

C-to-V coarticulation in spontaneous French: Acoustic analysis and classification.

Fanny Guitard-Ivent & Cécile Fougeron

Laboratoire de Phonétique et Phonologie (CNRS/UMR7018), Université Sorbonne-Nouvelle Paris 3
fanny.ivent@univ-paris3.fr

Abstract

Various sound changes originate from synchronic variations (Ohala, 1981, 1993; Recasens, 2014). Harrington (2012) showed that in German high back vowels are more likely to front synchronically in coronal contexts than front vowels are likely to retract, giving a possible explanation to the origin of front rounded vowels. Here, **we test this tendency in French by looking at the coarticulatory effect of front and back consonants on the spectral properties of French oral vowels.** More than 21.000 vowels occurring in a C1VC2 context are extracted from a large corpus of casual French recorded in natural conditions (Torreira et al. 2010). V is one among the 9 following oral vowels (/i,y,e,ɛ,ə,a,u,o,ɔ/ with /ə/=/ø, œ, ə/) and C1 & C2 vary between labial, coronal, velar or uvular place of articulation (/labV{cor, vel, uvul}/ & /{cor, vel, uvul}Vlab/). A strong fronting effect in coronal contexts is observed for back vowels (high and non-high). Interestingly for the front vowels, while high front vowels show little retraction, a strong coarticulatory effect is found for the non-high front vowels in /R/ context. This comprehensive examination of contextual influence in this large dataset highlights the large amount of overlap between vowel categories in the acoustic space. For instance, between /a/ and /ɛ/ or between /ə/ and /ɔ/, the last pair being described as a possible merger in French. Results from an ongoing automatic acoustic classification, testing the discriminability of vowels according to the consonantal context, will be presented at the conference.

References

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