

Information about Japanese speech

1. A comparison between Japanese and English phonology

Aspect	Language	Number	Details	Source
Syllable-initial consonants	Japanese	15 consonants	/p, b, t, d, k, g, m, n, (ɲ), ɲ, N, r, (ɸ), s, z, (ç), h, j, w, (ç), (z), (ts), (cç), (jz)/	Ota & Ueda (2007)
	English	24 consonants	/p, b, t, d, k, g, m, n, ɲ, θ, ð, f, v, s, z, ʃ, ʒ, h, tʃ, ʤ, j, w, ɹ, l/	Smit (2004)
Consonant clusters	Japanese	Two element syllable-initial /j/ clusters only	For example, /kj, mj, rj/	Ota & Ueda (2007)
	English	Approx. 29 syllable-initial and many syllable-final consonant clusters	Many 2 and 3 element consonant clusters in initial position including /pl, bl, kl, gl, fl, sl, pɹ, bɹ, tɹ, dɹ, kɹ, gɹ, θɹ, fɹ, ʃɹ, pj, tj, fj, mj, nj, sm, sn, sp, st, sk, spl, spɹ, stɹ, skw/ and many 2 to 4 element consonant clusters in final position	McLeod (2007) Smit (2004)
Vowels and diphthongs	Japanese	10 vowels	Vowels: /i, i:, e, e:, u, u:, o, o:, a, a:/	Ota & Ueda (2007)
	English (US-General American)	14 vowels + 3 diphthongs	Vowels: /i, ɪ, e, ɛ, æ, ə, ɜ, ɝ, u, ʊ, o, ʌ, ɔ, ɑ/ Diphthongs: /aɪ, aʊ, ɔɪ/ (Smit also lists 5 'r'-colored diphthongs)	Smit (2007)
	English (Canadian)	14 vowels + 3 diphthongs	Vowels: /i, ɪ, e, ɛ, æ, ə, ɜ, ɝ, ʊ, ʊ, o, ʌ, ɔ, ɑ/ Diphthongs: /aɪ, ʌʊ, ɔɪ/	Bernhardt, & Deby (2007)
	English (UK-Received Pronunciation)	12 vowels + 8 diphthongs	Vowels: /i, ɪ, e, æ, a, ə, ɜ, u, ʊ, ʌ, ɔ, ɒ/ Diphthongs: /aɪ, aʊ, ɔɪ, eɪ, oʊ, ɪə, eə, ʊə/	Howard (2007)
	English (Australian)	12 vowels + 8 diphthongs	Vowels: /i:, ɪ, e, æ, ɐ, ɐ, ɔ, o:, ʊ, ʊ, ɜ:, ɜ:/ ⁱ OR /i, ɪ, e, æ, a, ʌ, ɒ, ɔ, ʊ, u, ɜ, ə/ ⁱⁱ Diphthongs: /æɪ, æɐ, əɐ, æɔ, ɔɪ, ɪə, eɪ, ʊə/ ⁱ OR /eɪ, aɪ, oʊ, aʊ, ɔɪ, ɪə, eə, ʊə/ ⁱⁱ	ⁱ Harrington, Cox, & Evans, (1997) ⁱⁱ Mitchell (1946)
	English (New Zealand)	12 vowels + 8 diphthongs	Vowels: /i, ɪ, e, æ, ə, ɜ, u, ʊ, ʌ, ɔ, ɒ, ɑ/ ⁱ OR /i, ɪ, e, æ, a, ə, ɜ, ʊ, ʌ, ɔ, ɒ/ ⁱⁱ Diphthongs: /aɪ, aʊ, ɔɪ, eɪ, oʊ, ɪə, eə, ʊə/ ⁱ OR /aɪ, aʊ, ɔɪ, eɪ, oʊ, ɪə, eə, ʊə/ ⁱⁱ	ⁱ Bauer & Warren (2004) ⁱⁱ MacLagan (2009)
Tones	Japanese	Lexical pitch	Lexical pitch accent language	Ota & Ueda (2007)
	English	0 tones	-	
Syllable shape	Japanese	C(j)VVC		Ota & Ueda (2007)
	English	C ₍₀₋₃₎ VC ₍₀₋₄₎	Smallest is V and the largest is CCCVCCCC.	Smit (2007)

Stress	Japanese		No lexical stress	Ota & Ueda (2007)
	English	Stress-timed	Syllables can be strong or weak. Stress also is used for emphasis.	
Varieties	Japanese	Many dialects		
	English	Many dialects	Many dialects including General American English, Received Pronunciation (England), Scottish English, Irish English, Australian English, New Zealand English, South African English etc.	
Writing system	Japanese	3 scripts: kanji, hiragana, katakana	3 scripts: kanji, hiragana, katakana.	
	English	Roman script	Roman script loosely related to phonetic realizations of the consonants and vowels.	

References

Japanese studies

Ota, M., & Ueda, I. (2007). Japanese speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 457-471). Clifton Park, NY: Thomson Delmar Learning.

English studies

Bauer, L., & Warren, P. (2004). New Zealand English: Phonology. In E. Schneider, K. Burridge, B. Kortmann, R. Mesthrie & C. Upton (Eds.). *A handbook of varieties of English: Vol. 1. Phonology* (pp. 580-602). Berlin, Germany: Mouton de Gruyter.

Bernhardt, B. M. H., & Deby, J. (2007). Canadian English speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 177-187). Clifton Park, NY: Thomson Delmar Learning.

Harrington, J., Cox, F., & Evans, Z. (1997). An acoustic phonetic study of broad, general, and cultivated Australian English vowels. *Australian Journal of Linguistics*, 17, 155-184.

Howard, S. (2007). English speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 188-203). Clifton Park, NY: Thomson Delmar Learning.

Maclagan, M. (2009). Reflecting connections with the local language: New Zealand English. *International Journal of Speech-Language Pathology*, 11(2), 113-121.

McLeod, S. (2007). Australian English speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 241-256). Clifton Park, NY: Thomson Delmar Learning.

Mitchell, A. G. (1946). *The pronunciation of English in Australia*. Sydney, Australia: Angus & Robertson.

Smit, A. B. (2004). *Articulation and phonology: Resource guide for school-age children and adults*. Clifton Park, NY: Thomson Delmar Learning.

Smit, A. B. (2007). General American English speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 128-147). Clifton Park, NY: Thomson Delmar Learning.

Comparative summaries

Thompson, I. (2001). Japanese speakers. In M. Swan & B. Smith (Eds.), *Learner English: A teacher's guide to interference and other problems* (pp. 296-309). Cambridge: Cambridge University Press.

2. Japanese speech assessments

For a list of speech assessments in Japanese see: www.csu.edu.au/research/multilingual-speech/speech-assessments

Intelligibility in Context Scale: Japanese www.csu.edu.au/research/multilingual-speech/ics

3. Monolingual speech acquisition (summaries and studies written in English)

Ota, M., & Ueda, I. (2007). Japanese speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 457-471). Clifton Park, NY: Thomson Delmar Learning.

4. Multilingual speech acquisition (summaries and studies written in English)

General summaries

Goldstein, B. A., & McLeod, S. (2012). Typical and atypical multilingual speech acquisition. In S. McLeod & B. A. Goldstein (Eds.), *Multilingual aspects of speech sound disorders in children* (pp. 84-100). Bristol, UK: Multilingual Matters.

Grech, H., & McLeod, S. (2012). Multilingual speech and language development and disorders. In D. Battle (Ed.), *Communication disorders in multicultural and international populations* (4th ed., pp. 120-147). St Louis, MO: Elsevier.

Zhu Hua & Dodd, B. (Eds.). (2006). *Phonological development and disorders in children: A multilingual perspective*. Cleavdon, UK: Multilingual Matters.

Yavaş, M. (2007). Multilingual speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 96-100). Clifton Park, NY: Thomson Delmar Learning.

Studies of multilingual Japanese speech acquisition

Languages	Country	Study	Age of children	Total number of children (no. of multilingual children)**	Typically/atypically developing children	Speech /language	Production/perception
Japanese-English	USA	Preston, J. L., & Seki, A. (2011). Identifying residual speech sound disorders in bilingual children: A Japanese-English case study. <i>American Journal of Speech-Language Pathology</i> , 20(2), 73-85.	11-year-old	1 (1)	atypical	speech	production

Note. * Studies of typically and atypically developing multilingual children published in English were included; however, studies that only included monolingual children were excluded.

**The total number of children may have included both multilingual and monolingual children, so the number in brackets provides the total number of multilingual children.