

Towards Quantifying Social Behavior in Language Contact

This talk investigates social dynamics in contact-induced change using Exemplar Theory (ET, Pierrehumbert 2001). Language contact theory attributes the outcomes of contact to social factors and structural factors but theories differ in the primacy attributed to either. While Van Coetsem (1988) mostly attributes the outcomes to structural considerations (e.g. presence or absence of contrasts), Thomason & Kaufman (1988) mostly attribute outcomes to social ones (e.g. intensity of language contact). Situationally, however, it is difficult to define the role of social factors as scholarship often conflates different types of social factors (e.g. “intensity”, social evaluation, etc.).

In this talk, I examine the influence of intensity in the implementation of sub-phonemic shift. I define intensity as the amount of interactions that one community has with another. I create an ET model based on a case-study of Mexican Mennonites (Plautdietsch-speakers) described in Burns (2022). In the Plautdietsch community, Spanish-Plautdietsch bilingualism is traditionally characteristic of males. Males are community liaisons to the world beyond the religious community and learn Spanish at a young age by accompanying older males. While Plautdietsch males become proficient bilinguals, Plautdietsch females remain functionally monolingual.

Northern dialects of Mexican Spanish are undergoing a sub-phonemic shift involving deaffrication of $/tʃ/ > [ʃ]$. Deaffrication is believed to have been active in the early 20th century (Brown 1989), which is around the time that Canadian Mennonites developed their settlements in Mexico (Burns 2016). While such a shift lacks structural consequences in Mexican Spanish, in Plautdietsch, it can potentially lead to the merger of $/tʃ/$ and $/ʃ/$. Burns (2022) finds that a sample of Plautdietsch-speaking males born in Mexico around 1950 deaffricate, but females born around this time do not. Younger females, who have no knowledge of Spanish, exhibit some deaffrication (Burns 2022). This suggests that deaffrication entered the community through bilingual males, despite a dearth of lexical borrowings from Spanish, and recently expanded beyond this group to other members of the community.

I created an ET model (based on Pierrehumbert 2001) with static phonetic and phonological input in order to test how varying degrees of intensity, as defined above, impact the outcomes of contact in a community where only half of the members are expected to engage in bilingual interactions as outlined above for Plautdietsch. The script that ran 10,000 production–perception loops for gradiently defined tokens of $[tʃ]$ and $[ʃ]$. Spanish-speakers categorized both as types of $/tʃ/$, whereas Plautdietsch speakers categorized tokens as either members of $/tʃ/$ or $/ʃ/$. Conversational interactions were assigned between either Plautdietsch males and Plautdietsch females, Plautdietsch males and Spanish-speakers, or any community with itself (i.e. Plautdietsch males, Plautdietsch females, Spanish). This script was run 10 times, each time with random conversational assignment. Across all trials, Plautdietsch males and females started with the same grammatical input.

The outcomes of the model suggest that even when only half of a community is bilingual, sub-phonemic shift can occur, albeit delayed in the non-bilingual group. Initially, Plautdietsch males and females diverged as Plautdietsch males converge with the Spanish community, but Plautdietsch females eventually begin to shift. The ratio of conversational pairings indicates how quickly the community shifts (i.e. if Plautdietsch males have more pairings with Spanish speakers, the shift occurs faster). While the ratio of interactions impacts how quickly subsets of a community adopt the innovation, non-bilingual participants do not preclude the diffusion of innovation as Plautdietsch females and Spanish-speakers also shift. These results indicate when sup-phonemic shift does not occur in communities with bilingualism, other social and structural factors may be necessary explanatory factors.

References

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