

# Information about Portuguese speech

## 1. A comparison between Portuguese and English phonology

Aspect	Language	Number	Details	Source
Consonants	Portuguese	19 consonants	/p, b, t, d, k, g, m, n, ɲ, r, f, v, s, z, ʃ, ʒ, l, ʎ/	Yavaş & Mota (2007)
	English	24 consonants	/p, b, t, d, k, g, m, n, ŋ, θ, ð, f, v, s, z, ʃ, ʒ, h, tʃ, dʒ, j, w, ɹ, l/	Smit (2004)
Consonant clusters	Portuguese	Syllable-initial two element consonant clusters	C1 = /p, b, t, d, k, g, f/ C2 = /l, r/	Yavaş & Mota (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	Portuguese	12 vowels + 14 diphthongs	Vowels: /i, e, ε, a, u, o, ɔ, ĩ, ẽ, ã, õ, ũ/ Diphthongs: 7 oral + 7 nasal diphthongs	Yavaş & Mota (2007)
	English (US-General American)	14 vowels + 3 diphthongs	Vowels: /i, ɪ, e, ε, 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, ε, æ, ə, ɜ, ɝ, ʌ, 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, εə, ʊə/	Howard (2007)
	English (Australian)	12 vowels + 8 diphthongs	Vowels: /i:, ɪ, e, æ, ɐ, ɜ, ɔ:, ʊ, ʌ:, ɜ:, ə/ <sup>i</sup> OR /i, ɪ, e, æ, a, ʌ, ɒ, ɔ, ʊ, u, ɜ, ə/ <sup>ii</sup> Diphthongs: /æɪ, ae, əɪ, æɔ, ɔɪ, ɪə, eɪ, ʊə/ <sup>i</sup> OR /eɪ, aɪ, oʊ, aʊ, ɔɪ, ɪə, εə, ʊə/ <sup>ii</sup>	<sup>i</sup> Harrington, Cox, & Evans, (1997) <sup>ii</sup> Mitchell (1946)
	English (New Zealand)	12 vowels + 8 diphthongs	Vowels: /i, ɪ, e, æ, ə, ɜ, u, ʊ, ʌ, ɔ, ɒ, ɑ/ <sup>i</sup> OR /i, ɪ, e, æ, a, ə, ɜ, ʊ, ʌ, ɔ, ɒ/ <sup>ii</sup> Diphthongs: /aɪ, aʊ, ɔɪ, eɪ, oʊ, ɪə, eə, ʊə/ <sup>i</sup> OR /aɪ, aʊ, ɔɪ, eɪ, oʊ, ɪə, eə, ʊə/ <sup>ii</sup>	<sup>i</sup> Bauer & Warren (2004) <sup>ii</sup> Maclagan (2009)
Tones	Portuguese	0 tones	-	
	English	0 tones	-	
Syllable shape	Portuguese	C <sub>(0-2)</sub> VC <sub>(0-2)</sub>		Yavaş & Mota (2007)
	English	C <sub>(0-3)</sub> VC <sub>(0-4)</sub>	The smallest syllable is V and the largest is CCCVCCCC <i>strengths</i> .	McLeod (2007)

<b>Stress-timed or syllable-timed?</b>	<b>Portuguese</b>	Stress-timed (European Portuguese) Syllable-timed (Brazilian Portuguese)	Stress usually falls on the penultimate syllable.	Yavaş & Mota (2007)
	<b>English</b>	Stress-timed	Syllables can be strong or weak. Stress also is used for emphasis.	
<b>Varieties</b>	<b>Portuguese</b>	European, Brazilian	There are regional varieties of Brazilian Portuguese (e.g., Fluminense, Paulistano).	Yavaş & Mota (2007)
	<b>English</b>	Many dialects	Many dialects including General American English, Received Pronunciation (England), Scottish English, Irish English, Australian English, New Zealand English, South African English etc.	
<b>Writing system</b>	<b>Portuguese</b>	Latin script	Latin alphabet with accents over vowels.	Yavaş & Mota (2007)
	<b>English</b>	Latin script	Latin script loosely related to phonetic realizations of the consonants and vowels.	

## References

### Portuguese studies

Yavaş, M., & Mota, H. B. (2007). Portuguese speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 505-515). 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.

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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

Shepherd, D. (2001). Portuguese speakers. In M. Swan & B. Smith (Eds.), *Learner English: A teacher's guide to interference and other problems* (pp. 113-128). Cambridge: Cambridge University Press.

## 2. Portuguese speech assessments

For a list of speech assessments in Portuguese see: [www.csu.edu.au/research/multilingual-speech/speech-assessments](http://www.csu.edu.au/research/multilingual-speech/speech-assessments)

Intelligibility in Context Scale: Portuguese [www.csu.edu.au/research/multilingual-speech/ics](http://www.csu.edu.au/research/multilingual-speech/ics)

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

Yavaş, M., & Mota, H. B. (2007). Portuguese speech acquisition. In S. McLeod (Ed.), *The international guide to speech acquisition* (pp. 505-515). 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 Portuguese speech acquisition

Languages	Country	Study	Age of children	Total (no. of multilingual children)**	Typically/atypically developing children	Speech /language	Production/perception
Portuguese-English	USA	Collins, M. F. (2005). ESL preschoolers' English vocabulary acquisition from storybook reading. <i>Reading Research Quarterly</i> , 40(4), 406-408.	preschoolers	70(70)	typical	language	production
Portuguese-Swedish-English	-	Cruz-Ferreira, M. (2010). <i>Multilinguals are...?</i> London: Battlebridge Publications.	-	3(3)	typical	speech language	production
Spanish-Portuguese-Hebrew	Israel	Faingold, E. D. (1996). Variation in the application of natural processes: Language-dependent constraints in the phonological acquisition of bilingual children. <i>Journal of Psycholinguistic Research</i> , 25, 515-526.	0;11 – 1;11	1 (1)	typical	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.