# Converging vs. competing phonology: does code-switching play a predictable role?

Previous studies find that the degree to which speakers code-switch had no correlation with their use of English-like preposition stranding in French [1] or null subjects in Spanish [2,3]. In contrast, a study of word-final obstruent devoicing among second generation Heritage Polish speakers in Toronto reveals that the code-switching rate is positively and significantly correlated with speakers' rates of devoicing [4]. In an attempt to reconcile these findings, we test two (not mutually exclusive) hypotheses:

1. the phonology of a language is more susceptible to code-switching effects than the morphosyntax
2. if the structures of a variable in two languages can it will be more susceptible to code-switching effects than if they must compete.

Null subject variation exists in both Polish and English [5] therefore, in principle its variable rules should be able to converge in a bilingual grammar. In contrast, case-marking obligatorily appears on all Polish nominals but not on English nouns [6]. Thus, here, the grammars of the two languages are in direct competition. The devoicing variable is more like (null subject) as it occurs in both English [7] and Polish [8]. Convergence has been demonstrated for this variable [4]. Neither syntactic variable significantly correlates with the rate of code switching, while (devoicing) does. This confirms that morphosyntax is resistant to the amount of code-switching while phonology is susceptible to its effects [9]. It suggests that hypothesis 1 is on the right track. However, it does not exclude the possibility that the variable must not be competing between the two grammars. To test this distinction, we analyze the phonological variable (nasal diphthong), which exists in Polish but crucially not in English.

We calculate the rate of code switching for each speaker as the number of switches per minute in the speaker's sociolinguistic interview. We look at four dependent variables within the same set of 9 2nd generation Heritage Polish speakers in Toronto:

|  | morphosyntax | phonology |
|---|---|---|
| **convergence** | null subjects [5] | devoicing [4] |
| **competition** | case marking [6] | nasal diphthong category (novel) |

Polish has two nasal diphthongs, which are realized differently depending on the following sound [8]:

|  | _# | _ [sonorant] | _ [stop, affricates] | _ [fricative] |
|---|---|---|---|---|
| /ɛ̃ʷ/ -> | [ɛ] | [ɛ] | [ɛn] | [ɛ̃ʷ] |
| /ɔ̃ʷ/ -> | [ɔ̃ʷ] | [ɔ] | [ɔn] | [ɔ̃ʷ] |

Since English does not have nasal diphthongs, bilingual speakers may opt to realize all of them as a sequence of vowel+nasal or just vowel.

We show that Heritage Polish speakers differ in the rate of [ɛ̃ʷ] and [ɔ̃ʷ] in the environments where Homeland speakers are said to produce them categorically (shaded cells). A multivariate analysis (N=911) shows that code-switching is not a significant predictor. Thus, both hypotheses are supported: we find a significant of code-switching only in the one dependent variable which is both phonological and a context where convergence of the two grammars is possible. Since code-switching is a signal of competence in both grammars, more frequent code-switchers will be more innovative only in cases where applying both grammars at once, rather than choosing between them, is the source of the innovation.

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