

W8-1: Sequential voicing (連濁)

JAPN398D: The Sounds and Dialects of Japanese

10/16/2023

Today's class

- What is rendaku?
- Historical background
- Lyman's Law
- Vocabulary strata
- Reduplication
- The right-branch condition
- Coordinate compounds
- Japanese family/place names
- Experimental studies

What is rendaku?

- Rendaku (連濁) is the voicing of the word-initial voiceless obstruent of the second element of a two-element compound.
 - “Sequential voicing” in English

- Example

- かいてん (回転) ‘rotation’
- すし (寿司) ‘sushi’
- かいてんずし (回転寿司) ‘conveyor belt sushi’



What is rendaku?

- Sound alternations (phonetic)

- [ɸ] → [b]
- [ç] → [b]
- [h] → [b]
- [t] → [d]
- [cç] → [tʃ]
- [ts] → [dz]
- [s] → [dz]
- [ç] → [tʃ]
- [k] → [g] ([ŋ] in Tokyo Japanese)

- Orthographic alternations

- ふ → ぶ
- ひ → び
- はへほ → ばべぼ
- たてと → だでど
- ち → ぢ
- つ → づ
- さすせそ → ざずぜぞ
- し → じ
- かきくけこ → がぎぐげご

What is rendaku?

- はひふへほ → ばびぶべぼ ([h, ç, φ] → [b]) for historical reasons.
 - はひふへほ used to be ぱぴぷぺぽ in the past.
- 四つ仮名（じぢずづ）
 - じ and ぢ have the same pronunciation.
 - 生地 ‘cloth’ used to be spelled きぢ in hiragana, but now it is きじ.
 - ず and づ have the same pronunciation.
 - 屑 ‘scrap’ used to be spelled くづ in hiragana, but now it is くず.
- In rendaku, the diacritic for voicing ˘ is just added.
 - はなぢ（鼻血）‘nosebleed’

Historical background

- It has been claimed that prenasalization in Old Japanese (8th century; Nara Period) is responsible for rendaku.
- Obstruents /p, t, k, s, b, d, g, z/ in Old Japanese (Frellesvig 2010)
 - Word-initial voiced obstruents were not permitted.
 - Voiceless obstruents became voiced between vowels.
 - Voiced obstruents were **prenasalized**.
- /pa**ta**, pa**da**/ → [pa**da**, pãⁿ**da**]



Historical background

- たなばた (七夕) /tanabata/
 - Old Japanese (Nara): [tãnã^mbada]
 - Contemporary Japanese (Kyoto-Osaka-Nara): [t^hanabat^ha]



- Prenasalization and intervocalic voicing were lost in Late Middle Japanese (1200-1600) in Kyoto-Osaka.

Historical background

- すずり (硯) ‘inkstone’
 - すみ (墨) ‘india ink’ + すり (磨り) ‘rubbing’
- Vance (2015): (5)
 - [sumisuri] すみすり
 - [sũmsuri] すむすり (“i” gets dropped.)
 - [sũmzuri] すむずり (“s” gets voiced.)
 - [sũn(d)zuri] すんずり (nasal place assimilation)
 - [su(d)zuri] すずり (“n” gets dropped due to the loss of prenasalization.)



Historical background

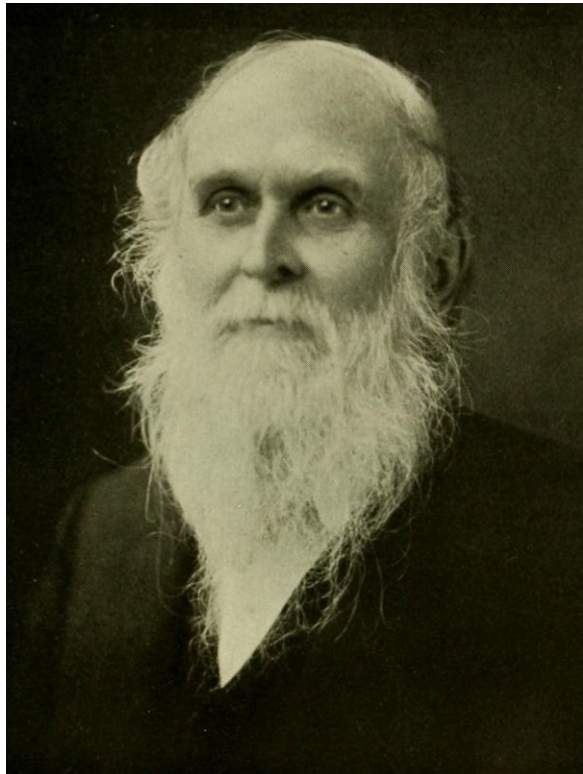
- Genitive case marker =*no* (Frellesvig 2010)
 - Vowel reduction triggered rendaku.
- Example in Old Japanese (Frellesvig 2010: (17))
 - [sakura] (桜) ‘cherry’
 - [pana] (花) ‘flower’

- Derivation
 - さくらの^oぱな (桜の花)
 - sakura-**no**-pana
 - sakura-**n**-pana
 - sakura-n-**b**ana
 - sakura-**m**-bana
 - sakura^m**b**ana
 - sakura**b**ana
 - さくら^{ba}ばな (桜花)



Lyman's Law

Benjamin Smith Lyman (1835-1920)
お雇い外国人 'hired foreigner(s)'



賀茂真淵 (1697-1769)
本居宣長 (1730-1801)



All Public Domain

Lyman's Law

- Rendaku is blocked when the second element of a two-element compound already contains a voiced obstruent (゛).
 - がぎぐげご・ぎじずぜぞ・だ(ぢ) (づ) でど・ばびぶべぼ



• Examples

- あま (甘) + かき (柿) → あまがき (甘柿) 'sweet persimmon'
- あい (合) + かぎ (鍵) → あいかぎ (合鍵) 'spare key'

Lyman's Law

ゼルダの伝説 夢をみる島 Link's Awakening



(おまけ)
たび (旅) + たち (立ち) → たび**だ**ち (旅立ち)

コホリントしま？
コホリントじま？



ハロー！うるりらじいさんじゃ！今日は待ちに待った発売日！おぬしらの旅立ちの日じゃな。不思議な島での不思議な冒険が待っておるぞ！ようこそ、**コホリント島**へ！

<https://www.nintendo.co.jp/switch/ar3na/index.html>

2019.9.19

Lyman's Law

"You must still be feeling a little woozy.
You are on Koholint Island!"



しま（島） does not contain a voiced obstruent. → Rendaku

Lyman's Law

- In each group, discuss how Lyman's Law applies to Japanese compounds.
- Are there any exceptions?

Vocabulary strata

- Rendaku applies to native Japanese words in general.
 - Native words > Sino-Japanese words > (Western) loanwords
 - Native words = ひらがな・訓読み; SJ words = 音読み; Loanwords = カタカナ
- Example
 - い（胃）‘stomach’ + カメラ ‘camera’ → 胃**カ**メラ ‘gastro-camera’
 - カメラ ‘camera’ is a loanword and never undergoes rendaku.
- Note: We are discussing **Element 2** of two-element compounds.

Vocabulary strata

- Most kanji words are read in on-yomi, but some are read in kun-yomi.
 - べんきょう（勉強）‘study’: Sino-Japanese
 - 勉：ベン・つと（める）
 - 強：キョウ・つよ（い）
 - はなび（花火）‘fireworks’: Native
 - 花：カ・はな
 - 火：カ・ひ
 - 花火 undergoes rendaku because the second element is a native word.

Vocabulary strata

- 重箱（じゅう**ば**こ）読み → Element 1: on & Element 2: kun
 - 重：ジュウ・かさ（ねる）・おも（い）
 - 箱：ソウ・はこ
 - はこ undergoes rendaku because it is native.
 - Other examples: 本棚（ホン**だ**な）・台所（ダイ**ど**ころ）
- 湯桶（ゆ**と**う）読み → Element 1: kun & Element 2: on
 - 湯：トウ・ゆ
 - 桶：トウ・おけ
 - とう does not undergo rendaku because it is Sino-Japanese.
 - Other examples: 場所（ば**し**ョ）・見本（み**ホ**ン）



Vocabulary strata (Exceptions)

- Some native words are immune to rendaku.
 - すな (砂) ‘sand’ + けむり (煙) ‘smoke’ → すな**け**むり (砂煙) ‘clouds of sand’
 - けむり (煙) ‘smoke’ is a native word, but never undergoes rendaku.
- “Nativized” Sino-Japanese words and Western loanwords undergo rendaku.
 - かぶしき (株式) ‘stock’ + かいしゃ (会社) ‘company’ → かぶしき**が**いしゃ (株式会社) ‘stock company’
 - うた (歌) ‘poem’ + かるた ‘playing cards; Por. *carta*’ → うた**が**るた (歌がるた) ‘poem cards’
 - かいしゃ (会社) ‘company’ = SJ word; かるた ‘playing cards’ = Loanword

Vocabulary strata

- Element 1 can be a word from any vocabulary stratum.

<https://www.yoshino-sushi.co.jp/shopping/hako.htm>

- Examples with すし (寿司) as Element 2

- Native word

- はこ (箱) 'box' → はこずし (箱寿司) 'box sushi'

- Sino-Japanese word

- かいてん (回転) 'rotation' → かいてんずし (回転寿司) 'conveyor belt sushi'

- Western loanword

- アボカド 'avocado' → アボカドずし (アボカド寿司) 'avocado sushi'



Reduplication

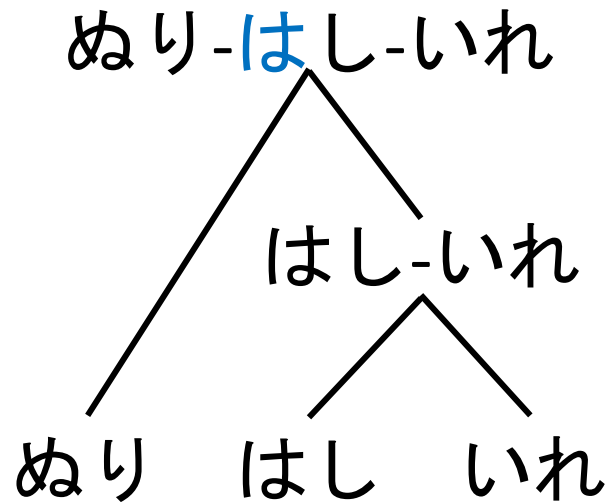
- Reduplicated mimetic words do not exhibit rendaku.
 - てく + てく → てく **て**く ‘stride-stride’
- Reduplicated regular words undergo rendaku in general (provided Lyman’s Law is not violated).
 - ひと（人）‘person’ → ひと **び**と（人々）‘people’
 - とき（時）‘time’ → とき **ど**き（時々）‘sometimes’
 - The iteration mark 々 appears in these words.

The right-branch condition

- Rendaku is blocked in the second member of a right-branching compound (Kubozono 2005: (15)).
- Example (Otsu 1980)
 - /ぬり 'lacquered' + はし 'chopstick' + いれ 'case'/ is structurally ambiguous.
 - [ぬり + [はし + いれ]] → ぬり-はし-いれ 'lacquered [chopstick case]'
 - [[ぬり + はし] + いれ] → ぬり-ばし-いれ '[lacquered chopstick] case'
- However, the status of the constraint is controversial.
 - What is [ぬり + [はし + いれ]]??? Does the word really exist???
 - I would put a pause between ぬり and はし.

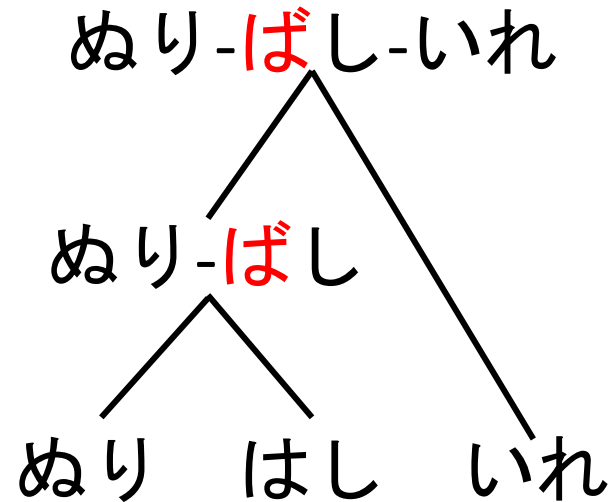
The right-branch condition

Right-branching



‘lacquered [chopstick case]’

Left-branching



‘[lacquered chopstick] case’

Rendaku is blocked in the second member of a right-branching compound.

Coordinate compounds

- Rendaku does not occur when the relationship between Element 1 and Element 2 is 'Element 1 and Element 2' (= coordination).
- Examples
 - おや（親） 'parent' + こ（子） 'child' → おやこ（親子）
 - くさ（草） 'grass' + き（木） 'tree' → くさき（草木）
- Reduplicated nouns are exceptions.
 - ひと（人） 'person' → ひとびと（人々） 'people'
 - とき（時） 'time' → ときどき（時々） 'sometimes'

Japanese family/place names

- 訓読み is used for Japanese family names. → Rendaku
 - みなみ (南) + た (田) → みなみだ (南田)
- Kubozono (2005) claims that Lyman's Law applies to the whole name.
- Examples
 - しま (島) : ながしま (長島) vs. なかしま (中島)
 - さき (崎) : ながさき (長崎) vs. なかざき (中崎)

Japanese family/place names



- 茨城（県） is いばらき（けん） .
 - A common mispronunciation is いばらぎ（けん） .
- The two pronunciations probably come from the difference in the domain of Lyman's Law.
- いばら-き（茨-城）
 - いばらき → Lyman's Law applies to the whole name.
 - いばらぎ → Lyman's Law applies to only き.

In Kyushu, rendaku sometimes does not apply to family names.

Japanese family/place names

なかしま (中島) cf. なかじま
中島美嘉 (なかしま・みか) さん
鹿児島県出身



<https://commons.wikimedia.org/wiki/File:Mika-Nakashima-HKAMF2018.png>

はまさき (浜崎) cf. はまざき
浜崎あゆみ (はまさき・あゆみ) さん
福岡県出身



https://commons.wikimedia.org/wiki/File:Ayumi_Hamasaki_2007.jpg

In Kyushu, rendaku sometimes does not apply to family names.

Japanese family/place names

たかた (高田) cf. たかだ
高田明 (たかた・あきら) さん
長崎県出身



<https://www.youtube.com/watch?v=TGycLvyljNE>

たけた (武田) cf. たけだ
武田真一 (たけた・しんいち) さん
熊本県出身



<https://www.ntv.co.jp/dayday/cast/>

Experimental studies

- A number of experimental studies have been conducted to test the psychological reality of rendaku.
- Kawahara's (2016) summary
 - Grammatical vs. Lexical
 - Vocabulary strata
 - The right-branch condition
 - Lyman's Law

Grammatical vs. Lexical

- Is rendaku a grammatical process or a lexicalized pattern?
 - ひら^がな (Rendaku) vs. かた^かな (No rendaku)
- Grammatical
 - /hira + kana/ → /hiragana/
 - /kata + kana/ → /katakana/ (exception)
 - The コホリント島 example supports this hypothesis.

Grammatical vs. Lexical

- Is rendaku a grammatical process or a lexicalized pattern?
 - ひらがな (Rendaku) vs. かたかな (No rendaku)
- Lexical
 - ひらがな is underlyingly /hiragana/.
 - かたかな is underlyingly /katakana/.
 - Irregularities and exceptions support this hypothesis.

Grammatical vs. Lexical

- Fukuda and Fukuda's (1999) experiment
- Participants
 - Target: Children with specific language impairment (SLI)
 - Control: Children without SLI
- People with SLI cannot apply productive grammatical rules.
 - Children with SLI fail to apply rendaku to compounds → Grammatical
 - Children with SLI apply rendaku to compounds → Lexical

Grammatical vs. Lexical

- Results

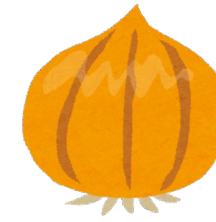
- The SLI children did not apply rendaku to infrequent or novel compounds.
 - e.g. ことば**つ**かい
 - Non-SLI children said ことば**づ**かい（言葉遣い）‘language use’.
- The SLI children applied rendaku to familiar compounds.
 - e.g. なが**ぐ**つ（長靴）‘rain boots/shoes’

- Rendaku is both grammatical and lexical.



淡路島は、玉ねぎで有名です！

Grammatical vs. Lexical



- The dual nature of rendaku seems intuitively correct to me.

- コホリント島（**じ**ま） → Fictional (Grammatical)
- 淡路島（あわ**じ**ま） → Non-fictional (Lexical)
 - 松島（まつ**し**ま） in Miyagi → Non-fictional (Lexical)

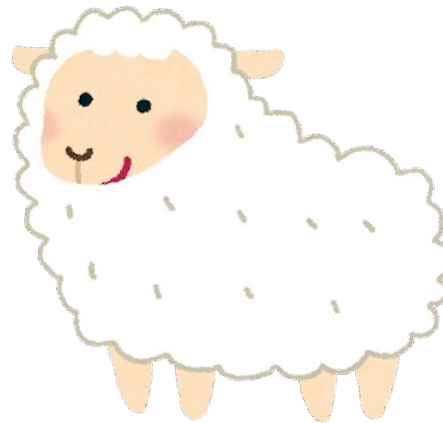


- Endocentric and exocentric compounds

- Endocentric compounds: Head + Modifier or Modifier + Head
 - ことば**づ**かい（言葉遣い）‘language use’ → Object + Noun
- Exocentric compounds: No clear Head + Modifier relationship
 - な**が**ぐつ（長靴）‘rain boots/shoes’ → The meaning of 長い is bleached.

Kawahara's (2012) experiment

- にせ (偽) 'fake'
- にせ + たぬき → にせだぬき
- にせ + ひつじ → にせひつじ



Kawahara's (2012) experiment

5: “very natural” \leftrightarrow 1: “very unnatural”

1. When you create a compound with にせ (偽) ‘fake’ and たむま, how natural would you find it to pronounce it as にせ + **だ**むま (as opposed to にせ + **た**むま)?
2. When you create a compound with にせ (偽) ‘fake’ and とずみ, how natural would you find it to pronounce it as にせ + **ど**ずみ (as opposed to にせ + **と**ずみ)?
3. When you create a compound with にせ (偽) ‘fake’ and とみば, how natural would you find it to pronounce it as にせ + **ど**みば (as opposed to にせ + **と**みば)?

Kawahara's (2012) experiment

- にせだむま was more natural than にせどずみ and にせどみば for the participants.
 - → Lyman's Law
- にせどずみ and にせどみば were equally unnatural for the participants.
 - → No locality effect?

にせだむま : 3.42
にせどずみ : 2.76
にせどみば : 2.86



References (1/2)

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