W5-1: Syllables and moras

JAPN398D: The Sounds and Dialects of Japanese

9/25/2023

Today's class

- Syllables—Review
- Syllables and moras
- Syllables, moras, and accent
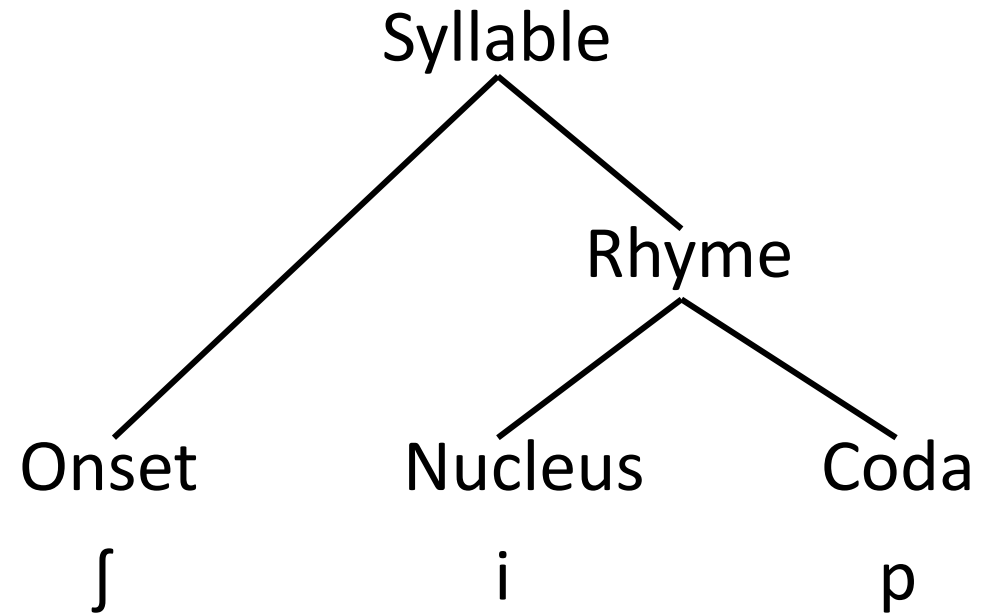- Words and music
- Syllable boundaries and pitch accent

Syllables—Review

- Syllable is a unit of speech, made up of an onset and rhyme (*Languages Files*, p. 711).
  - Onset (e.g. C) + Rhyme (e.g. VC) = Syllable (e.g. CVC)

- Onset is any consonant(s) that occurs before the rhyme in a syllable (*Language Files*, p. 705).

- Rhyme/Rime is the vowel and any consonants that follow it in a syllable (*Language Files*, p. 709).
  - Vowel (called Nucleus) + Consonant(s) (called Coda) = Rhyme/Rime

Syllables—Review

- Syllable structure is hierarchical.

- Rhymes are related to rhyming in poetry and songs.
  - e.g. *keep* /kip/, *deep* /dip/

sheep /ʃip/

```
                Syllable
               /        \
              /        Rhyme
             /         /    \
            /         /      \
        Onset     Nucleus    Coda
          ʃ          i         p
```

Syllables—Review

- The syllable template for English is (CCC)V(CCCC).

- English has up to 3 onset consonants.
    - e.g. *up* /ʌp/ (0), *peak* /pik/ (1), *trick* /tɹɪk/ (2), *street* /stɹit/ (3)

- English has up to 4 coda consonants.
    - e.g. *he* /hi/ (0), *heat* /hit/ (1), *hint* /hɪnt/ (2), *text* /tɛkst/ (3), *texts* /tɛksts/ (4)

- V can be a syllabic consonant.

Syllables—Review

- In general, sonority in a syllable increases toward the nucleus and decreases towards the end of the syllable.

- However, the first onset C and the last coda C in CCCVCCCC in English must be /s/.
  - *street* /stɹit/
  - *texts* /tɛksts/

- Example
  - print /pɹɪnt/ (CCVCC)

- /p/ → Voiceless stop
- /ɹ/ → Liquid
- /ɪ/ → Vowel
- /n/ → Nasal
- /t/ → Voiceless stop

1. Low vowels
2. Mid vowels
3. High vowels
4. Glides
5. Liquids
6. Nasals

7. Voiced fricatives
8. Voiceless fricatives
9. Voiced stops
10. Voiceless stops

Syllables and moras

- English speakers have clear intuitions about syllables.
- How many syllables?
    - Maryland
    - Japanese

- Vance mentions that Japanese speakers do not have clear intuitions about syllables.
    - Japanese speakers generally have clear intuitions about moras instead.
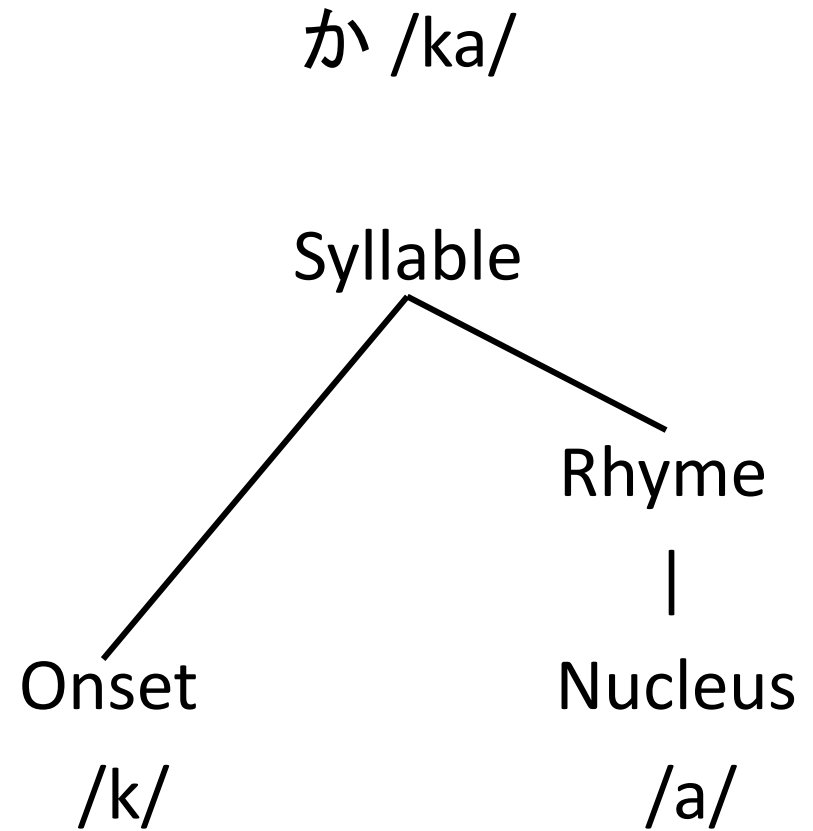   - I will show that speakers of some varieties of Japanese have intuitions about syllables.

Syllables and moras

- Syllable → Onset + Nucleus + Coda
  - Nucleus + Coda → Rhyme/Rime

- What is "mora"?
  - pl. "moras" or "morae"

- Japanese has short and long syllables.

sheep /ʃip/

```
              Syllable
             /        \
            /          Rhyme
           /          /     \
          /          /       \
      Onset      Nucleus     Coda
        ʃ           i          p
```
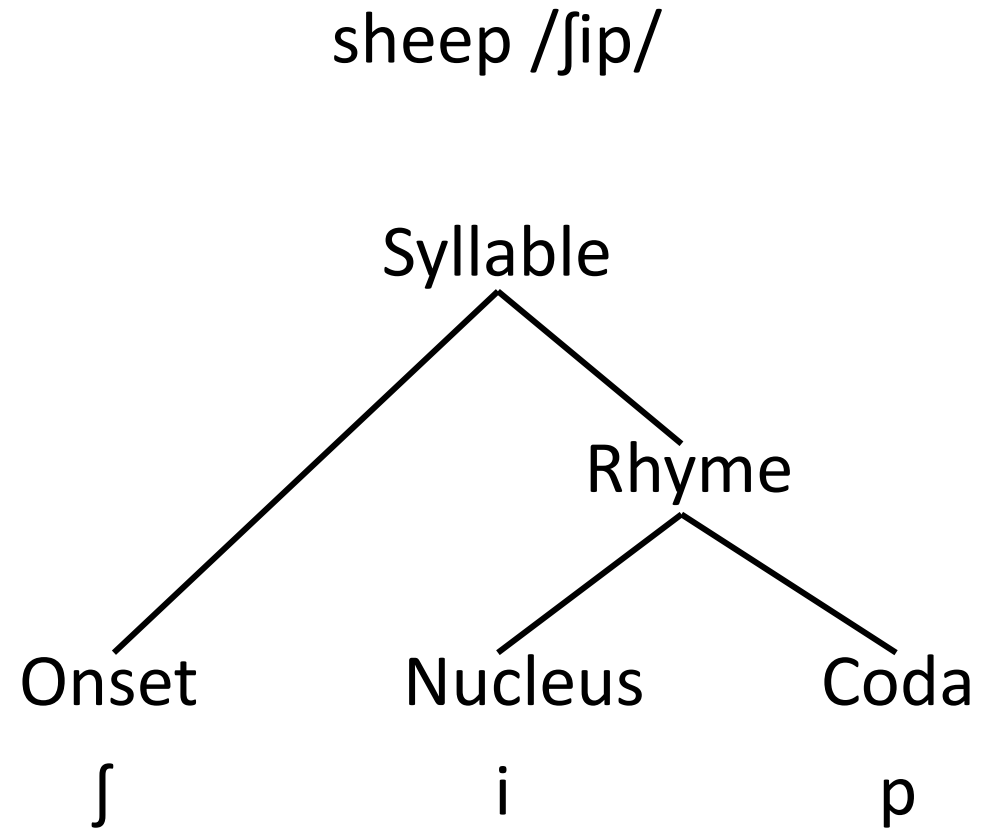
Syllables and moras

- Short syllables → 1 hiragana
  - (C (/y/)) V

- Examples
  - あ (V; w/o an onset consonant)
  - か (CV)
  - きゃ (C/y/V)

か /ka/

```
            Syllable
           /        \
          /          \
         /          Rhyme
        /             |
     Onset         Nucleus
      /k/            /a/
```

Syllables and moras

- Long syllables → 2 hiragana
  - (C (/y/)) V ({ V, /H/, /N/, /Q/ })

- Examples
  - かい (CVV; diphthong)
  - かあ (CVH; long vowel)
  - かん (CVN; moraic nasal)
  - かっ (CVQ; moraic (obstruent))

かん /kaN/

```
            Syllable
           /        \
          /        Rhyme
         /         /    \
        /         /      \
     Onset    Nucleus    Coda

      /k/        /a/      /N/
```
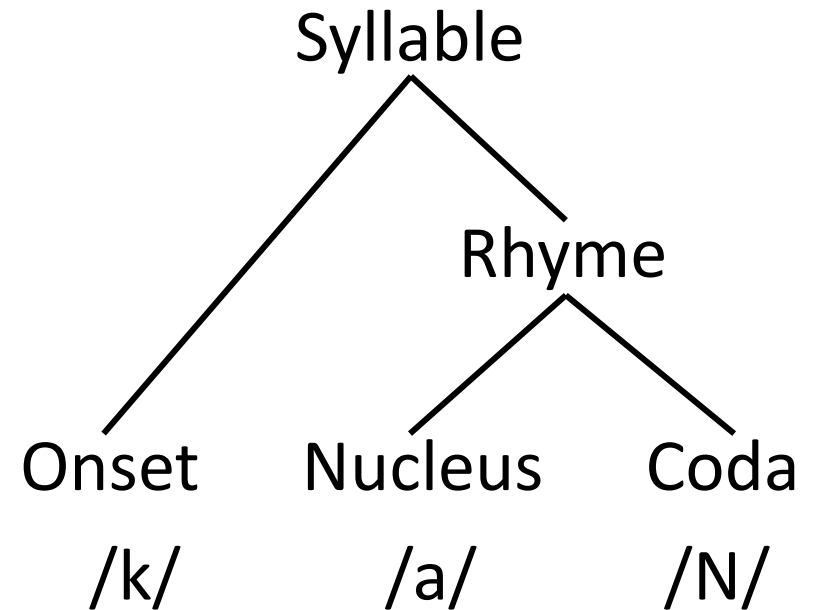
Syllables and moras

- A monophthong (V) represents <u>one mora</u>.
  - あ, か, and きゃ are all monomoraic (= 1 mora).

- In Japanese, a diphthong (VV) and a long vowel (VH) have <u>two moras</u> each.
  - かい and かあ are bimoraic (= 2 moras).

- In Japanese, one coda consonant (N or Q) represents <u>one mora</u>.
  - かん and かっ are bimoraic (= 2 moras).

Syllables and moras

- σ = Syllable (lowercase sigma)
- μ = Mora (lowercase mu)
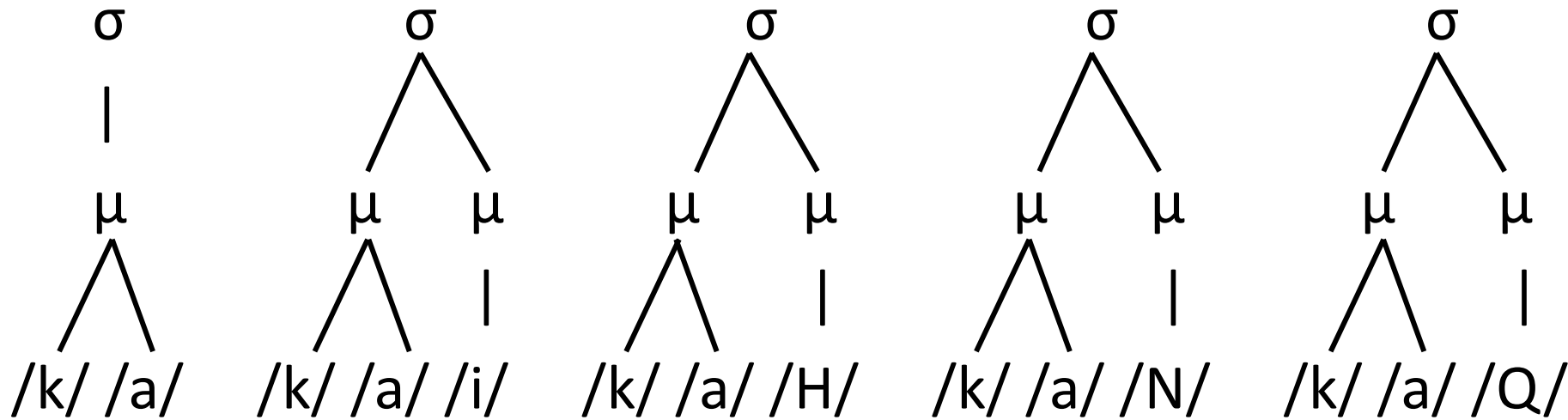
Syllables and moras

- 1 mora is 1 beat.
  - Clap your hands!

- 1 mora
  - お（尾）'tail'
  - か（蚊）'mosquito'
  - しゃ（社）'company'

- 2 moras
  - おい（甥）'nephew' (LH)
  - かい（貝）'shellfish' (HL)
  - シャイ 'shy' (HL)

- 3 moras
  - おーい 'hey!' (HHL)
  - カップ 'cup' (HLL)
  - しゃいん（社員）'company employee' (HLL)

Syllables and moras

- Long syllables are bimoraic (= 2 moras).
  - CVV, CVH, CVN, CVQ

- Japanese also has trimoraic extra-long syllables (= 3 moras).
  - Type 1: A diphthong or long vowel is followed by /Q/
    - e.g. はいった（入った）'entered' → CVVQ.CV
  - Type 2: A diphthong or long vowel is followed by /N/.
    - e.g. ワイン 'wine' → CVVN　　ローン 'loan' → CVHN
  - Type 3: A short vowel is followed by /NQ/.
    - e.g. にほん（日本）っぽい 'Japanesy' → CV.CVNQ.CVV
  - Type 4: A long vowel is followed by /i/.
    - e.g. ボーイ 'boy' → CVHV

Super-extra-long syllables!?

平和な世界でサッカーを！

何（なん）っっっっっっっや！？
そのエンブレム

https://twitter.com/hiropippi_g_o/status/
1517719139791831040/photo/1

Super-extra-long syllables!?

- Currently, two Osaka clubs play in the J1 league (soccer).
  - ガンバ大阪 (Gamba Osaka) → Based in suburban Osaka
    - https://www.gamba-osaka.net/
  - セレッソ大阪 (Serezo Osaka) → Based in Osaka City
    - https://www.cerezo.jp/

- In 2021, Gamba Osaka released a new emblem for the 2022 season.

https://www.footyheadlines.com/2021/10/all-new-gamba-osaka-logo-released.html

Super-extra-long syllables!?

- How do we analyze 何（なん）っっっっっっっや?

- 2 hypotheses

1. /naNQ.ya/ → The first syllable has 3 moras (= なんっや) and the duration of the Q is 6 times longer than one Q.

2. /naNQQQQQQ.ya/ → The first syllable has 8 moras (octomoraic 😂), 6 of which are Qs.

Syllables, moras, and accent

- Pitch accent languages such as Tokyo and Osaka Japanese have pitch accent and tone.
  - 後で詳しく勉強します！

- In Tokyo Japanese, words are accented or unaccented.

- Accented words have a pitch fall (HL), while unaccented words do not.
  - Accented: メリーランド (LHHHLL) 'Maryland'
  - Unaccented: アメリカ (LHHH) 'America'

Syllables, moras, and accent

- Each pitch accent language has its own accent-bearing unit (ABU) and tone-bearing unit (TBU).

- According to McCawley's (1968) classifications…

- Tokyo Japanese is a mora-counting syllable language.
  - ABU: Syllable, TBU: Mora

- Osaka Japanese is a mora-counting mora language.
  - ABU: Mora, TBU: Mora (Kori 1987, among others)

- Kagoshima Japanese is a syllable-counting syllable language.
  - ABU: Syllable, TBU: Syllable (e.g. Kubozono 2018)

Syllables, moras, and accent
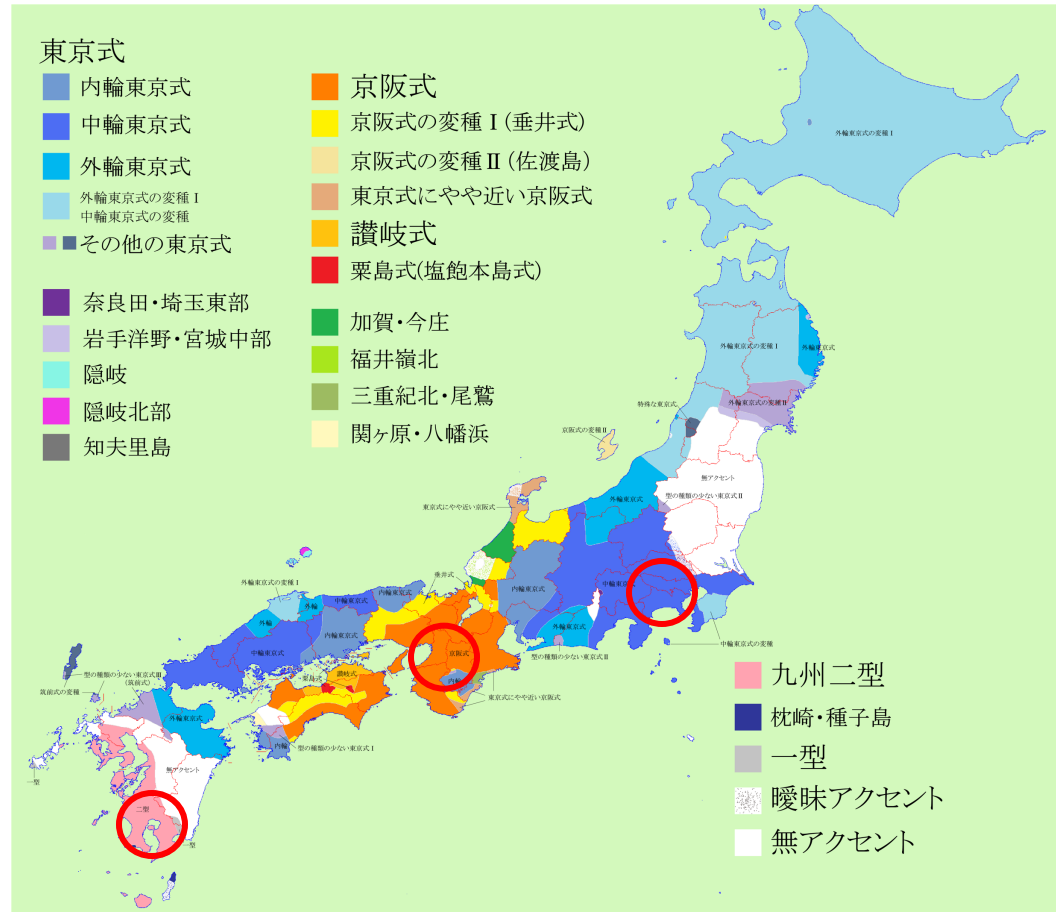
- Orange: Osaka-type
  - ABU: Mora, TBU: Mora
- Blue: Tokyo-type
  - ABU: Syllable, TBU: Mora
- Pink: Kagoshima-type
  - ABU: Syllable, TBU: Syllable
- White: No pitch accent

- How are these patterns distributed?

https://commons.wikimedia.org/wiki/File:Japanese_pitch_accent_map-ja.png

Center vs. Periphery Theory (方言周圈論)

- What is the word for *snail*?

New
- Kyoto-Osaka: デデムシ
- Chubu, Chugoku: マイマイ
- Kanto, Shikoku: カタツムリ
Old
- Tohoku, Kyushu: ツブリ

- Proposed by Yanagita Kunio (柳田國男: 1875-1962)

Public Domain

- The newest forms are found in Kyoto-Osaka.
- The older forms are found in the outer areas.

Center vs. Periphery Theory (方言周圏論)
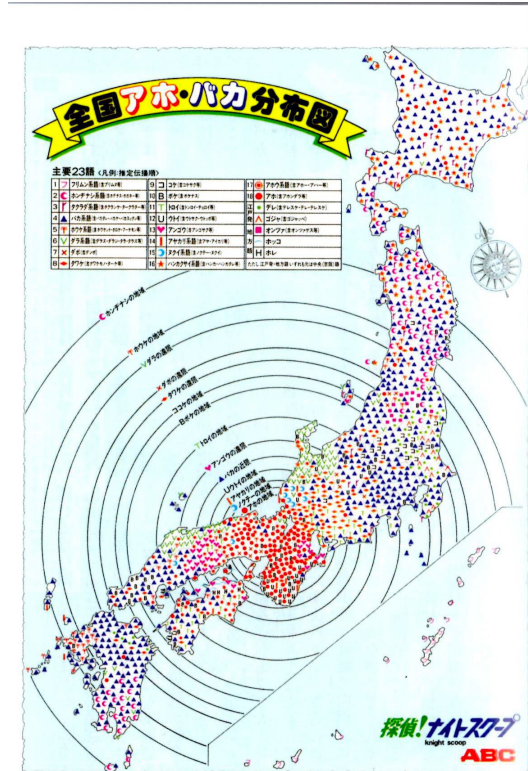
Matsumoto (1993)

- Do you say アホ or バカ？

- Red (Kyoto-Osaka): アホ
- Blue (Kanto, Kyushu, etc.): バカ

- 探偵！ナイトスクープ （Knight Scoop）
  - https://www.asahi.co.jp/knight-scoop/

Center vs. Periphery Theory (方言周圏論)

- What is the short form for マクドナルド?

Survey by McDonald's Japan in 2016

Center vs. Periphery Theory (方言周圏論)

How do you cook *zoni*?

https://www.maff.go.jp/j/pr/aff/2001/spe2_03.html

- 雑煮（ぞうに） is a soup with mochi eaten on New Year's Day.

Zoni with white miso

https://www.maff.go.jp/j/keikaku/syokubunka/k_ryouri/search_menu/menu/39_7_osaka.html

Center vs. Periphery Theory (方言周圏論)

- Which side of the escalator do you stand on?
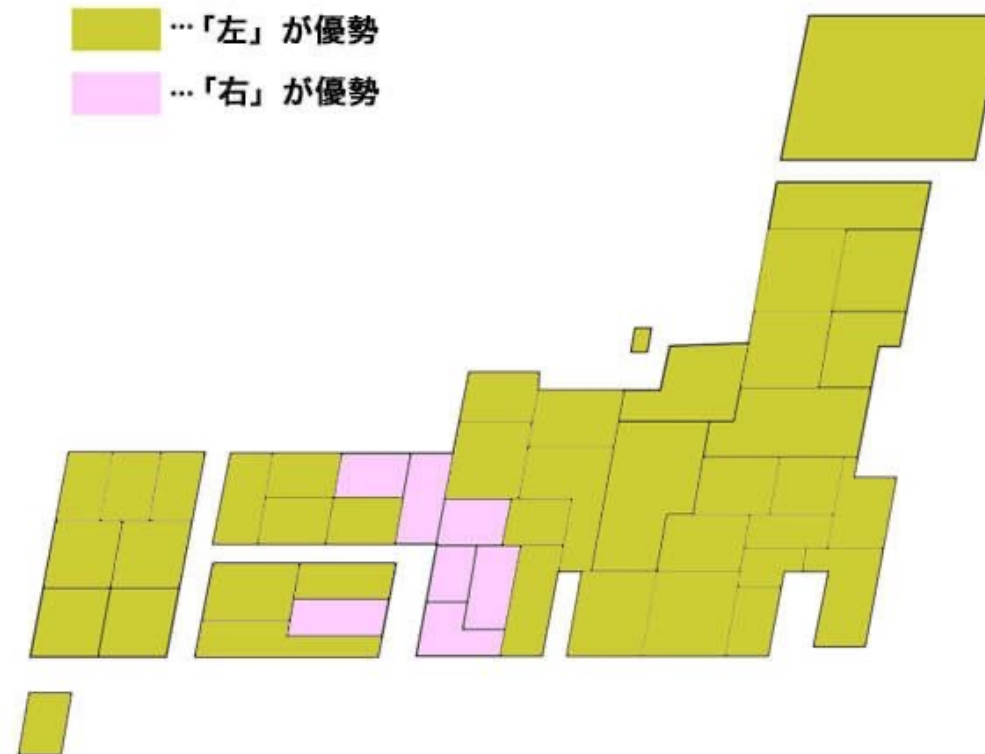
「左」が優勢
「右」が優勢

https://townwork.net/magazine/life/24095/

Syllables, moras, and accent

- Each pitch accent language has its own accent-bearing unit (ABU) and tone-bearing unit (TBU).

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- Osaka Japanese is a mora-counting mora language.
  - ABU: Mora, TBU: Mora (Kori 1987, among others)

- Kagoshima Japanese is a syllable-counting syllable language.
  - ABU: Syllable, TBU: Syllable (e.g. Kubozono 2018)

Syllables, moras, and accent

- **インド** 'India'
  - → 2 syllables; 3 moras
- **ちゅうごく（中国）** 'China'
  - → 3 syllables; 4 moras

- Tokyo Japanese
  - ABU: Syllable, TBU: Mora
  - インド (HLL)
  - ちゅうごく (HLLL)

インド

σ   σ

μ   μ   μ

/i/   /N/   /do/

H   L

*H   L
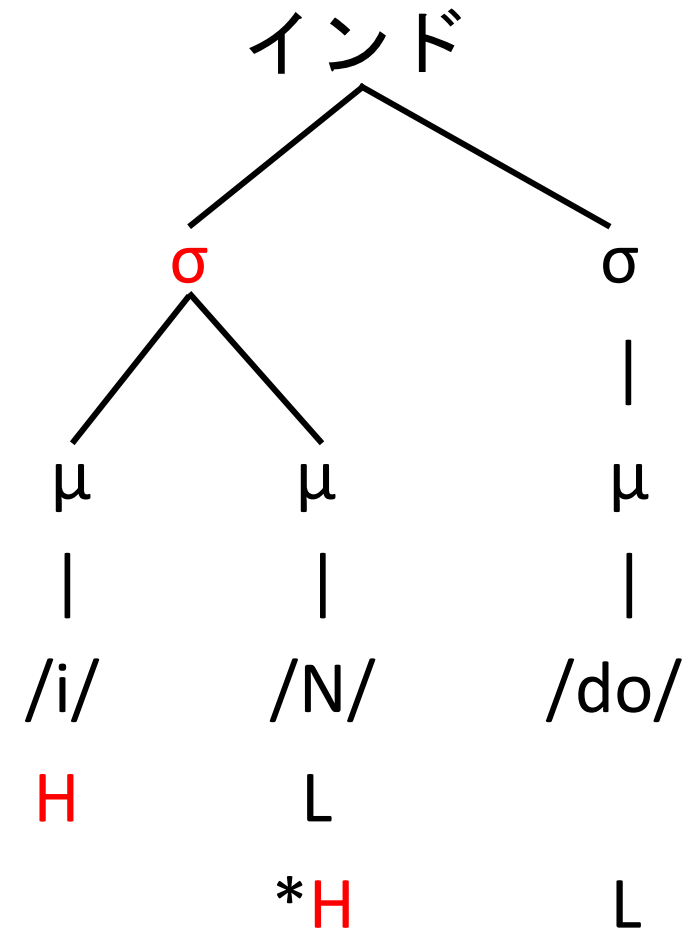
Syllables, moras, and accent

- **インド** 'India'
  - → 2 syllables; 3 moras
- **ちゅうごく（中国）** 'China'
  - → 3 syllables; 4 moras

- Osaka Japanese
  - ABU: Mora, TBU: Mora
  - インド (LHL)
  - ちゅうごく (LHLL)

インド

σ   σ

μ   μ   μ

/i/   /N/   /do/

H   L
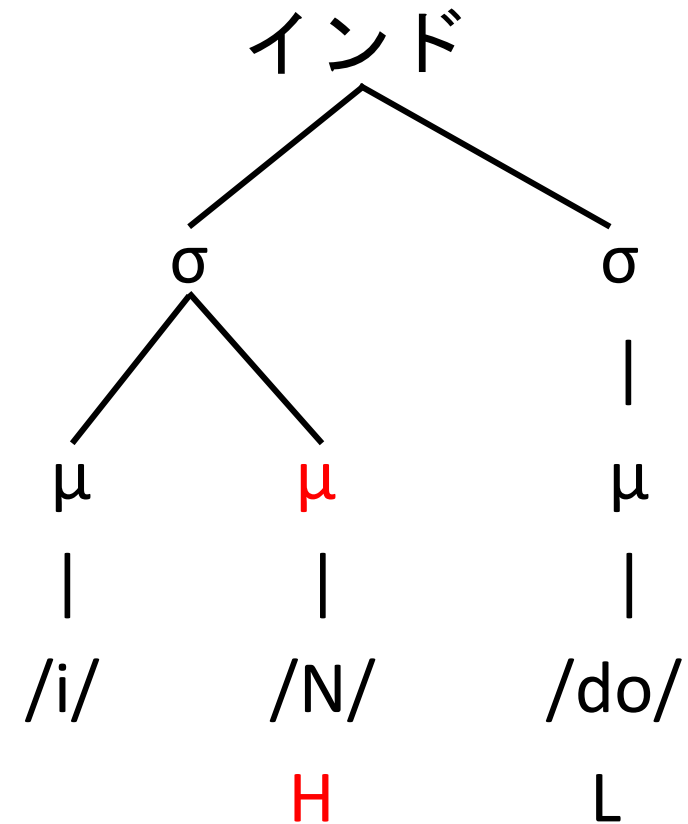
Syllables, moras, and accent

- あかしんごう（赤信号）
  'red signal'
  - → 4 syllables; 6 moras

- Kagoshima Japanese
  - ABU: Syllable, TBU: Syllable
  - あかしんごう (LLHL)

- cf. Tokyo Japanese
  - あかしんごう (LHHLLL)

- cf. Osaka Japanese
  - あかしんごう (LLHLLL)

あかしんごう

```
          あかしんごう
        ╱    │    │    ╲
       σ     σ    σ     σ
       │     │    │     │
      /a/  /ka/ /siN/ /goH/
                  H     L
```
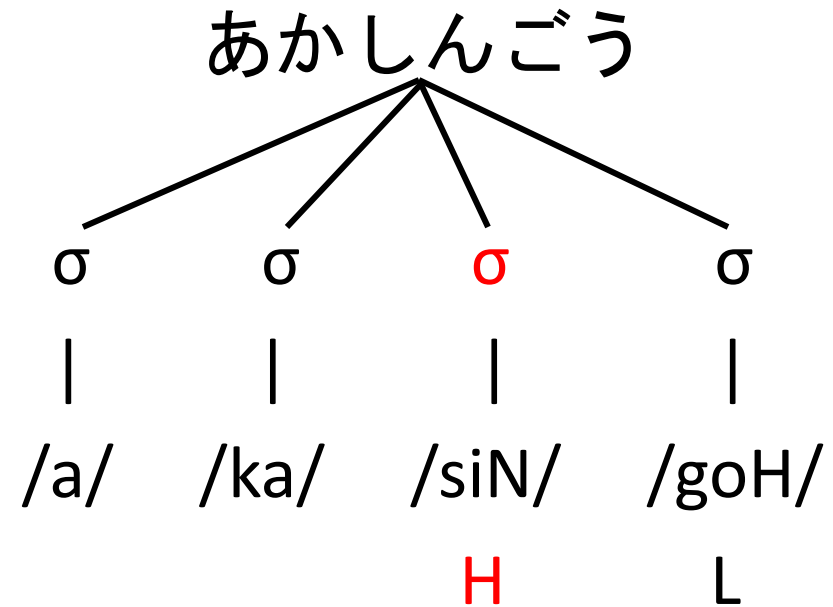
Words and music

- I will show that Kyoto-Osaka Japanese is a mora-language, while Kagoshima Japanese is a syllable language.
  - Tokyo Japanese is in-between.

- Remember…
  - Osaka → ABU: Mora, TBU: Mora
  - Kagoshima → ABU: Syllable, TBU: Syllable
  - Tokyo → ABU: Syllable, TBU: Mora

Words and music in Kyoto-Osaka

- Moras are the metrical units of traditional Japanese poetry.

- Haiku (はいく; 俳句) → 5 moras 7 moras 5 moras
  - ふるいけや　かわずとびこむ　みずのおと by Matsuo Basho
  - ゆくはるや　しゅんじゅんとして　おそざくら by Yosa Buson
  - やせがえる　まけるないっさ　ここにあり by Kobayashi Issa
  - かきくえば　かねがなるなり　ほうりゅうじ by Masaoka Shiki

Words and music in Kyoto-Osaka

- 雅楽（ががく） is Japanese classical music.

- We will look at one of the genres 朗詠（ろうえい）.
  - Japanese renditions of Chinese poetry by aristocrats in the Kyoto Imperial Court (about 1,000 years ago)

https://www.youtube.com/watch?v=SKYf833IUJY

Words and music in Kyoto-Osaka

- か**しんれい**げつ
  - 嘉辰令月
- **かん**むきょく
  - 歓無極
- **ばんぜいせんし（ゅ）う**
  - 萬歳千秋
- らくび**よう**
  - 楽未央

https://www.youtube.com/watch?v=z1Cmzh97pkY

One syllable with /N/ (= bimoraic) is assigned to two notes.
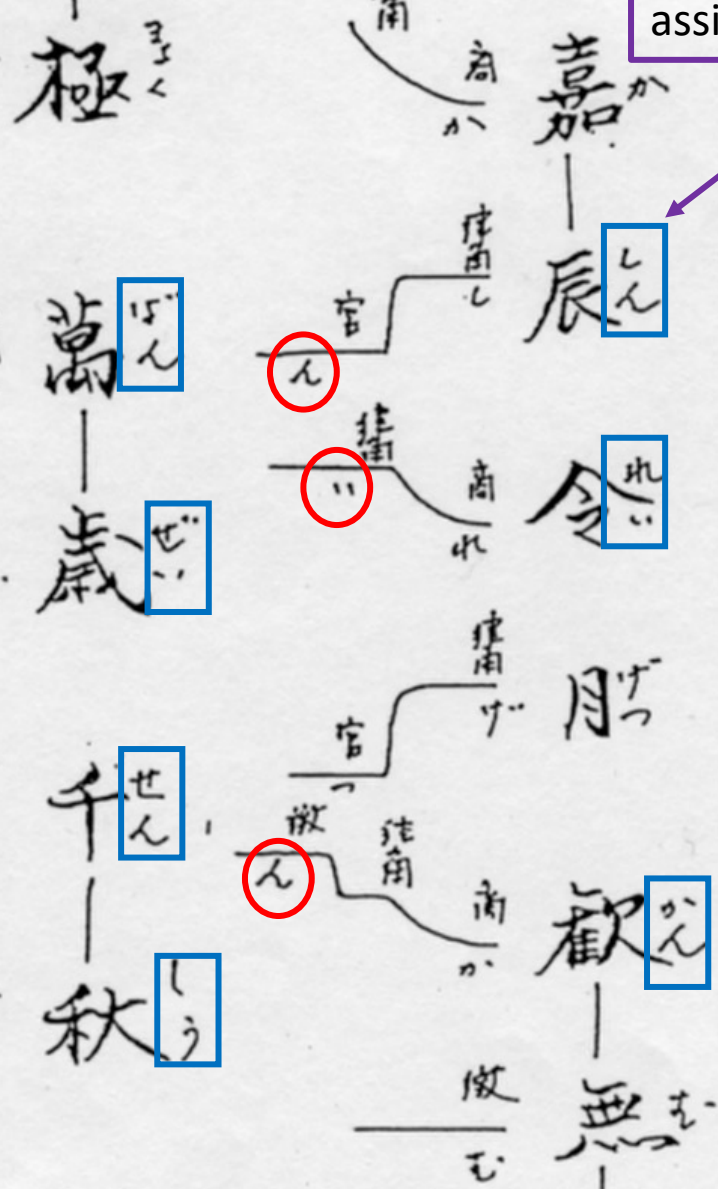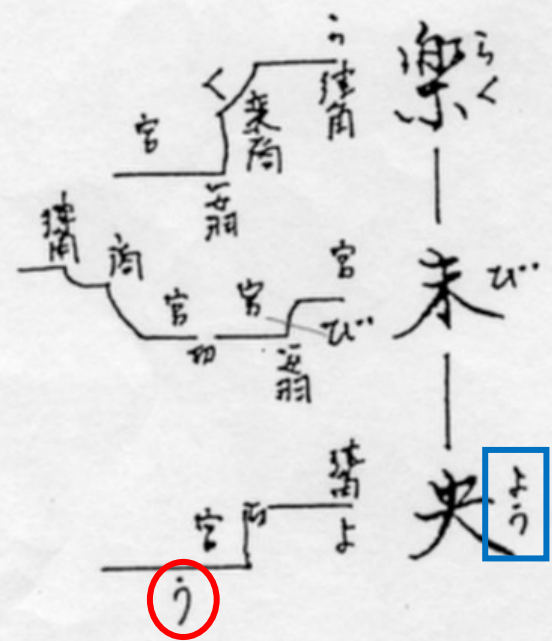
Words and music in Kagoshima

ちゃわんむしの歌

One syllable with /N, H, Q, V/ is assigned to one note.

Lyrics & Music: Ishiguro Hide (石黒ヒデ)

茶わんむし

久保けんお 採譜

うんどもこら　いけなもんな　あたいけどん　ちゃわんたんな

ひにひにさんども　あるもんせば　きれいなもん　じゃん　さあ

ちゃわんについた　むしじゃろかい　めごなどけあるく

むしじゃろかい　まことてげんねこっじゃ　わっはっはー

むし (CVCV) → むっ (CVQ)

Words and music

- In Kyoto-Osaka, one long syllable is (always) assigned to two notes.
    - ABU: Mora, TBU: Mora

- In Kagoshima, one long syllable is (always) assigned to one note.
    - ABU: Syllable, TBU: Syllable

- Vance shows that in Tokyo, one long syllable is assigned to one note or two notes.
    - ABU: Syllable, TBU: Mora

Words and music in Tokyo

『だんご3兄弟』

- NHK song
- Released in 1999.
- Became a social phenomenon.
  - Sold 3M CDs!

- 『だんご3兄弟（さんきょうだい）』 contains a lot of long syllables.

Words and music in Tokyo

だんご3兄弟

https://www.youtube.com/watch?v=PfI3JiY5xS4

Syllable boundaries and pitch accent

- We can use the difference in the ABU and the TBU in Tokyo Japanese to identify syllable boundaries.
  - ABU: Syllable, TBU: Mora

- In <u>some compounds</u>, the second element assigns a pitch accent to the preceding syllable in Tokyo Japanese.
  - "Preaccentuation" by McCawley (1968)
  - し（市）'city' is preaccented.

Syllable boundaries and pitch accent

- くれし：呉市 'Kure City, Hiroshima Prefecture'
  - /ku.re/ (2 syllables; 2 moras) + /ši/ → /ku.ré.ši/ (LHL)

- あきたし：秋田市 'Akita City, Akita Prefecture'
  - /a.ki.ta/ (3 syllables; 3 moras) + /ši/ → /a.ki.tá.ši/ (LHHL)

- くまもとし：熊本市 (Kumamoto City, Kumamoto Prefecture)
  - /ku.ma.mo.to/ (4 syllables; 4 moras) + /ši/ → /ku.ma.mo.tó.ši/ (LHHHL)

- Note: . indicates a syllable boundary.

Syllable boundaries and pitch accent

- せんだいし：仙台市 (Sendai City, Miyagi Prefecture)
  - /seN.dai/ (2 syllables; 4 moras) + /ši/ → /seN.dái.ši/ (LHHLL)
  - */seN.daí.ši/ (LHHHL)

- にっこうし：日光市 (Nikko City, Tochigi Prefecture)
  - /niQ.koH/ (2 syllables; 4 moras) + /ši/ → /niQ.kóH.ši/ (LHHLL)
  - */niQ.koH.ši/ (LHHHL)

- むろらんし：室蘭市 (Muroran City, Hokkaido Prefecture)
  - /mu.ro.raN/ (3 syllables; 4 moras) + /ši/ → /mu.ro.rán.ši/ (LHHLL)
  - */mu.ro.raŃ.ši/ (LHHHL)

Syllable boundaries and pitch accent

- Is there a syllable boundary?

- ムンバイ市 'Mumbai City'
  - /muNbáiši/ (LHHLL)

- ハノイ市 'Hanoi City'
  - /hanóiši/ (LHLL)

- クラカウ市 'Krakau City'
  - /kurakáuši/ (LHHLL)

- ビサウ市 'Bissau City'
  - /bisáuši/ (LHLL)

- マナグア市 'Managua City'
  - /managuáši/ (LHHHL)

- ムンバイ市 'Mumbai City'
  - /muN.bái.ši/ → No

- ハノイ市 'Hanoi City'
  - /ha.nói.ši/ → No

- クラカウ市 'Krakau City'
  - /ku.ra.káu.ši/ → No

- ビサウ市 'Bissau City'
  - /bi.sáu.ši/ → No

- マナグア市 'Managua City'
  - /ma.na.gu.á.ši/ → Yes

Syllable boundaries and pitch accent

- In Osaka Japanese, し（市）'city' assigns a pitch accent to the preceding mora.
  - ムンバイ市 'Mumbai City'   /mu.N.ba.í.ši/ (HHHHL)
  - ハノイ市 'Hanoi City'   /ha.no.í.ši/ (HHHL)
  - クラカウ市 'Krakau City'   /ku.ra.ka.ú.ši/ (HHHHL)
  - ビサウ市 'Bissau City'   /bi.sa.ú.ši/ (HHHL)
  - マナグア市 'Managua City'   /ma.na.gu.á.ši/ (HHHHL)
  - 仙台市 'Sendai City'   /se.N.da.í.ši/ (HHHHL)
  - 日光市 'Nikko City'   /ni.Q.ko.H.ši/ (HHHHL)
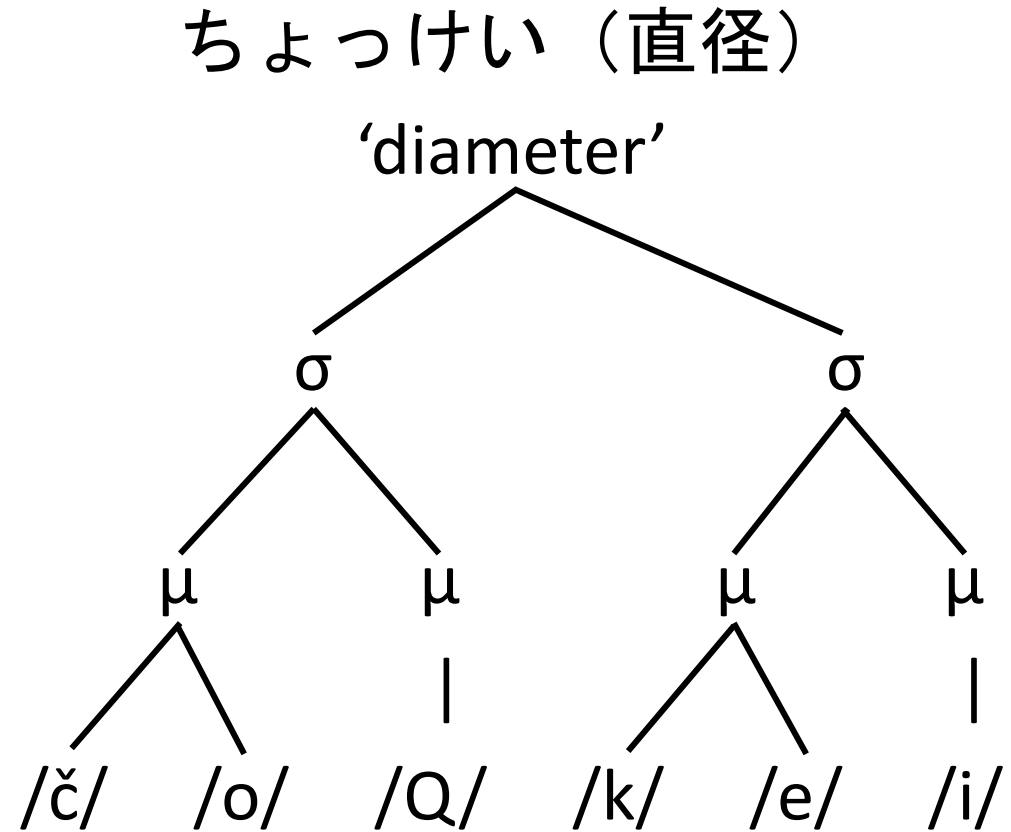 - 室蘭市 'Muroran City'   /mu.ro.ra.Ń.ši/ (HHHHL)

- Note: . indicates a mora boundary.

Exercise

- Draw the syllable/mora structure for each of the following words.
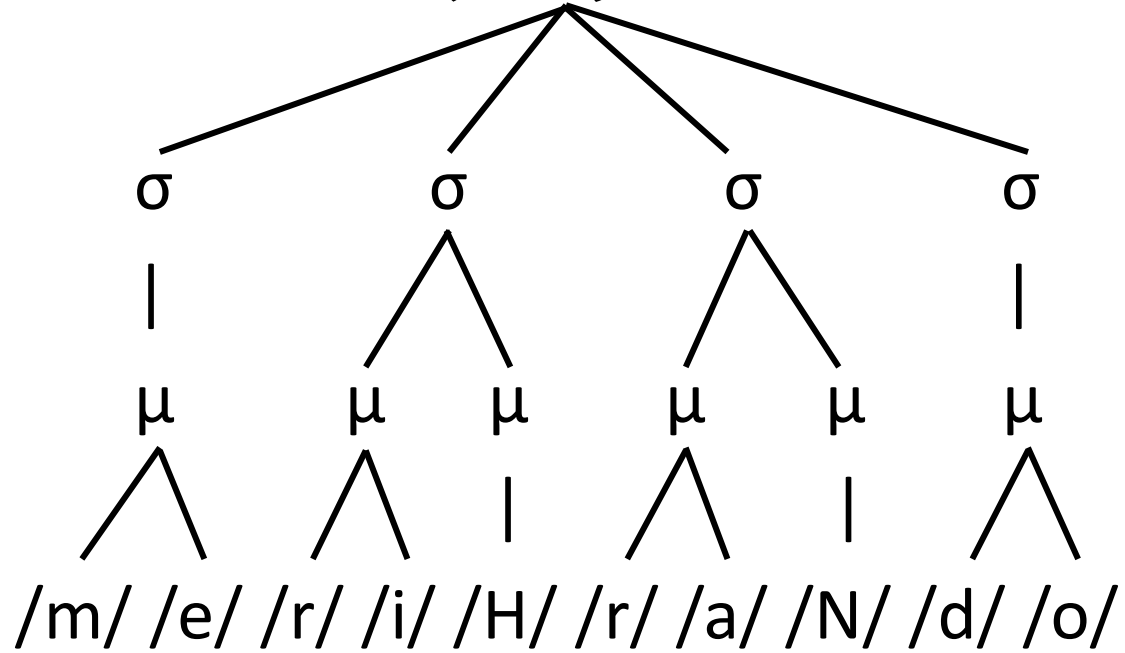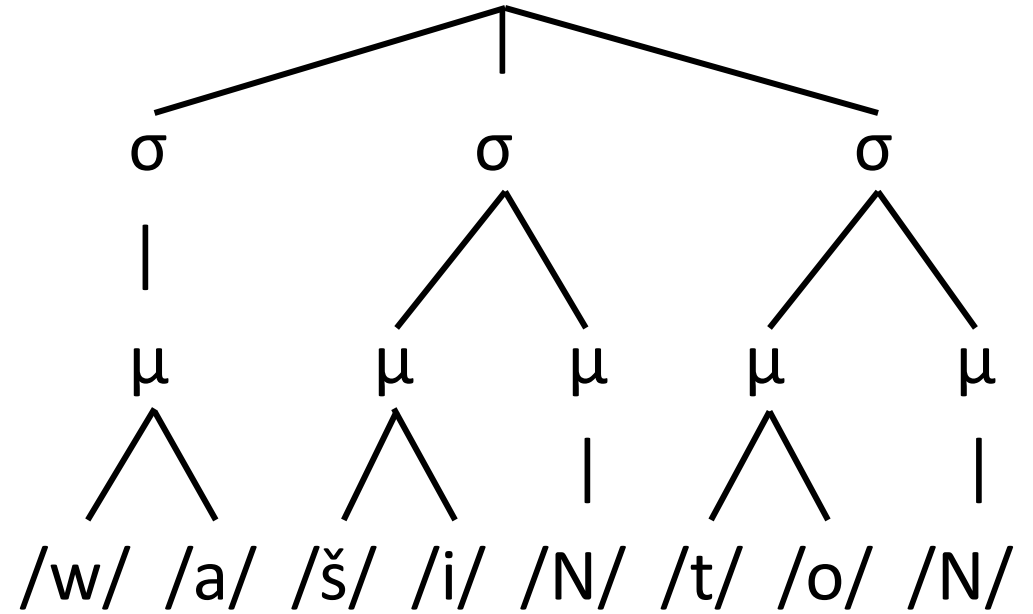
1. メリーランド
2. ワシントン

ちょっけい（直径）
'diameter'

Exercise

メリーランド

σ   σ   σ   σ

μ   μ μ   μ μ   μ

/m/ /e/ /r/ /i/ /H/ /r/ /a/ /N/ /d/ /o/

ワシントン

σ   σ   σ

μ   μ μ   μ μ

/w/ /a/ /š/ /i/ /N/ /t/ /o/ /N/

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- Kubozono, Haruo. 2018. Focus prosody in Kagoshima Japanese. In *The study of word stress and accent: Theories, methods and data*, 323-345. Cambridge University Press.

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  https://www.youtube.com/watch?v=Eb_GRfzCAT8&list=PL35aTSsoiC-A8Q9oucV0VeSNCHW6scpVa&index=3