Voice assimilation of the morphemic -s in the L2 English of L1 French, L1 Spanish and L1 Italian learners

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Introduction

We investigate the /s/ - /z/ contrast in morphemic –s in L2 English by FrenchL1 (**FR**), Northern ItalianL1 (**NI**) and American SpanishL1 (**AS**) learners.

In **English**, morphemic -s can be a flexional suffix expressing: i) plurality, ii) 3rd person singular, iii) genitive, and iv) clitic forms of *is* and *has*.

It is also subject to a progressive voice assimilation rule:

Left context	
C[+voiced] V	**C[-voiced]**
/z/	**/s/**
Cars	*Trucks*
She knows	*She thinks*
Jim's plant	*Hank's plant*
Jim's not home	*Hank's not home*

[s] and [z] present and behave differently in the learners' L1s:

Morphologically: · The -s suffix exists in **FR** and **AS** to mark plurality, but it is subject to sandhi phenomena in French
les_amis - /le#zami/

· **NI** does not present flexional final –s.

Phonologically: · **FR** has a phonemic contrast opposing /s/ and /z/.
· **NI** has [s] and [z] as contextual allophones, the latter being used before another voiced segment[1]
sbuco - /ˈsbuko/ [ˈzbuːko]
casa - /ˈkasa/ [ˈkaːza]

· **AS** only has /s/, with non-obligatory regressive voice assimilation [s̬] in casual speech[2]
las mesas - [las̬ ˈmesas]

Phonotactically: · **FR** allows word-final /s/ and /z/

· **NI** allows word-final /s/ (although infrequent) but not /z/

· **AS** allows /s/.

Given these facts, and given the higher relative markedness of /z/ in word-final position with respect to /s/,[3] we hypothesize that

FR and NI learners will find it easier than AS learners to reproduce the outcome of the voice assimilation rule in English.

Methodology

We analyzed productions by 40 instructed learners from the Interphonology of Contemporary English corpus (IPCE) of L2 English.

L1	Count	Age avg	sd
FR	12F, 3M	24	6.59
NI	11F, 4M	22.5	2.38
AS *(Chile, Colombia, Peru)*	3F, 7M	30.2	6.98

Read-aloud task (506 words)
Extraction of periodic signal (voicing) and duration of all occurrences of morphemic –s.
→ 1610 realizations in total.

Results

· **FR** learners were the most successful in producing the expected patterns of periodicity, as expected.

However,

· **AS** learners performed voicing patterns of morphemic –s better than **NI** learners (Figure 1).
· Opposite patterns were observed in non-morphemic –s (see our other poster!).

These results may be due to the L1 Spanish non-obligatory voice assimilation in syllable coda which may promote syllable-coda voice assimilation in L2 English, but with a change in directionality (regressive assimilation to progressive assimilation).

By-participant results (Figure 2) give a more detailed insights of the acquisition of this phonological process.

Conclusions and discussion

The progressive voice assimilation rule triggered by the Left context is realized by learners of all L1s, but to different degrees.

AS learners outperformed NI learners' voicing patterns in cases of morphemic –s, although the opposite trend was observed previously in non-morphemic –s.

This different behavior may reflect recent findings on in L1 English[4] and may have potential repercussions on models of L2 phonology acquisition: The /s/ - /z/ opposition may be a partial exception to the markedness hierarchy of voiced obstruents.

For more on this topic:
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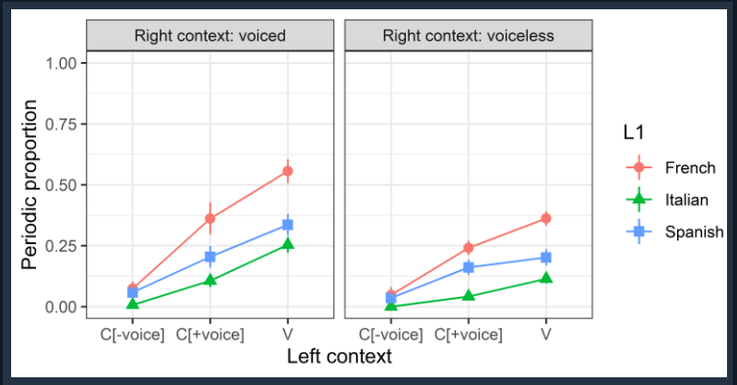

Figure 1. Average periodic proportion for word-final inflectional /z/ by type of preceding phoneme (C[-voice], C[+voice], V) and following segment (voiced, unvoiced), by L1 of speakers.

Figure 2. By-participant analysis of the periodic proportion for word-final morphemic -s as pronounced by the three groups of learners.

References

[1] Bertinetto, P. M., & Loporcaro, M. (2005). The sound pattern of Standard Italian, as compared with the varieties spoken in Florence, Milan and Rome. Journal of the International Phonetic Association, 35(2), 131-151.
[2] Hualde, J. I. (2005). The sounds of Spanish with audio CD. Cambridge University Press.
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[4] Plag, I., Homann, J., & Kunter, G. (2017). Homophony and morphology: The acoustics of word-final S in English. Journal of Linguistics, 53(1), 181–216.