

## Social variables facilitating subphonemic shift in Nigromante Zapotec Erin Donnelly (UC Berkeley)

This study examines non-indexicalized variation between two liquid taps within a small speech community. Speakers born after 1950 have high rates ( $\sim 80\%$ ) of one tap, [r], and not [ɹ], the more conservative variant of the phoneme /ɹ/. I consider this to be a sound change in progress that has nearly reached completion. Considering that those born before 1950 have  $\sim 30\%$  of the [r] variant in their speech, this sound change rapidly propagated throughout the Nigromante Zapotec (NMZ) speech community (Johnson 1976). I suggest that this rapid rate of change results from the small-world network that comprises the community of NMZ speakers. Small world social networks have been shown to increase rate of propagation of social variables requiring reinforcement (Watts 1999; Centola and Macy 2007).

[r] was not formerly present in NMZ, so the change in question is subphonemic. An Oto-Manguean language spoken in a small town in southern Mexico, NMZ has only 2,600 speakers. Most are bilingual in Spanish. Previous studies of small, isolated speech communities have shown that integration within the speech community, as well as elevated contact with people from the outside, are important predictors of innovation in rural towns (Romero 2009; Lippi-Green 1989).

Analyses of NMZ wordlist data suggest that the spread of innovative /ɹ/ in NMZ correlates best with age. However, speaker age is also loosely correlated with level of integration into the NMZ speech community. These findings are similar to an analysis of phonological variation of vowels in a rural German community, where younger speakers were more likely to innovate, especially if they had more contact with people from outside the village (Lippi-Green 1989).

The NMZ shift from [ɹ] to [r] has solidified nearly within a generation. Similarly rapid rates of change can be found in other small, closed, bilingual communities (e.g., Lai and Hsu 2013). These speech communities are prime examples of small world networks. In a small world, complex contagions (those which require reinforcement) can spread much more quickly than they can in any other kind of network (Centola and Macy 2007). My analysis suggests that sound change does not take place at a constant rate, and is highly dependent on the culturally-governed social structures through which it is propagated. Given the right social network conditions, a subphonemic or phonetic change can solidify several times faster than it would in other social environments. This can allow us to better understand and predict the spread of sound change in many other languages and language families.

### REFERENCES

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