



Multilingual Children's Speech Development

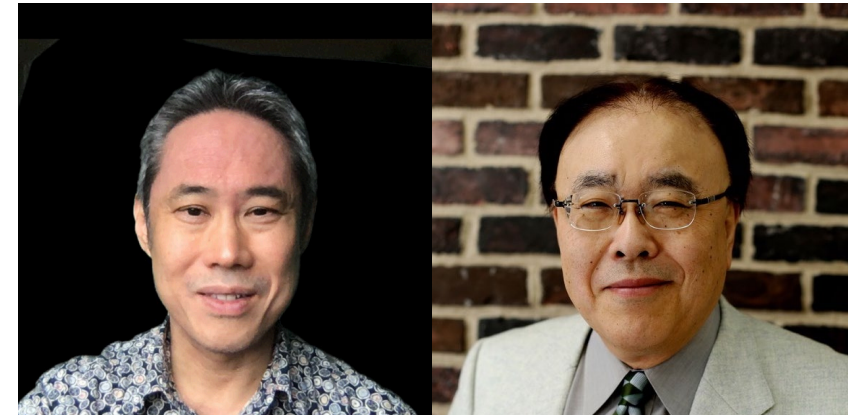
JAPANESE

Multilingual Children's Speech Development

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Japanese Authors

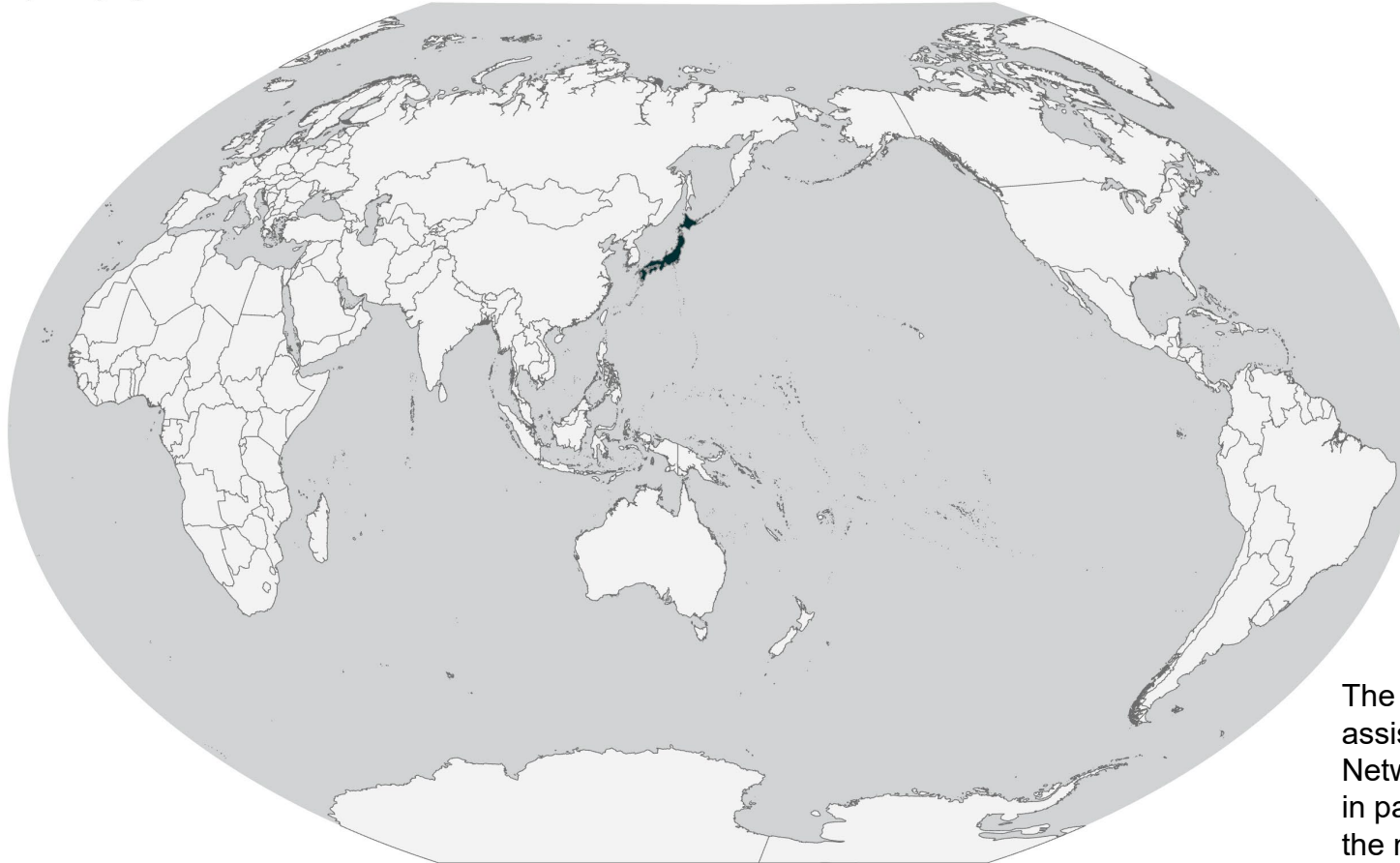
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Source: Ota, M., & Ueda, I. (forthcoming). Japanese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Japanese Map

Official / major language



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Japanese

- **Commonly spoken in**

- Japan

- **Dialects and variants**

- Major dialects include: Kantō (Eastern), Kansai (Western), Tōhoku (Northeastern), Ryūkyūan (Okinawan)
 - Standard Japanese (Hyōjungo) is similar to the Kantō dialect spoken in Tokyo

Japanese

■ Writing

- Left-to-right or top-to-bottom
- Three symbol types
 - **kanji** (ideographic; word stems)
 - **hiragana** (syllabic; inflections and bound morphemes)
 - **katakana** (syllabic; loanwords)
- Example: 友達とテレビを見た。
tomodachi to terebi o mi ta
friends with TV OBJECT watch PAST
(I) watched TV with my friends

友
達
と
テ
レ
ビ
を
見
た
。

Top-to-bottom version

Japanese Speech Components

- **Consonants (15 basic phonemes + allophones):**
/p, b, t, d, k, g, m, n, r, s, z, h, w, j, ɲ, ɕ, ʃ, tɕ, dʒ, tɕ, ɲ/
- **Consonant clusters (7):** /pj, bj, kj, gj, ɕj, mj, rj/
- **Vowels (10):** /a, i, u, e, o, a:, i:, u:, e:, o:/
- **Phonotactic restrictions:** $C_{(0-1)}(j)_{(0-1)}V_{(1-2)}C_{(0-1)}$
- **Prosody:**
 - No lexical stress, but lexical pitch accent.
 - Mora-timing that assigns one timing unit to a light/monomoraic syllable ((C)V) but two to a heavy/bimoraic syllable ((C)VC or (C)V:).

Japanese

Age of Acquisition

■ Consonants

- **Early** /t, d, n, ŋ/
- **Middle** /b, p, k, g, m, n, ɲ, φ, ɛ, h, j, w/
- **Late** /ç, s, z, r/

■ Consonant clusters

- 75% correct 3;0 years: /mj, pj, bj/, 3;6 years: /kj, gj, çj/ by, 4;5 years: /rj/

■ Vowels

- 1;1-2;3 years: Mastery of simple vowels
- 1;4-1;7 years: Distinction between short and long vowels

■ Pitch accent

- Overall pitch pattern of simple words by 3;0 year;
however, the timing of pitch accent acquisition varies across dialects

Japanese Speech Development

■ Percentage correct

- At 4;6, the consonants with the lowest PCC are initial /r/ (73.3%), initial/final /ʈ/ (76.7%) and initial /z/ (78.3%)

■ Intelligibility

- 3;0 - 4;8 years: 90.2% (word-level), 89.3% (syllable-level) when judged by strangers

■ Common phonological patterns

- Stopping, palatalization, affrication, deaffrication, rhotacization, deletion of /h/ and /r/, fronting, backing, metathesis, consonant harmony, omission of syllables

Japanese Children with Speech Sound Disorders

■ Also called

- 発音障害 /go.onŋo:/ → speech sound disorder
- 発音障害 /ko: onŋo: gai/ → articulation disorder
- 発音障害 /ŋo: ni hatsu go ŋi k: o:/ → childhood apraxia of speech
- 発音障害 /u ndo: ŋo: gaise: ko: onŋo: gai/ → dysarthria
- Research has focused on: Prevalence, assessment, interventions

■ Studies (examples)

- Consonant acquisition in monolingual 3;0 to 5;3-year-olds (Funayama et al., 1989)
- Phonological process decline in 2- to 6-year-olds (Nakamura et al., 2014)

Japanese Speech Assessments

- **新訂版ことばのテストえほん Shinteiban Kotoba no Tesuto Ehon**
 - [Revised Word Test Picture Book] (Taguchi & Ogawaguchi, 1992)
- **構音発達予測検査 Kōon Hattatsu Yosoku Kensa**
 - [Articulation Development Prognosis Test] (Nagasawa et al., 1985)
- **構音検査法 Kōon Kensahō**
 - [Articulation Test Method] (The Japan Society of Logopedics and Phoniatrics, 2012)
- **Japanese Phonology Test**
 - (Hara et al., 2012, Ueda & Bernhardt, 2022)

Japanese Speech Interventions

- **Segment-by-segment or mora-by-mora imitation, contextual utilization, phonetic placement, minimal pair training and successive approximation**
 - Kotera (1992); Taguchi (1996)
- **Traditional Articulation Therapy**
 - Van Riper and Erickson (1996)
- **Cycles Therapy**
 - Hodson and Paden (1991)
- **Other linguistically-oriented approaches**
 - Imamura & Sakamoto (2002); Ueda (2004)

Reference

Book chapter

- Ota, M., & Ueda, I. (forthcoming). Japanese speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

Presentation

- Ota, M., & Ueda, I. (2023). *Japanese: Multilingual children's speech development*. Charles Sturt University, Australia.
<https://www.csu.edu.au/research/multilingual-speech/languages>
 - Sharynne McLeod, Charles Sturt University, Australia
 - Helen L. Blake, University of Technology Sydney, Australia