



# Multilingual Children's Speech Development

# **ENGLISH+GREEK**

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**Presented by: Elena Babatsouli**

# English+Greek Speech Development

## Author

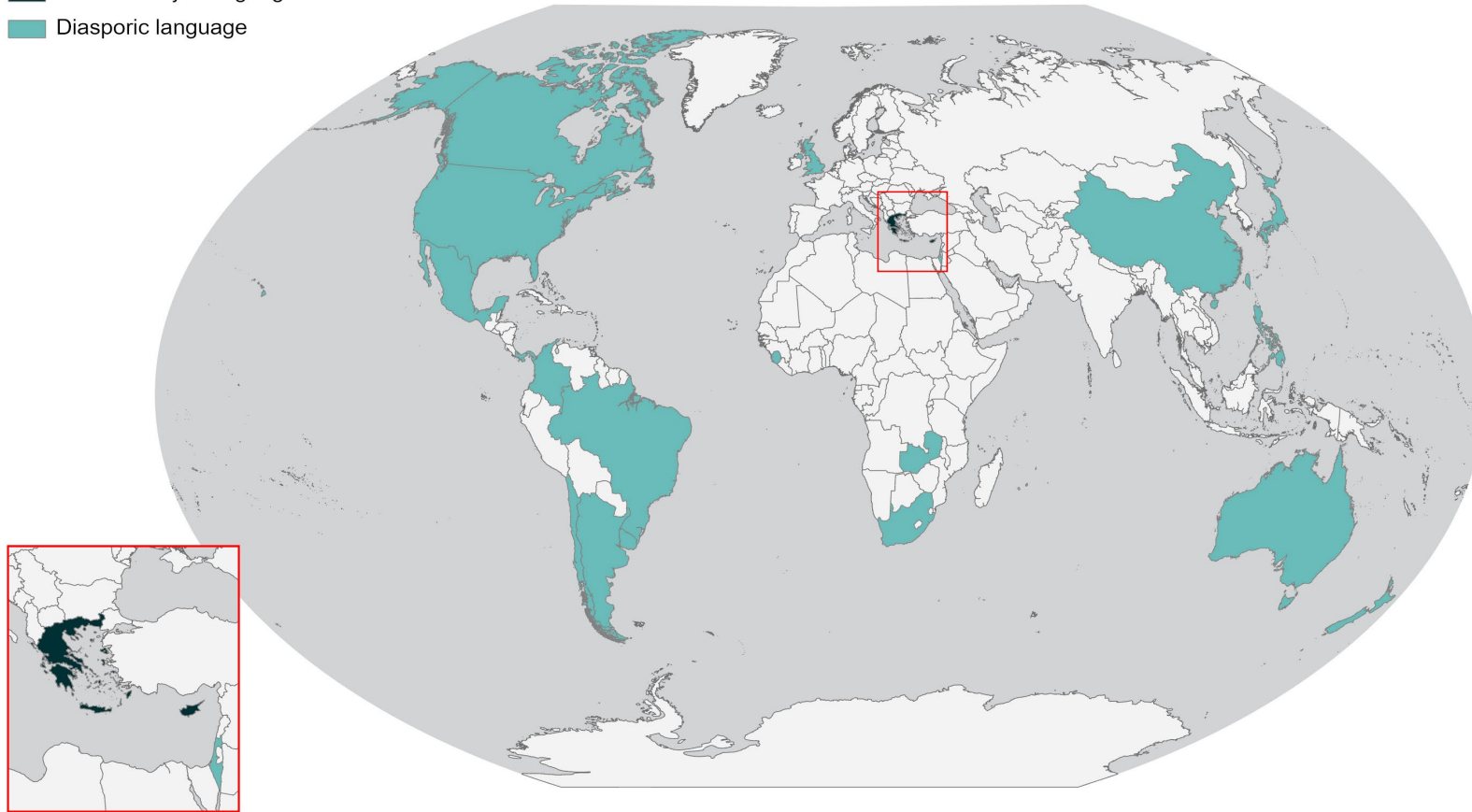
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# English+Greek Map

- Official / major language
- Diasporic language



Acknowledgement to Spatial Data Analysis Network (SPAN) and Charles Sturt University, and in particular, Craig Poynter for his work creating the map with ESRI ArcGIS Pro 3.1 software and data from ESRI's Living Atlas.

# English+Greek Variants

## ■ Dialects and variants

Major English+Greek variants involve combinations of

- **English (Standard) + Greek (Standard):** General American English (GAE), Australian English (AE), British English (BE) + Standard Modern Greek (SMG)
- **English (Standard) + Greek (Cypriot)** General American English (GAE), Australian English (AE), British English (BE) + Standard Modern Greek (SMG)
- **English (Dialect) + Greek (Cypriot):** South African English, Cypriot Greek (CG), and other Greek dialectal forms

Studies on English+Greek speech development to date are mostly representative of bilingual usage in the UK, USA, and Australia, and of L2 English with Greek as L1 (e.g., Antoniou et al., 2011; Babatsouli, 2017; Kkese & Kaspava, 2021)

# English+Greek Alphabets

- **Writing (two alphabets, left-to-right)**
  - **English:** Latin alphabet (Roman script) – **opaque orthography**  
Examples: *bough* /bau/, *dough* /dou/ (GAE)
  - **Greek:** Greek alphabet – **transparent orthography**  
accent mark (τόνος) indicates stressed vowels  
Examples: ἡ [i] ‘or’, πόδια [ˈpoðja] ‘legs’ ποδιά [poˈðja]
- **Grapheme/Sound correspondence**
  - **shared grapheme/similar sound:** only <o, s>
  - **similar grapheme/sound:** <a-α, i-ι, k-κ, t-τ>
  - **similar grapheme/ different sound:** <p-ρ> (where <ρ> is [r]); <w-ω> (<ω> is [o]); <u-υ> (<υ> is [i]); <n-η> (<η> is [i])
- **Greeklis**h (Roman script to write Greek) is used in online platforms.  
Example: πώς πάει σήμερα; <pws paei shmera?> ‘how is it going today?’

# English+Greek Speech Components

## English

- **Consonants (24):** /p, b, t, d, k, g, m, n, ŋ, f, v, θ, ð, s, z, ʃ, ʒ, h, ɹ, j, l, w, tʃ, dʒ/; Major allophones: aspirated plosives, intervocalic [ʔ]~[r], dark /l/, syllabic consonants
- **Consonant clusters (many):**  
**WI:** /pɹ, pl, bɹ, bl, tɹ, tw, dr, dɹw, kɹ, kl, kw, gɹ, gl, gw, fl, fɹ, θɹ, sp, st, sk, sm, sn, spl, spɹ, spj, stɹ, skɹ, stj, skw, skj, skl, sl, sw, ʃɹ/;  
**WF:** ft, kt, lt, ld, lk, lp, lb, lf, lj, lm, ls, mp, mf, nt, nd, ntʃ, ndʒ, ns, nz, ŋk, ŋg, ps, pt, mpt, sk, sp, st, nθ, dθ, lθ, lfθs/, more created by WF morphemes
- **Vowels (12+):** /i, ɪ, u, ε, a, ʊ, ɔ, ɒ, ɑ, ɜ, ə, ʌ/; /aɪ, aʊ, ɔɪ, eɪ, əʊ~oʊ, də, ɪə~ɪə, eə~εə, ʊə~ʊə/
- **Tones (0):** None
- **Phonotactic restrictions:**  $C_{(0-3)}VC_{(0-4)}$
- **Prosody:** stress-timed language

## Greek

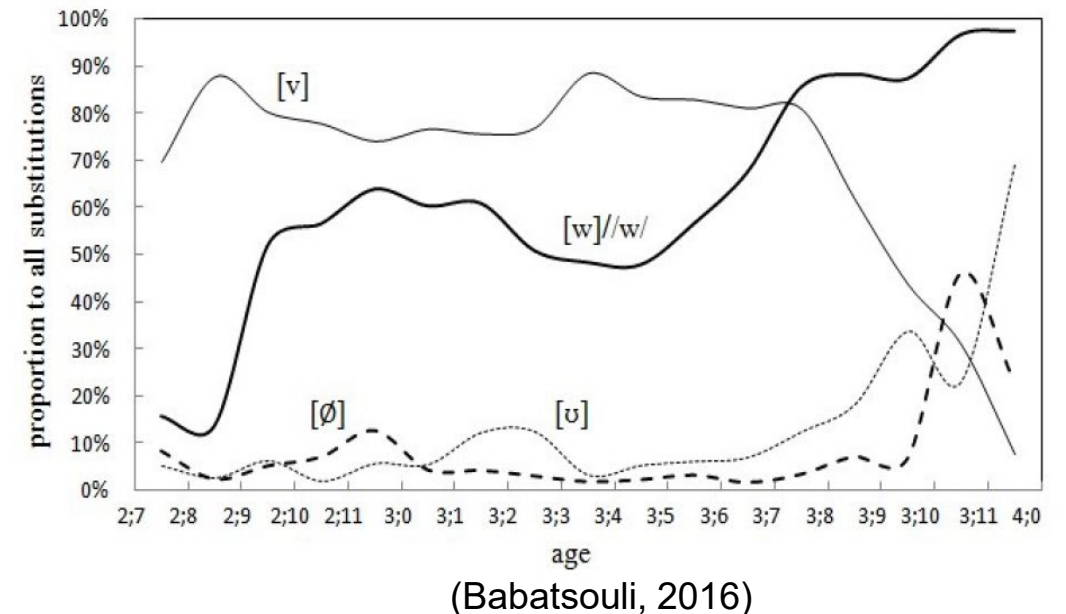
- **Consonants (20):** /p, b, m, t, d, n, f, v, s, z, θ, ð, ts, dz, r, l, k, g, x, γ/; Major allophones: palatal consonants; geminates (dialectal only)
- **Consonant clusters (many):** 17 CCs (4 /sC/, 1 /Cs/), 3 CCC types (2 /sCC/), No Coda clusters unless in loans; Rising, Falling & Level Sonority clusters
- **Vowels (5+2):** /e, i, o, ε, u/; Diphthongs /aɪ, oɪ/; Hiatus (Babatsouli, 2019); No phonemic tense/lax distinction
- **Tones (0):** None
- **Phonotactic restrictions:**  $C_{(0-3)}VC_{(0-1)}$ ; /C#: s, n/ Exception: loans, archaic words
- **Prosody:** Traditionally considered syllable-timed; prominent syllables at irregular intervals that become regular in fast speech (Arvaniti, 2007)

# English+Greek Typical Acquisition

## Case Study Research: Longitudinal (2;7-4;0)

**L1 Greek/L2 English bilingual Maria-Sofia**  
naturalistic context (ages 2;7-4;0)

- overall, same developmental milestones as for respective monolinguals by 4;0
- incremental consonant progress across time; evidence of acquisition plateau before rise. Singletons e.g., /θ, ð, w, h, x/ and rhotic; Clusters: /f/, /v/, /sC/ (e.g., Babatsouli, 2013, 2016, 2017, 2020; Babatsouli & Nicoladis, 2019; Yavaş & Babatsouli, 2016)



# English+Greek Typical Acquisition

## Case Study Research: Snapshot at age 2;7

**L1 Greek/L2 English bilingual  
Maria-Sofia, naturalistic context  
(2;7)**

vocabulary; MLUw; phonological  
measures; bilingual systems;  
consonantal portrait; phonological  
processes; interference (Babatsouli,  
2013, 2020)

	L2 English	L1 Greek
<b>CONSONANT SOUNDS</b>		
Acquired (90%)	p b m	p b v m d ɲ
Prevalent (75%-89%)	f s t	t s z n l
Less prevalent (50%-75%)	d z ʃ tʃ dʒ j	f ts
Slow developing (1%-49%)	v ð l ɹ ʎ k w h	θ ð λ r ʝ c ç k g x γ
Not produced in context (0%)	θ g	ʝ
Not targeted	ʒ	dz
<b>CONSONANT SOUND CLASSES</b>		
Labials	91%	94%
Coronals	51%	63%
Dorsals (+back)	9%	5%
Dorsals (-back)	42%	15%
Glottal	7%	n/a

# English+Greek Typical Acquisition

## Cross-Sectional Research: Child bilinguals

- **English/Greek HL bilinguals in the UK & Cyprus, 68 children, age 5;0**  
PA: bilinguals significantly outperformed monolinguals; English-dominant bilinguals outperformed Greek-dominant ones on phoneme awareness (Loizou & Stuart, 2003)
- **English/Greek HL bilinguals in the US, 2 children: girl at 7;4 & boy at 7;5**  
comparable MLU-5 with monolinguals (Geronikou et al., 2019)
- **English/Greek HL bilinguals in the UK; 40 children; ages 6;0 and 8;0**  
vocabulary; phonological and morphological awareness; decoding; literacy  
The children were Greek-dominant before 4;0; no negative effects on literacy in the dominant language (Papastefanou et al., 2019)
- **English/Greek HL bilinguals in the UK; 31 children; age 5;0-13;0 years**  
general language skills; intelligibility; receptive and expressive vocabulary  
There were higher language scores based on language use and no negative effects of the HL on School Language (English) (Papastergiou & Sanoudaki, 2022)

# English+Greek Atypical Development

## Speech Sound Disorders

No reported studies on English+Greek bilingual SSDs.

### SSD terms in English+Greek

English term	Greek term
speech sound disorders	διαταραχές φθόγγων ομιλίας
phonological disorder	φωνολογική διαταραχή
articulation disorder	αρθρωτικές διαταραχές ομιλίας
childhood apraxia of speech	παιδική απραξία λόγου
dysarthria	δυσαρθρία
hearing loss	απώλεια ακοής
cochlear implant	κοχλιακό εμφύτεμα
Down syndrome	σύνδρομο Down

# English+Greek Atypical Development

No speech assessments that specifically target English+Greek speaking children.

- **Phonological Assessment for Greek (PAel)** (Babatsouli, 2019a)  
[Procedures: word naming & narrative] in Greek & English freely available at:  
<https://phonodevelopment.sites.olt.ubc.ca/ελληνικά-greek/>
- **Δοκιμασία Φωνητικής και Φωνολογικής Εξέλιξης**  
[Assessment of Phonetic and Phonological Development] (PAL, 1995)
- **ΑνΟμιλο 4 - Εργαλείο Ανίχνευσης Διαταραχών Ομιλίας και Λόγου για παιδιά 4 χρονών** [AnOmiLo 4] (PAL, 2000)
- **ΜέταΦΩΝ – Τεστ Μεταφωнологικής Ανάπτυξης και Αναγνωστικής Ετοιμότητας ως προς τη Φωνολογική Επίγνωση** [Metaphon] (PAL, 2007)

# English+Greek Speech Assessments

## Tutorials

- McLeod, S., & Verdon, S. (2017). International Expert Panel on Multilingual Children's Speech. Tutorial: **Speech assessment for multilingual children who do not speak the same language(s) as the speech-language pathologist**. *American Journal of Speech Language Pathology*. [https://doi.org/10.1044/2017\\_AJSLP-15-0161](https://doi.org/10.1044/2017_AJSLP-15-0161)
- Babatsouli, E. (2023). **An ecosystemic clinical assessment of linguistic diversity: Greek dominant speech**. *Perspectives of the ASHA Special Interest Groups*. [https://doi.org/10.1044/2023\\_PERSP-23-00088](https://doi.org/10.1044/2023_PERSP-23-00088)
- Babatsouli (in press). In Amengual (Ed.), *The Cambridge Handbook in Bilingual Phonetics and Phonology*, CUP reviews phonological disorders in child bilingualism; **Speech Difference (Greek/English bilingual) vs. Speech Disorder (Greek monolingual)**

# English+Greek Speech Interventions

**No speech interventions that specifically target English+Greek speaking children.**

- **Phonological-based naming therapy** (Kambanaros et al., 2017)  
Greek+Hungarian+English multilingual girl with SLI (8;5)
- **Traditional Articulation Therapy** (Van Riper & Erickson, 1996)
- **Minimal Pairs Therapy** (Weiner, 1981)
- **Enhancement of Auditory Skills** (Okalidou, 2008)
- **Complexity Theory** (Babatsouli, 2016)
- **Morpho-Phonological Interface** (Geronikou et al., 2018)
- **Constraint-Based Nonlinear** (Babatsouli & Geronikou, 2022)

# Reference

## Book chapter

- Babatsouli, E. (in press). English+Greek speech development. In S. McLeod (Ed.). *The Oxford handbook of speech development in languages of the world*. Oxford University Press.

## Presentation

- Babatsouli, E. (2023). *English+Greek: Multilingual children's speech development*. Charles Sturt University, Australia.  
[https://www.youtube.com/playlist?list=PLRXcSAI\\_dA7arRMrE0qdxLuzGChY1LgY2](https://www.youtube.com/playlist?list=PLRXcSAI_dA7arRMrE0qdxLuzGChY1LgY2)  
<https://www.csu.edu.au/research/multilingual-speech/languages>

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