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Multiple Parallel Grammars in Heritage Phonotactics
The Case of Albanian Heritage Speakers in Greece

1. Heritage phonology

- Heritage phonology: less affected than *syntax, inflectional morphology, semantics, pragmatics, discourse* and *vocabulary (cf. Montrul, 2016; Polinsky, 2018)*
- *Incomplete acquisition of heritage phonology (Godson, 2003, 2004)*
- *Interference/influence of dominant language (e.g. Ronquest, 2013)*
- *Divergence from native phonemic inventory (e.g. Tse, 2016a, 2016b, 2017a, 2017b)*
- "Foreign accent" effect in heritage language (Yeni-Komshian *et al.*, 2000)
- Bidirectional transfer from and to the dominant language (e.g. Baker and Trofimovich, 2005)
- Dominant and heritage language: their phonological grammars converge (e.g. Barlow *et al.*, 2013)

➢ Shelton *et al.* (2017): *syllabification* of Spanish *diphthongs in heritage speakers* of Spanish, *dominant* in English → significant *interference* of English *phonotactics* in the *heritage language*, in all four categories they studied

2. Goals and Predictions

This study aims to:
- investigate the acquisition of **phonotactic constraints** of heritage Standard Albanian (SA) in heritage speakers of SA in Greece (dominant language: Standard Modern Greek (SMG)),
- explore the syllabification patterns of heritage (SA) word-medial sequences of three-consonants, as well as the grammar(s) that drive(s) the realization of these patterns,
- *study the constraints* that guide syllabification in a language that is acquired in a natural setting (family), but its grammar is *incompletely acquire*d or *attrited* later in life

Hypothesis:

SMG *phonotactic constraints are expected to be dominant*. This means that *consonant*s in SA *clusters* which do not comply with SMG *phonotactics* are expected to be *syllabified* as *heterosyllabic*

3. Experiment

Consonant clusters used in this experiment, grouped by cluster type

1. [nasal + stop + liquid]	a.	[mbl]
	b.	[mpl]
2. [nasal + stop + fricative]	c.	[ndj]
	d.	[mbj]
3. [stop + fricative + fricative]	e.	[kθj]
4. [fricative + fricative + fricative]	f.	[zvj]
	g.	[bst]
5. [stop + fricative + stop]	h.	[bsk]
	i.	[kst]
	j.	[ksk]
	k.	[ksp]

[ts] is an affricate in SA

Task
- syllabify 66 disyllabic nonce-words
- 11 consonantal sequences disallowed in SMG phonotactics, allowed in SA phonotactics
- 3-consonant word-medial clusters allowed in Albanian, not allowed in Greek
- controlled for stress (half words stressed on the 1st syllable / half words stressed on the 2nd syllable)

Examples of nonce-words used in the experiment:
a. pikthje /píkθje/
b. tuzvje /túzvje/
c. tundjep /tundjép/
d. pambla /pamblá/
e. kabska /kabská/

Participants
- 5 Albanian heritage speakers→ 14-28 y.o. Age of arrival in Greece: 0;4-2;0 y.o.
- 1 Albanian heritage speaker→ 40 y.o. Age of arrival in Greece: 11 y.o.

Grew up speaking SA at home
Now: Use SMG with mother and siblings, SA with father

Baseline (1st generation immigrants):
- 2 Albanian immigrants, arrived in Greece 19 y.o.
Years living in Greece: Evelina→ 25, reports attrition, Alma→ 19, very little attrition

4. Syllabification Patterns

RESULTS
Variability in the syllabification patterns of three-member consonantal sequences (both within-subject and between-subjects in heritage speakers) → e.g. participants may syllabify the consonantal sequence /zvj/:
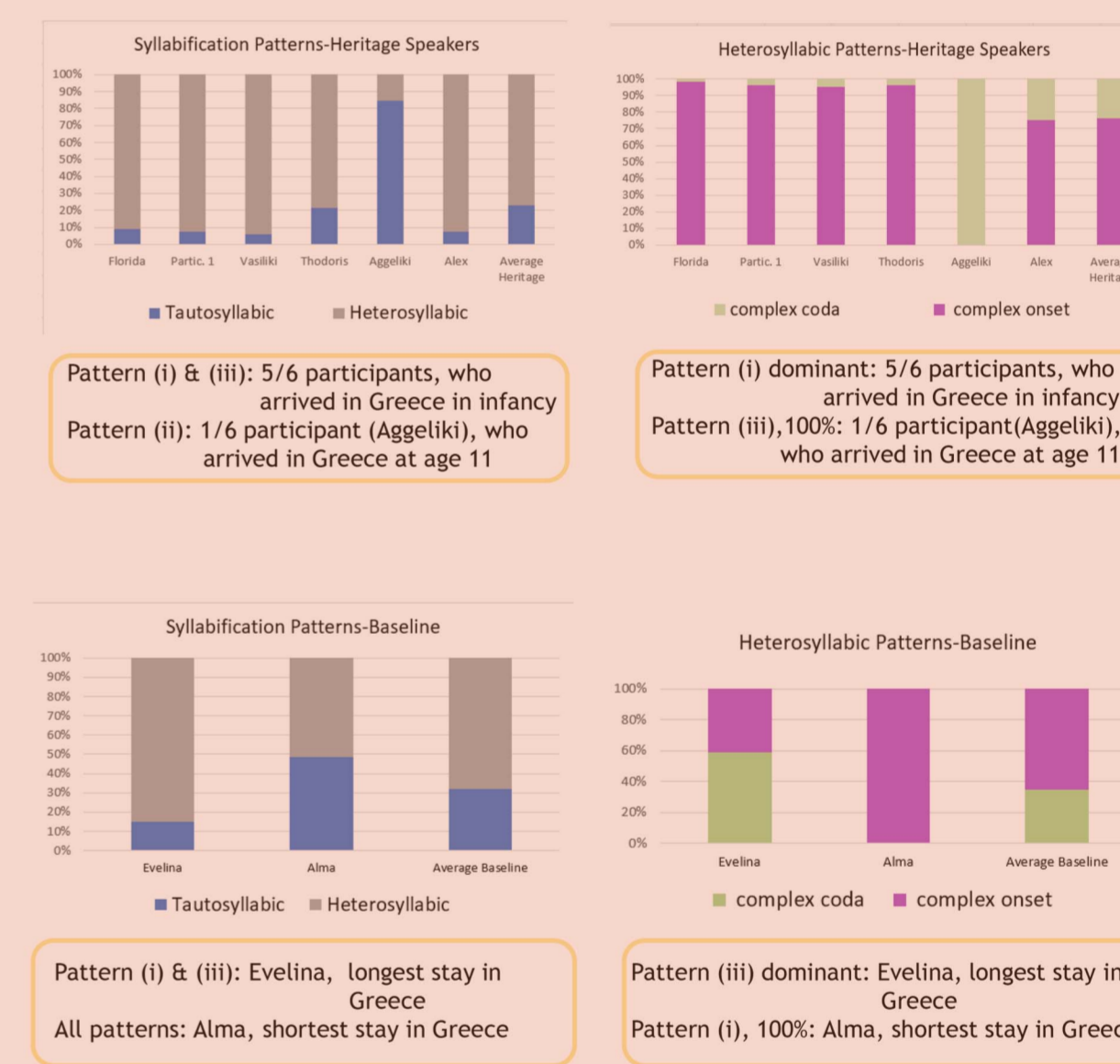
(i) as *heterosyllabic*, i.e. [z] as simple coda of σ_1 and a [vj] as 2-member onset of σ_2, e.g. [pez$_{\sigma_1}$.´vjik$_{\sigma_2}$], [´koz$_{\sigma_1}$.vjo$_{\sigma_2}$]) *(dominant pattern, 67.17%)*

(ii) as a *Maximal Onset* (Kahn, 1976:19) under σ_2, preferring an open syllable under σ_1, thus conforming to the native SA phonotactics, e.g. [ka$_{\sigma_1}$.´zvja$_{\sigma_2}$], [´pa$_{\sigma_1}$.zvjo$_{\sigma_2}$]) *(peripheral, secondary pattern, 22.73%)*

(iii) as *heterosyllabic*, but non-conforming to SMG phonotactics, i.e. [zv] as complex coda of σ_1 (SMG Coda Condition: *COMPLEX$_{CODA}$] and [j] as onset of σ_2, e.g. [pezv$_{\sigma_1}$.´jik$_{\sigma_2}$], [´kozv$_{\sigma_1}$.jo$_{\sigma_2}$]) *(most peripheral pattern, 8.33%)*

Variability also present in the syllabifications of one of the baseline (the one with the longest stay in Greece).

No effect of stress: i.e. patterns (i), (ii) and (iii) are equally applied in (un)stressed syllables in our dataset.

Syllabification Patterns-Heritage Speakers
■ Tautosyllabic ■ Heterosyllabic

Heterosyllabic Patterns-Heritage Speakers
■ complex coda ■ complex onset

Pattern (i) & (iii): 5/6 participants, who arrived in Greece in infancy
Pattern (ii): 1/6 participant (Aggeliki), who arrived in Greece at age 11

Pattern (i) dominant: 5/6 participants, who arrived in Greece in infancy
Pattern (iii),100%: 1/6 participant (Aggeliki), who arrived in Greece at age 11

Syllabification Patterns-Baseline
■ Tautosyllabic ■ Heterosyllabic

Heterosyllabic Patterns-Baseline
■ complex coda ■ complex onset

Pattern (i) & (iii): Evelina, longest stay in Greece
All patterns: Alma, shortest stay in Greece

Pattern (iii) dominant: Evelina, longest stay in Greece
Pattern (i), 100%: Alma, shortest stay in Greece

5. Multiple parallel grammars in heritage syllabification

3 distinct grammars in the syllabification of medial three-member consonantal sequences:

1. *Dominant grammar (Pattern (i), 67.17%): Preference for 2-member well-formed clusters (no appendix) on onsets OR 2-member onsets with maximum 1 appendix (antisonority / plateau clusters)* in σ_2, *as in SMG, thus simple coda in σ_1,* e.g. [´koz$_{\sigma_1}$.vjo$_{\sigma_2}$]

Constraint Ranking for grammar (1): CONTIG-IO, ONSET, *COMPLEX^{COD}>>*APPENDIX-LEFT >> *COMPLEX^{ONS}, NO-CODA

2. *Peripheral / secondary grammar (Pattern (ii), 22.73%): Preference for universally unmarked open syllables (σ_1) thus onset maximization in σ_2,* [´pa$_{\sigma_1}$.zvjo$_{\sigma_2}$]. (The pattern conforms to SA phonotactics)

Constraint Ranking for grammar (2): CONTIG-IO, ONSET, NO-CODA, *COMPLEX^{COD} >> *COMPLEX^{ONS}, *APPENDIX-LEFT

3. *Most peripheral / least emerging grammar (Pattern (iii), 8.33%): Avoidance of complex onset with appendice(s), resulting in simple onsets (σ_2), thus realization of complex codas in σ_1,* e.g. [pezv$_{\sigma_1}$.´jik$_{\sigma_2}$]

Constraint Ranking for grammar (3): CONTIG-IO, ONSET, *COMPLEX^{ONS}, *APPENDIX-LEFT>> NO-CODA, *COMPLEX^{COD}

CONCLUSIONS

Heritage speakers tend to not accept three-consonant clusters of SA that are illegal in their dominant language (SMG) and syllabify them as heterosyllabic. **But**: additional peripheral grammars sporadically emerge, which results in various syllabification patterns

Emergence of Multiple parallel grammars implies:
(a) incomplete acquisition of heritage (SA) phonotactics in heritage speakers
(b) signs of an early stage of L1 (SA) attrition in the baseline

Acquisition of heritage language phonology remains fossilized in a developmental stage where Multiple Parallel Grammars are in play, in parallel to child first language acquisition as well as in adult second/foreign language acquisition (e.g. Tzakosta 2004, 2006).

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