td>
<td>φ</td>
<td>√</td>
</tr>
<tr>
<td>D</td>
<td>φ</td>
<td>φ</td>
</tr>
</tbody>
</table>
Post-focal restraint for Koriyama:

“Avoid starting radical rise of the pitch in each post-focal prosodic word”

; where *Rise can be realized either phonetically (tonal reduction) or phonologically (dephrasing).
(41) **Phonetic realization of *Rise in Koriyama**

- H of the LH is restrained, leaving phrasing structure intact

\[
\begin{array}{ccc}
& < \text{nani-ga} >_\omega & < \text{mie-n-da-i} >_\omega \\
L_u & H_\phi & \boxed{L_\phi(H_\phi)} & H_u
\end{array}
\]

- The "wandering" pattern (c) is realized

\[
\text{nani-ga} \quad \text{mie-n-dai}
\]

Wandering (c)
(41) **Phonetic realization of *Rise in Koriyama**

- L of the LH is restrained, leaving phrasing structure intact

\[
\begin{align*}
\text{L}_u & \quad \text{H}_\phi \\
\text{H}_\phi & \quad \text{(L}_\phi\text{)H}_\phi \\
\text{(L}_\phi\text{)H}_\phi & \quad \text{L}_\phi \quad \text{H}_u
\end{align*}
\]

- The "wandering" pattern (b) is realized

\[
\begin{align*}
\text{L}_u & \quad \text{H}_\phi \\
\text{H}_\phi & \quad \text{(L}_\phi\text{)H}_\phi \\
\text{(L}_\phi\text{)H}_\phi & \quad \text{L}_\phi \quad \text{H}_u
\end{align*}
\]

\(\text{Wandering (b)}\)
The boundaries of prosodic phrases in the post-focal domain are deleted, with prosodic words within the entire Wh-domain being dephrased into a single prosodic phrase:

\[
\left[\begin{array}{c}
\text{< nani-ga }>_{\omega} \\
L_{u} \ H_{\varphi}
\end{array}\right]_{\nu} \left[\begin{array}{c}
\text{< mie-n-da-i}>_{\omega} \\
L_{\varphi} \ H_{u}
\end{array}\right]_{\nu}
\]

The "wandering" pattern (a) is realized:

Wandering (a)
(42) Phonological realization of *Rise in Koriyama

- The boundaries of prosodic phrases in the post-focal domain are deleted, with prosodic words within the entire Wh-domain being dephrased into a single prosodic phrase.

\[
\left[ \begin{array}{c}
L_u \\
H_\phi
\end{array} \right] \xrightarrow{< \text{nani-ga} >_\omega} \xrightarrow{< \text{mie-n-da-i} >_\omega} \left[ \begin{array}{c}
L_\phi \\
H_u
\end{array} \right]
\]

- The "wandering" pattern (b) is realized.

\[
\begin{array}{c}
\text{nani-ga} \\
\text{mie-n-dai}
\end{array}
\xrightarrow{\text{Wandering (b)}}
\]
Merit and demerit of the alternative account

Merit:
- All the dialects can be uniformly regarded to have *Rise.
  (Fukuoka Japanese is considered as a single exceptional dialect having both *Rise and *Fall)

Demerit:
- The factors that cause dephrasing remain unidentified, just as in P&B’s (1988) approach for Tokyo Japanese
Experiment on “deaccenting”
in Fukuoka Japanese

See Appendix:
7.1 Post-focal accents in Fukuoka Japanese: deleted or not
It has been reported for Fukuoka Japanese that lexical pitch accents in the post-focal domain are deleted at all (Hayata 1985; Kubo 1987). We have assumed that the accents are not eliminated but just weakened (restrained).

The post-focal deaccenting suggests that Post-Focal Restraint *Fall should be realized not phonetically but phonologically.

Are post-focal accents completely eliminated?

No quantitative analyses have hitherto been made to confirm the post-focal deaccenting.

We conducted a production experiment to see whether post-focal accents are indeed deleted.
To see whether post-focal accented words trigger **downstep** (=pitch range compression induced by pitch accent).

Test sentences had the following structure,
- WH + A + A + verb (**AA combination**)
- WH + U + U + verb (**UU combination**)

...pitch of the verb was measured.

If the post-focal accents are **NOT** deleted, then pitch of the verb in **AA** should be lower than **UU** (downstep).
Test sentences: Three datasets.

- e.g. Dataset I

<table>
<thead>
<tr>
<th>AA</th>
<th>Nan-ga nomimo’no-no na’ka-ni aru-to-φ COMP?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What-NOM</td>
<td>drink-GEN</td>
</tr>
<tr>
<td>middle-in</td>
<td>exist-NLZ-COMP</td>
</tr>
<tr>
<td>‘What is there in the drink?’</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UU</th>
<th>Nan-ga otonari-no niwa-ni aru-to-φ COMP?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What-NOM</td>
<td>neighbor-GEN</td>
</tr>
<tr>
<td>garden-in</td>
<td>exist-NLZ-COMP</td>
</tr>
<tr>
<td>‘What is there in the neighbor’s garden?’</td>
<td></td>
</tr>
</tbody>
</table>
(46) Methods

- **Speakers:**
  - Two 21 year-old native speakers of Fukuoka Japanese, one female and one male.
  - They live in Fukuoka City since their birth.

- **Measurements:**
  - **VERBF0:** Mean F0 of the verb.

---

**AA combination**

- WH: Nan-ga
- A: nomimo'no-no
- A: na'ka-ni
- verb: aru-to

**UU combination**

- WH: Nan-ga
- U: otonari-no
- U: niwa-ni
- verb: aru-to
(46) Methods

- Speakers were asked to read aloud the test sentences in randomized order eight times.
- Produced utterances were recorded (44.1 KHz, 16 bits) and analyzed based on the F0 extraction.
(47) Results

- Visual inspection of the normalized F0 contours:

  **Dataset I**

  - The contours for **AA** and **UU** are almost overlapped.
  - **VERBF0** is slightly *lower for AA than UU*.
    → Downstep?
Results

Visual inspection of the F0 normalized contours:

Dataset II

- The contours for AA and UU are almost overlapped.
- Only for FM, VERBF0 is slightly lower for AA than UU.

→ Downstep?
(47) Results

- Visual inspection of the F0 normalized contours:

  **Dataset III**
  - The contours for **AA** and **UU** are almost overlapped.
  - **VERBF0** is slightly *lower for AA than UU.*

  →Downstep?
Results

Statistic analysis

Two-way ANOVA, for each speaker separately
- Dependent variable: VERBF0 (Hz)
- Independent variables: ACCENTEDNESS (AA / UU)
  DATASET (I / II / III)

Results for FM
- A significant effect of ACCENTEDNESS (P < 0.05).
  with AA yielding lower values than UU
  (Downstep was confirmed)
  - A significant effect of DATASETS (P<0.01).
  - No significant interaction.

Results for MN
- No significant effect of ACCENTEDNESS .
- A significant effect of DATASETS (P<0.01).
- No significant interaction.
One of the two speakers showed slightly but significantly lower pitch in verb when preceded by accented words than by unaccented words (downstep was observed).

The results may suggest that lexical accents in the post-focal domain are actually NOT deleted.

Although further research is clearly necessary, the results may be suggestive of incomplete neutralization of the accentedness of the post-focal words.

We can not exclude the possibility that post-focal accents actually survives.

We thus maintain the view that Post-Focal Restraint *Fall is phonetically (not phonologically) realized in Fukuoka Japanese.
6. Summary & Conclusions
We proposed and argued for what we called "post-focal restraint" and its micro-parametric variations among different dialects in Japanese.

Post-focal restraint phonetically restrains radical rise or fall of pitch in the post-focal domain, thereby inducing non-alternating, monotonous prosodic contours. (But see (42))

It was also pointed out that the post-focal restraint can be completely synchronized with the mapping of the post-focal items in the syntactic representation to a semantic representation of the background to be interpreted as the tail of the focus with the mediation of the association of [F] features at PF and LF.

Post-focal restraint, we believe, is part of the grammaticalization of the language users' need to have phonetic salience and phonetic monotony correctly paired with focus and its tail, respectively, in the packaging of information, obviously by way of their processing of sentences.
A

A
Igarashi's (2006) experiment with longer post-focal words

Speaker MH:
No clear L and H are observed, but there are turning points (= trance of the tones).

The post-focal H tones in Kobayashi are not deleted but only weakened.
(00) Methods

- Utterances with AA combination, which were judged to be produced in ‘Tokyo-like pattern’ (i.e. post-focal accents are clearly realized as a sharp fall), were excluded.
- The judgments were done on the basis of 1) the visual inspection of the F0 contours and 2) the auditory impression.