

Presence or absence of phrasal tones in Japanese dialects

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Introduction

- Japanese dialects show a surprisingly rich variety of word-prosodic systems.
- Their description has been a central concern in Japanese dialectology (among many others, Hattori 1929; Kindaichi 1937; Hirayama 1960; Uwano 1985; Nitta 1985; Nakai 1987; Kibe 2000).
- The accumulation of dialectal data has made it possible for researchers to propound various sorts of word-prosodic typology (Hirayama 1960; Kindaichi 1974; Shibata 1961; Uwano 1989, 1998; Hayata 1999).
- Although there are tremendous amounts of literature on word-level prosody, surprisingly few efforts have been devoted to phrase-level prosody, or intonation of dialects.

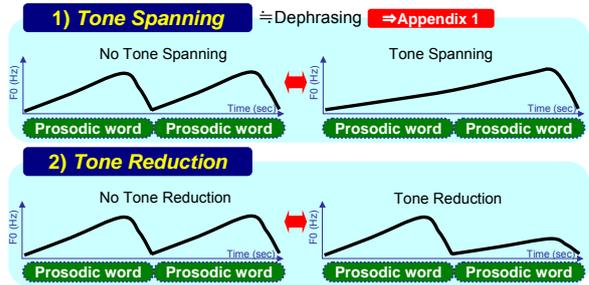
Introduction

- Uwano's (1984) short impressionistic description about the intonational phrasing of nearly twenty dialects can be considered as the first attempt to typologise dialectal intonation.
- After his single work, however, there has been no research that advances an intonational typology of dialects.
- My recent works have been devoted to description of the intonational structure of Japanese dialects (Igarashi 2006a, 2006b, 2007a, 2007b, 2007c, 2007d, 2007e, in preparation).
- Some of them are aimed at a typology of intonational phrasing in Japanese dialects (Igarashi 2007a, 2007b, in preparation).

Introduction

- Overview of my typology (Igarashi in preparation)

- There are **two ways** of intonational phrasing;
 - Phrasing by means of **Tone Spanning**
 - Phrasing by means of **Tone Reduction**



Introduction

- Overview of my typology (Igarashi in preparation)
 - Tone Spanning is phrasing at level of **Tonal Phrase**, while Tone Reduction is phrasing at level of **Intonational Phrase**
 - They are hierarchically organized

Phrasing at the level of Tonal Phrase



Phrasing at the level of Intonational Phrase



Introduction

- Overview of my typology (Igarashi in preparation)
 - Japanese dialects are dichotomized, depending on the difference in intonational phrasing

Japanese dialects

+ Tone Spanning (+Tonal Phrase)

Accentless dialects
(such as Kumamoto, Koryama, Imaichi, Yamagata, Omuta)
Tokyo dialect
Fukuoka dialect
..and many others

- Tone Spanning (-Tonal Phrase)

One-pattern accent dialects
(such as Kobayashi, Miyakonojo)
Osaka dialect
Kagoshima dialect (?)
..etc

Introduction

- The aims of today's talk
 - To show that there are two ways of intonational phrasing in Japanese dialects, by examining the dialects without underlying tonal specification
 - so-called "one-pattern accent" dialects
 - so-called "accentless" dialects
 - To show that the two types of dialects are distinguished by and only by the difference in intonational phrasing
 - To show that the framework that postulates only phrasing by means of Tone Reduction (Reduction-only theory) is not viable for some Japanese dialects

Introduction

- Organization of Today's presentation
 1. Introduction
 2. Dichotomizing the dialects without underlying tones
 - One-pattern accent vs. accentless dialects
 - Tone Spanning: phrasing at Tonal Phrase
 - Tone Reduction: phrasing at Intonational Phrase
 3. Evidence against the Reduction-only theory
 - Experimental analysis of the Imaichi (accentless) dialect (spoken in Tochigi Prefecture).
 4. Conclusion

1. Introduction

➔ 2. Dichotomizing the dialects without underlying tones

3. Evidence against the Reduction-only theory

4. Conclusion

One-pattern accent vs. accentless

- Two types of dialects without underlying tones
 - A number of Japanese dialects have no underlying tonal specification to morphemes or words.
 - They coincide with Uwano's 'non-distinctive accent' dialects, which are further divided into 'one-pattern accent' and 'accentless' dialects (Uwano 1989).

Uwano's (1989) classification of the prosodic systems of Japanese dialects

One-pattern accent vs. accentless

- How are the one-pattern accent dialects and accentless dialects distinguished?
 - The dichotomy of one-pattern accent vs. accentless gain broad acceptance in Japanese dialectology (e.g. Shibata 1961)
 - At the same time, this division has been a point of controversy (Yamaguchi 1975, 1998; Ramsey 1998; Kori 2006).
 - The question as to how the dialects without underlying tones are dichotomized has not always been answered explicitly
- The property that distinguishes between the one-pattern accent and accentless dialects plays an important role in my typology (Igarashi in prep.) ⇒ Appendix 2

| [+/- underlying tones] | [+/- ?] | |
|------------------------|---------|---------------------------|
| - | - | One-pattern accent |
| - | + | Accentless |
| + | - | Osaka, Kagoshima (?) etc. |
| + | + | Tokyo and many others |

One-pattern accent vs. accentless

- "One-pattern accent" dialects
 - Dialects such as Miyakonojo and Kobayashi
 - All the prosodic words* is believed to exhibit a pitch rise from the penultimate syllable to the final (Hirayama 1951)
 - So-called 'high-tailed pattern'

'flower' ha na ha na -ga ha na -ka ra
plus particle -ga plus particle -ka

'nose' ha na ha na -ga ha na -ka ra

* 'Prosodic word' ≈ content word followed by function words (*bunsetsu*)

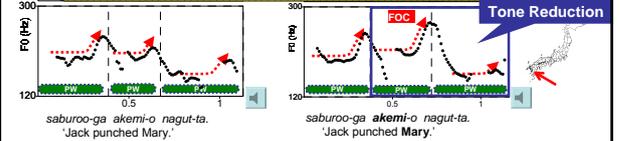
One-pattern accent vs. accentless

■ “Accentless” dialects

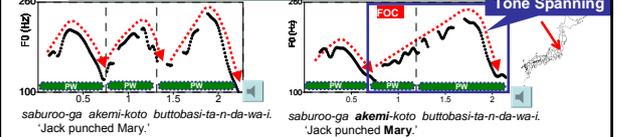
- Dialects such as Kumamoto and Koriyama.
- Hirayama (1968)
 - > “There are no accent rules for any word, and all words are pronounced quite freely (non-systematically)”
- Until Maekawa’s (1990 et seq.) experimental works (and perhaps even now for some researchers) there has been undocumented but persistent belief that pitch patterns in the “accentless” dialects are random.
- In the “accentless” dialects as well, there is a **regular linguistic pitch control**, which is equivalent to other dialects such as Tokyo.

Distinguishing one-pattern accent and accentless

Kobayashi dialect (One-pattern accent)

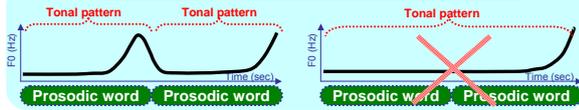


Koriyama dialect (Accentless)



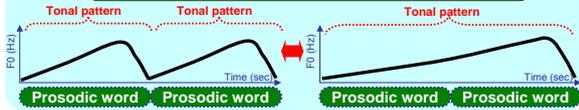
Distinguishing one-pattern accent and accentless

Kobayashi dialect (One-pattern accent)



Tonal pattern is **always assigned per prosodic word**.
A single tonal pattern **never spans more than two prosodic words**.
(Uwano 1998b, Igarashi 2006)

Koriyama dialect (Accentless)

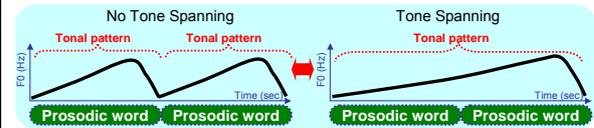


Tonal pattern can be assigned per prosodic word.
A single tonal pattern can span more than two prosodic words.

Tone Spanning and Tone Reduction

■ “Tone Spanning” –the definition

- A phenomenon, where a single tonal pattern spans more than two prosodic words



- Tone spanning is allowed in the Accentless dialects
- Tone Spanning is prohibited in the one-pattern accent dialects (Uwano 1998b)

Tone Spanning and Tone Reduction

■ “Tone Reduction” –the definition

- A phenomenon, where pitch range of tones is considerably compressed



- Tone Reduction is observed in the Accentless dialects as well (Maekawa 1997, Kori 2006)

Tone Spanning and Tone Reduction

■ Dialect-specific functions of the tone

- **One-pattern accent dialects** [-Tone Spanning]
 - > It marks a single prosodic words
- **Accentless dialects** [+Tone Spanning]
 - > The pattern marks phrasal unit larger than prosodic word

◆ Uwano (1998b: pp. 186) appropriately captures this cross-dialectal difference in the functions of tonal pattern, when he says that the tonal pattern in the one-pattern accent dialects has the demarcative function (for a prosodic word) because it marks the end of a prosodic word, whereas that in the accentless dialects does not.

Tone Spanning and Tone Reduction

Dialect-specific difference in the domain of the tonal pattern

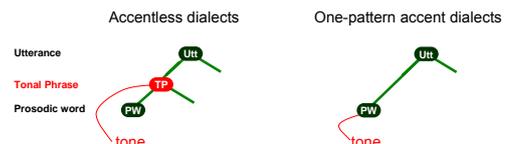
- **One-pattern accent dialects** [-Tone Spanning]
 - The domain is prosodic word
- **Accentless dialects** [+Tone Spanning]
 - The domain is phrasal unit larger than prosodic word

- ◆ The idea that sees the tonal pattern in the accentless dialects as a property of the phrasal unit larger than prosodic word can be found in Uwano (1984) in his reanalysis of Shiro Hattori's data on the Sendai dialect.
- ◆ Also, Maekawa (1990) postulates the phrasal unit larger than prosodic word that functions as the domain of the tonal pattern for the Fukui and Kumamoto dialects.

Tonal Phrase and Intonational Phrase

Tonal Phrase ⇒ Appendix 3

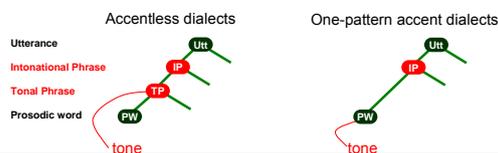
- The phrasal unit above prosodic word which functions as the domain of tonal pattern
 - The tone whose domain is Tonal Phrase is called **Phrasal Tone**
 - Tone Spanning is a manifestation of phrasing at the level of Tonal Phrase
 - In the one-pattern accent dialect, the domain for tonal pattern is not phrasal unit above prosodic word, but it is prosodic word; thus Tonal Phrase is not postulated for the one pattern accent dialects



Tonal Phrase and Intonational Phrase

Intonational Phrase ⇒ Appendix 3

- The phrasal unit which functions as a domain of pitch range specification, hierarchically above the domain for tonal pattern
 - Speaker choose new (non-reduced) pitch range at the beginning of Intonational Phrase
 - Tone Reduction is a manifestation of phrasing at the level of Tonal Phrase

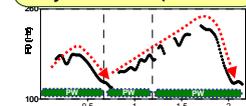
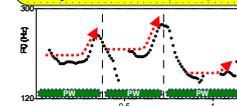


Tonal Phrase and Intonational Phrase

Proposed prosodic hierarchy

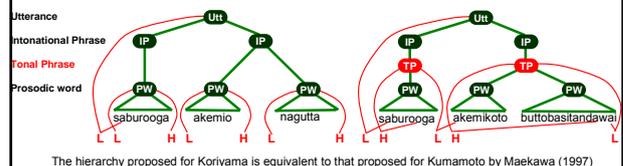
Kobayashi dialect (One-pattern)

Koriyama dialect (Accentless)



saburoo-ga akemi-o nagut-ta.
'Jack punched Mary.'

saburoo-ga akemi-koto buttobasi-ta-n-da-wa-i.
'Jack punched Mary.'



The hierarchy proposed for Koriyama is equivalent to that proposed for Kumamoto by Maekawa (1997)

One-pattern accent vs. accentless

[+/-Tonal Spanning] (or [+/-Tonal Phrase])

- The dialects without underlying tones can be dichotomized depending on whether they exhibit tonal spanning or not.
- In other words, whether they have Tonal Phrase or not.
- Thus, the parameter that distinguishes between the one-pattern accent dialects and the accentless dialects can be referred to as [+/-Tonal Spanning] (or [+/-Tonal Phrase])

| [+/- underlying tones] | [+/- Tonal Spanning] ([+/-Tonal Phrase]) | |
|------------------------|--|--------------------|
| - | - | One-pattern accent |
| - | + | Accentless |

Exclusion of tonal variability out of typology

The domain-based classification

- My classification between the one-pattern accent and accentless dialects on the basis of [+/-Tonal Spanning] ([+/-Tonal Phrase]) is the most radical of the ones that have ever been proposed.
- The division is made solely by the difference in the domain for tones (Tonal Phrase vs. prosodic word), and it does not concern the **tonal variability** that the accentless dialects are reported to exhibit.
- While the division between the two types of dialects on the basis of the domain difference has been implied in Uwano (1989: footnote 2), the treatment of tonal variability is not clear in his framework.

Exclusion of tonal variability out of typology

Tonal variability in the accentless dialects

- The accentless-as-variable view is quite persistent in Japanese linguistics
 - One pattern accent dialect – **Consistent** tonal processes
 - Accentless dialects – **Variable** tonal processes (Shibata 1961; Kori 2006; see also reference in Yamaguchi 1998)
- A consistent vs. variable distinction is excluded from my intonational typology
 - Both one-pattern accent and accentless dialects show consistent tonal processes in the phrasal (intonational) level.
- Maekawa showed that accentless dialects exhibit tonal variability not only at the word level but *at the phrasal level as well* (Maekawa 1996b, 1999 for Kumamoto dialect)
- Should, then, the division between the one-pattern accent and the accentless dialects nevertheless concern tonal variability?
 - My answer is no!

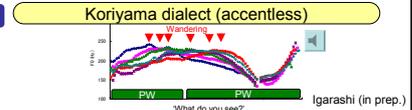
Exclusion of tonal variability out of typology

Phrase-level tonal variability in the accentless dialects

(Maekawa 1994b, 1999 for Kumamoto; see also Kori 2006 for Kumamoto)

1. H wandering

The peak can be aligned with virtually any syllable.



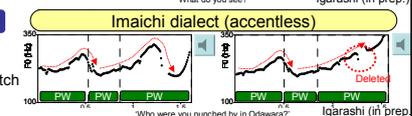
2. H spreading

There can be a high plateau between rise and fall.



3. L deletion

Originally, 'upstep'
The phrase-final L can be deleted when boundary pitch movement (BPM) occurs



Exclusion of tonal variability out of typology

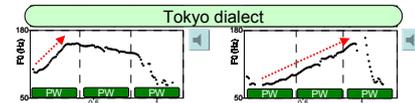
Arguments against the classification on the basis of tonal variability

- The one-pattern accent dialects also present some tonal variability
 - Focus causes the later peak alignment in Kobayashi (one-pattern accent) dialect (Sato 2006; Igarashi 2006b)
 - Peak can be located at the non-final syllable even in citation form in Miyakonojo (one-pattern accent) dialect (Kishie 1996)
- Larger degree of variability in the accentless dialects can be accounted for by domain difference
 - In the accentless dialects, the domain for tonal processes is Tonal Phrase, generally larger in size than prosodic word.
 - Thus, the tones in the dialects will show a larger degree of variability than in the one-pattern accent dialects; the domain for tonal processes in the latter dialects is prosodic word, generally smaller in size than Tonal Phrase.

Exclusion of tonal variability out of typology

Arguments against the classification on the basis of tonal variability (cont'd)

- Arguably, phrase-level tonal variability is observed not only in the accentless dialects, but in any dialect.
 - The phrase-initial rise (aka initial lowering) in Tokyo dialect is generally believed to be aligned with the second mora of the phrase.
 - But the rise can be aligned earlier or later depending on various factors such as emphasis (Kawakami 1957a).
 - The speakers' speech acts affect the alignment of the rise (Maekawa & Kitagawa 2002).
 - Sometimes the peak of the rise is delayed considerably so that it is found in the stretch of the phrase-medial word (for similar observation, see Beckman 1986: pp. 101-102)



Summary

It was shown (I hope..)

- There are two ways of intonational phrasing in Japanese dialects
 - Tonal Phrase, manifested as Tone Spanning
 - Reduction Phrase, manifested as Tone Reduction
- The dialects without underlying tones are classified into the one-pattern accent dialects and the accentless dialects by and only by the difference in intonational phrasing:
 - Tonal variability was excluded from the distinction

| [+/- underlying tones] | [+/- Tonal Spanning] ([+/- Tonal Phrase]) | |
|------------------------|---|--------------------|
| - | - | One-pattern accent |
| - | + | Accentless |

1. Introduction

2. Dichotomizing the dialects without underlying tones

➔ 3. Evidence against the Reduction-only theory

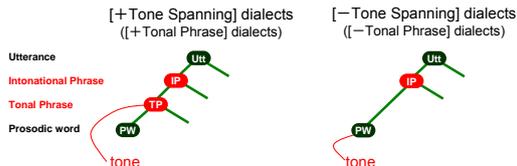
4. Conclusion

Introduction

Phrasal Tone theory

- In my framework, two levels of intonational phrasing are postulated between utterance and prosodic word

- **Tonal Phrase:** domain of Phrasal Tone ([-Tonal Phrase] dialects lacks this level)
- **Intonational Phrase:** domain of pitch range specification



Introduction

Phrasal Tone theory vs. Reduction-only theory

- Although there are a lot of differences in their details, existing theories of Japanese intonation can be divided into two major groups.

Phrasal Tone theory

- The theory that postulates Phrasal Tones, i.e. the tones whose domain is larger than prosodic word.
 - Kawakami (1957b) for Tokyo dialect
 - Uwano (1984) for several Japanese dialects
 - Pierrehumbert & Beckman (1988) for Tokyo dialect

Reduction-only theory

- The theory that postulates no Phrasal Tones.
 - Many classical theories such as Jinbo (1925)
 - Kori (1989 et seq.) for several Japanese dialects

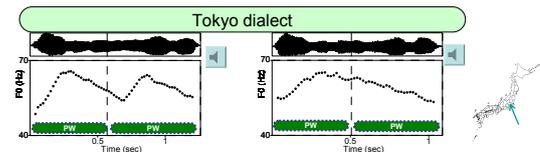
Introduction

Reduction-only theory (Kori 1989 et seq.)

- Intonational phrasing is achieved only by Tone Reduction
 - Kori (1989) for Osaka dialect
 - Kori (1997, 2003, 2004) for Tokyo dialect
 - Kori (2006) for Kumamoto (accentless) dialect
- No tones are assumed whose domain is above prosodic word (no Phrasal Tones)
- Thus, all the tones are seen as a property of prosodic word.**

Introduction

Tokyo dialect: under the two theories

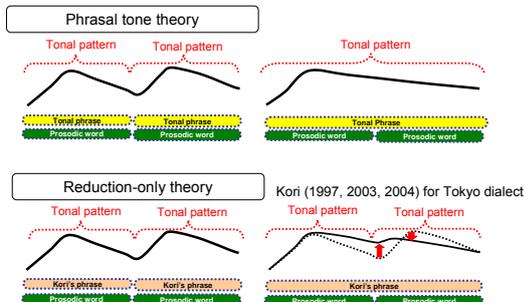


A string of two unaccented prosodic words in Tokyo dialect:

naomi-no omiyage
Naomi-GEN souvenir

Introduction

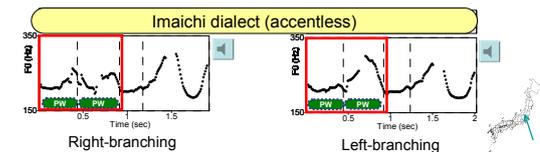
Tokyo dialect: under the two theories



Introduction

Can the Reduction-only theory account for the phrasing in the accentless dialects?

- e.g. phrasing brought about by syntactic branching (see. Kubozono 1988 for Tokyo dialect)



nagano-de baacyan-ni ringo mora-ta-yo nagano-no baacyan-ni ringo mora-ta-yo
Nagano-LOC grandmother-DAT apple-ACC receive-PAST-DEF Nagano-GEN grandmother-DAT apple-ACC receive-PAST-DEF
'In Nagano I received apples from a grandmother.' 'I received apples from the grandmother in Nagano.'

Introduction

■ Accentless dialect: under the two theories

Phrasal tone theory

Right-branching Left-branching

Reduction-only theory

Right-branching Left-branching

Kori (2006) for Kumamoto (accentless) dialect

Reduction of tonal pattern of the *phrase-initial* prosodic word !!!

Introduction

■ Reduction occurs for the *non-Initial* tonal pattern in the (Tonal) phrase in other dialects

Tokyo dialect

Goshogawara dialect

Fukuoka dialect

See Kubozono (1988); Kori (1997)

Igarashi (2007d)

Igarashi (2007e)

Introduction

■ The treatment of the accentless dialects under the two theories

- **Phrasal Tone theory:** intonational phrasing in the accentless dialects can be treated in the same way as that in other dialects.
- **Reduction-only theory:** intonational phrasing in the accentless dialects must be regarded as exceptional.
- Are the accentless dialects that special??

■ We can test the two theories by considering their predictions concerning intonational phrasing....

Introduction

Prediction: Phrasal Tone theory

Prediction: Reduction-only theory

Experiment

■ Methods

- Aim
 - To examine whether the Reduction-only theory is able to account for the intonational contours of the Imaichi (accentless) dialect.
- Speaker
 - One 23-year old female native speaker of the Imaichi dialect
 - 0-18: Imaichi*, Tochigi Prefecture
 - 18-22: Koshigaya, Saitama Prefecture,
 - 22-: Tokyo

* Imaichi City was integrated into Nokko City as a result of the large-scale merging of municipalities.

Experiment

■ Methods

- Data collection

"Simulation method" (cf. Maekawa 1991; Kori 2006)

Sentence design

Translation (Standard Japanese-> Imaichi dialect)

Reading of the sentences & recording

Analysis of the produced utterances

Experiment

Methods

- Test sentences
 - Three test sentences (A-B)
 - *takusan morat-ta-n-da-kedo* 'I received a lot of
- Test words
 - Two prosodic words together consisting of seven morae
 - The number of the morae of the preceding and following words varies across test sentences (A-C)

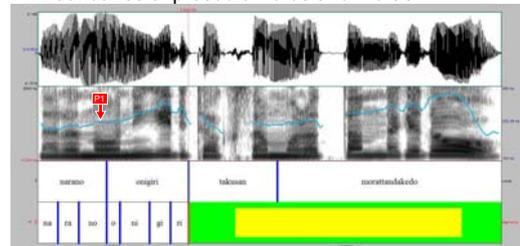
| | N of morae | Test words |
|---|------------|---|
| A | 3 + 2 | <i>nara-no onigiri</i> 'rice balls of Nara' |
| B | 4 + 3 | <i>nagano-no miyage</i> 'souvenirs of Nagano' |
| C | 5 + 2 | <i>aomori-no momo</i> 'peaches of Aomori' |

- The speaker read the entire list of test sentences five times

Experiment

Methods

- Measurements
 - P1: highest F0 value in the first prosodic word
 - Boundaries of prosodic words and morae

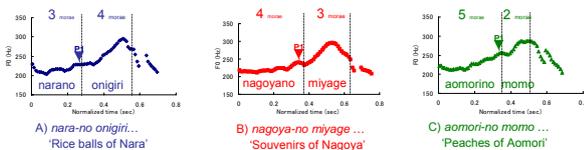


nara-no onigiri takusan morat-ta-n-da-kedo 'I received a lot of rice balls of Nara.'

Experiment

Results

- Visual inspection of averaged F0 contours across five repetitions

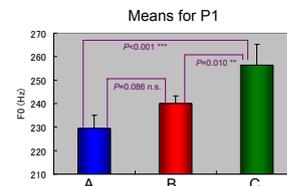


- P1 becomes higher as the number of morae of the first prosodic word increases
- The results are not predicted by the Reduction-only theory

Experiment

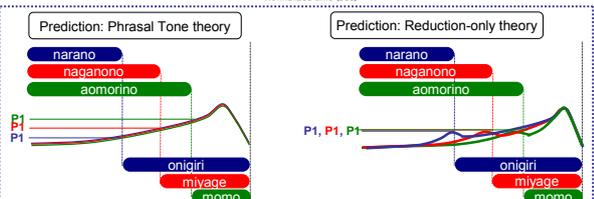
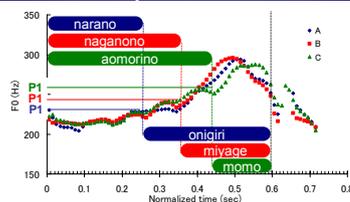
Results

- The difference in P1 between three test sentences was significant according to the one-way ANOVA
 - with P1 as the dependent variable, and with sentence (A, B, C) as the independent variable
 - $F(2,12) = 17.896, P < 0.001$ ***
- The difference was significant only between A and C and between B and C, according to the post-hoc Tukey test



Experiment

Results



Experiment

Discussion

- The results favored the Phrasal tone theory.
- There was no evidence supporting that each prosodic word always has a tonal pattern.
- Instead, the results showed that a single tonal pattern spans two prosodic words in our experimental conditions.
- Without any complication of the theory, the results are not predicted by the Reduction-only theory (Kori 2006).
- The results can best be accounted for by the Phrasal tone theory, in which two prosodic words are grouped together to form a Tonal Phrase, which is marked by Phrasal Tone
- Phrasing of the accentless dialects is NOT exceptional at all!

1. Introduction

2. Dichotomizing the dialects without underlying tones

3. Evidence against the Reduction-only theory

→ 4. Conclusion

Conclusion

- It was argued that there are two ways of intonational phrasing in Japanese dialects
 - Tonal Phrase, manifested as Tone Spanning
 - Intonational Phrase, manifested as Tone Reduction
- It was also argued that the dialects without underlying tones are classified into the one-pattern accent dialects and the accentless dialects by and only by the difference in intonational phrasing.
 - The accentless dialects: [+Tonal Spanning (Tonal Phrase)]
 - The one-pattern accent dialects: [-Tonal Spanning (Tonal Phrase)]
- The results of an experiment were reported, showing that the framework that postulates only phrasing by means of reduction is not viable in Japanese dialects

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Appendix

Appendix 1

- **Tone Spanning or Dephrasing?**
 - Tone Spanning is a theoretically neutral term simply indicating the phenomenon, where a single tonal pattern spans more than two prosodic words.
 - The phenomenon itself is subject to various interpretations depending on specific theories.
- **Some researchers interpret Tone Spanning in Japanese and Korean dialects as *Dephrasing*.** (Pierrehumbert and Beckman 1988; Venditti et al. 1996; Jun 2005; see also Igarashi 2007b).
 - In the Dephrasing view, Tone Spanning is considered as the result of the *prosodic restructuring*, i.e. the *deletion* of already inserted prosodic boundaries in intonational processes.
- **I avoid using the term Dephrasing, because we have little evidence for or against the presupposed restructuring**
 - Tone Spanning is defined independently of the prosodic processes that may underlie the phenomenon

Appendix 2

- **Intonational phrasing in the [-Tonal Spanning] dialects might be *insensitive* to syntactic branching**
(suggested in: Igarashi 2005b, Igarashi 2006a, 2006b, in prep.)

| [+/- underlying tones] | [+/-Tone Spanning] | Dialects | Mapping between syntactic branching and intonational phrasing |
|------------------------|--------------------|-----------|---|
| — | — | Kobayashi | Yes (Sato 2006) No? (Igarashi 2006b) |
| — | + | Fukui | Yes (Maekawa 1990) |
| | | Kumamoto | Yes (Maekawa 1997) Yes (Kori 2006) |
| + | — | Osaka | Yes (Kori 1989) No (Sugito 2006) |
| | | Kagoshima | ? |
| + | + | Tokyo | Yes (e.g. Kubozono 1988) |
| | | Fukuoka | Yes (Igarashi 2007d) |

Appendix 3

- **Tonal Phrase ≈ Accentual Phrase** (Pierrehumbert & Beckman 1988)
 - My Tonal Phrase is similar to P&B's Accentual Phrase proposed for the Tokyo Japanese in that they both are the domain of tones that marks the prosodic unit which dominates prosodic word.
 - My TP differs from P&B's AP in that the latter is the domain of lexical pitch accent
 - One-pattern accent and accentless dialects have no lexical accent.
- **Intonational Phrase ≈ Intermediate Phrase** (P&B 1988)
 - My Intonational Phrase is similar to P&B's (1988) Intermediate Phrase proposed for the Tokyo dialects in that both are the domain of pitch range specification.
 - My IP differs from P&B's IP in that the latter is the domain of downstep.
 - One pattern accent and accentless dialects, by definition, have no downstep, because they both have no lexical tone contrast.

Appendix 3 (cont'd)

- **Tonal Phrase ≈ Tone Phrase** (Kawakami 1957b)
 - My Tonal Phrase is similar to Kawakami's Tone Phrase proposed for the Tokyo Japanese in that they both are the domain of tones that marks the prosodic unit which dominates prosodic word.
 - My TP differs from Kawakami's TP in that pitch range is supposed to be reset at the beginning of the Kawakami's TP.
 - The domain of Phrasal Tone and that of pitch range specification are not distinguished in Kawakami (1957b)