A CROSS-LINGUISTIC PERSPECTIVE ON ARABIC AND ITALIAN GEMINATE EFFECTS ON L2 LEARNING

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ABSTRACT

Research question: how features of Arabic and Italian affect the non-native production of written geminate consonants in English.

Obtained results: with a different output, Italian and Arabic speakers perceive the effect of the lexical gemination phenomenon of their L1 when reading L2 words containing a double consonant.

Other factors may have an impact: language background of the speakers, voicing and phonological environment of the target consonant and frequency of the target word.

INTRODUCTION

Geminates: double consonants articulated with a particularly long duration [1, 2].

Language	Geminate	Char. and WS
English	Morph.	EN, LTR
Italian	Morph. and Lex.	LAT, LTR
Arabic	Morph. and Lex.	AR, RTL

- *it.* <notte>,/nɔtːe/, 'night' and <note>, /nɔte/, 'note'
  ar. /sakːara/, 'he closed something' vs /sakara/ ,'he got drunk'
  en. /kɒpi/ 'copy' and /flɒpi/ 'floppy'
- *en.* 'unnatural' /ʌnːˈætʃərəl/, 'fun name' /fʌnːˈeɪm/
  it. <il lato>, /ilːato/, 'the side'

MATERIALS & METHODS

Speakers involved. 4 Italian L1, 4 Arabic L1 , + 4 English L1 (control group).

Language background questionnaire.

- Sex: 9 M, 4 F
- Age: 21-31. Mean age: 25
- English and other languages proficiency level:

L1	Sp. 1	Sp. 2	Sp. 3	Sp. 4
Italian	En C1	En C1	En B2	En C1, Fr B2
Arabic	En C1, Fr B2	En A2, De B2	En B1	En B1, De B2
English	Sp B2	Ch B2, De/Sp B1	Ar C1, Fr B1	Fr B1

Word repetition task.

Analysed consonants: 6 English stops + /n/, /l/.
Sentence template: "Now I say [*target word*] to you."
Target words:

Consonant	-er	-y
d:	shedder	buddy
d	cider	body

Total sentences: 70 [16 (x2) + 16(x2) + 6 distractors]
Acoustic analysis: manual alignment of the target consonants duration (ms) with [3]. Burst release and aspiration phase were included.

RESULTS 2

Voicing. Voiced consonants tend to be shorter across the board. See the main graphics in *Results 2*, where unvoiced consonants are highlighted in opaque colors.
Environment. The table below shows normalised-rate values lightly different from those in the graphs in *Results 1*, differentiated on two possible words-endings. Among Arabic and Italian speakers all the double consonants of the words ending in /-er/ turn out to be shorter than those of the words ending in /-y/ (especially with the first five consonants in the table).

CONSONANT	ITALIAN -er	ITALIAN -y	ARABIC -er	ARABIC -y	ENGLISH -er	ENGLISH -y
p:	0.29	0.37	0.25	0.34	0.27	0.24
b:	0.26	0.27	0.21	0.28	0.17	0.18
t:	0.29	0.33	0.27	0.33	0.14	0.11
d:	0.20	0.25	0.17	0.23	0.12	0.15
k:	0.31	0.36	0.31	0.39	0.28	0.33
g:	0.20	0.22	0.18	0.23	0.21	0.16
n:	0.22	0.24	0.18	0.19	0.15	0.14
l:	0.22	0.23	0.18	0.18	0.17	0.16

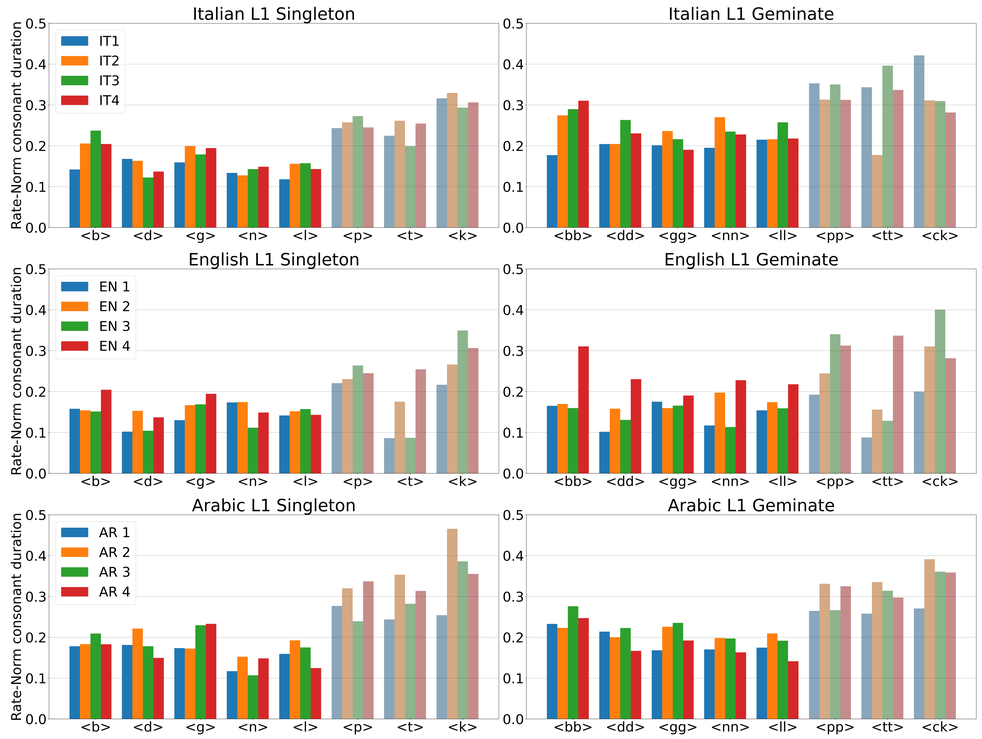
Frequency. *[4]*

- The dinner/diner case.
- Weakness of rating systems.
- Sociolinguistic similarities and dissimilarities between the two target groups.

RESULTS 1

Data Analysis. In order to avoid any influence from the speech-rate of the speakers, a rate-normalized consonant duration was found following the eq. 1. A final value, shown in the y-axis, is given by the rate-normalized consonants duration values averaged among the 2(x2) words each speaker repeated for each target consonant.

$$\text{Rate-normalized consonant duration} = \frac{\text{consonant duration [ms]}}{\text{word duration [ms]}} \quad (1)$$



Italian L1. The findings clearly and uniformly reveal among all the speakers tendencies to articulate double consonants with a longer duration.

English L1. On average the difference between singletons and geminates is definitely less evident:singletons may be lightly longer than geminates. EN3 and EN4: see the language background table.

Arabic L1. The average results are weaker compared with the first group. Also in this group some singleton consonants may be lightly longer. Distinguishing feature of Arabic (vs Italian and English): writing and alphabetical system. AR1: see the language background table.

REFERENCES

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CONCLUSION

L1 lexical gemination clearly has an impact on the non-native L2 production of double consonants.
Features that may affect the outputs:

- *On a phonological level:* voicing and environment (-er/-y)
- *L2 proficiency and language backgrounds.* Arabic and Italian groups show different results that cannot be fully understand without considering also the *Writing and Alphabetical System.*
- Frequency and individual and sociolinguistic backgrounds.