

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, ø, ɜ, 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, ø, ɜ, ʌ, u, 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, ɜ, ɔ:, ʊ, ʌ:, ɜ:, ə/ ⁱ OR /i, ɪ, e, æ, a, ʌ, ɒ, ɔ, ʊ, u, ɜ, ə/ ⁱⁱ Diphthongs: /æɪ, ae, 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, u, 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 | Portuguese | 0 tones | - | |
| | English | 0 tones | - | |
| Syllable shape | Portuguese | C ₍₀₋₂₎ VC ₍₀₋₂₎ | | Yavaş & Mota (2007) |
| | English | C ₍₀₋₃₎ VC ₍₀₋₄₎ | The smallest syllable is V and the largest is CCCVCCCC <i>strengths</i> . | McLeod (2007) |

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|----------------------------------------|-------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Stress-timed or syllable-timed? | Portuguese | Stress-timed (European Portuguese) Syllable-timed (Brazilian Portuguese) | Stress usually falls on the penultimate syllable. | Yavaş & Mota (2007) |
| | English | Stress-timed | Syllables can be strong or weak. Stress also is used for emphasis. | |
| Varieties | Portuguese | European, Brazilian | There are regional varieties of Brazilian Portuguese (e.g., Fluminense, Paulistano). | Yavaş & Mota (2007) |
| | 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 | Portuguese | Latin script | Latin alphabet with accents over vowels. | Yavaş & Mota (2007) |
| | English | 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. Burrige, 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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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

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

Intelligibility in Context Scale: Portuguese 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, 40</i> (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, 25</i> , 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.