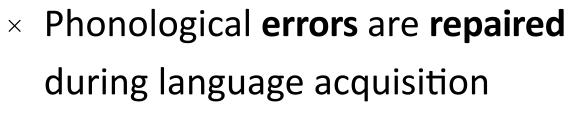
Early acquired sound sequences spread...

Does phonotactic acquisition determine phonotactic change?

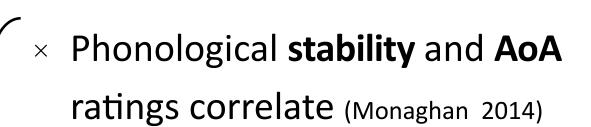
Andreas Baumann | University of Vienna | 14th International Cognitive Linguistics Conference

Is there a link between phonotactic acquisition and change?

× Phonological **errors** in language acquisition do not mimic sound change (Diessel 2012)



Proficient speakers contribute more to linguistic innovation than children do (Bybee 2010)

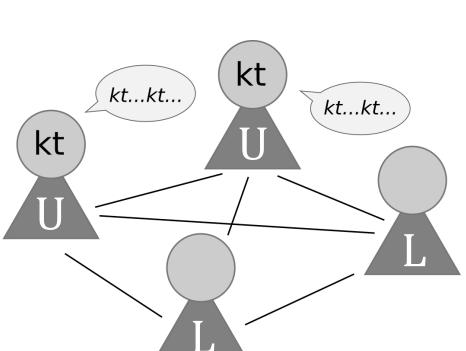


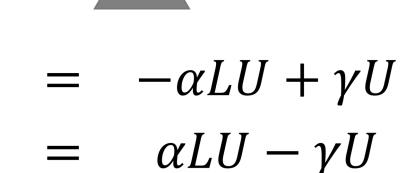
Historically **old** phonotactic items occur **early** in acquisition (MacNeilage & Davis 2000)

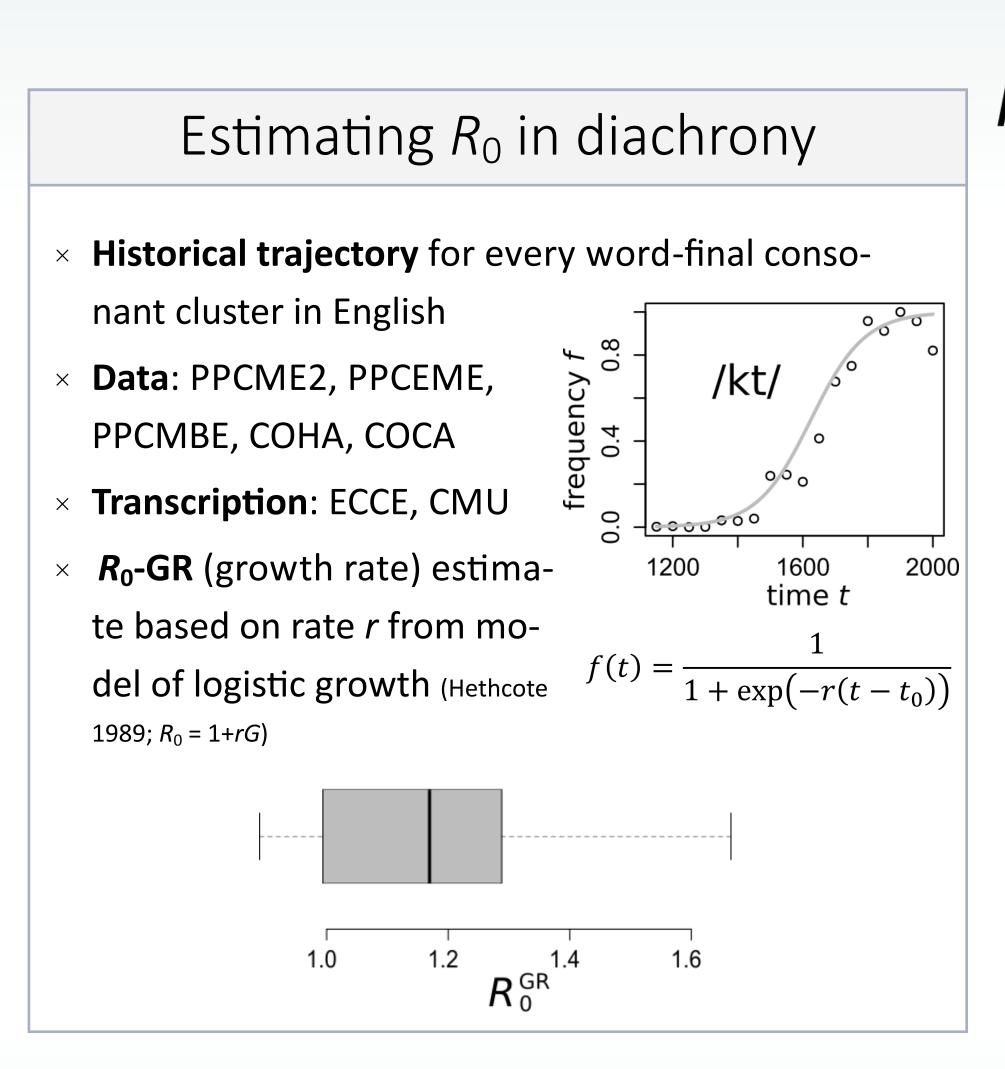
Early acquired items are more frequent, and frequent items are more **entrenched**

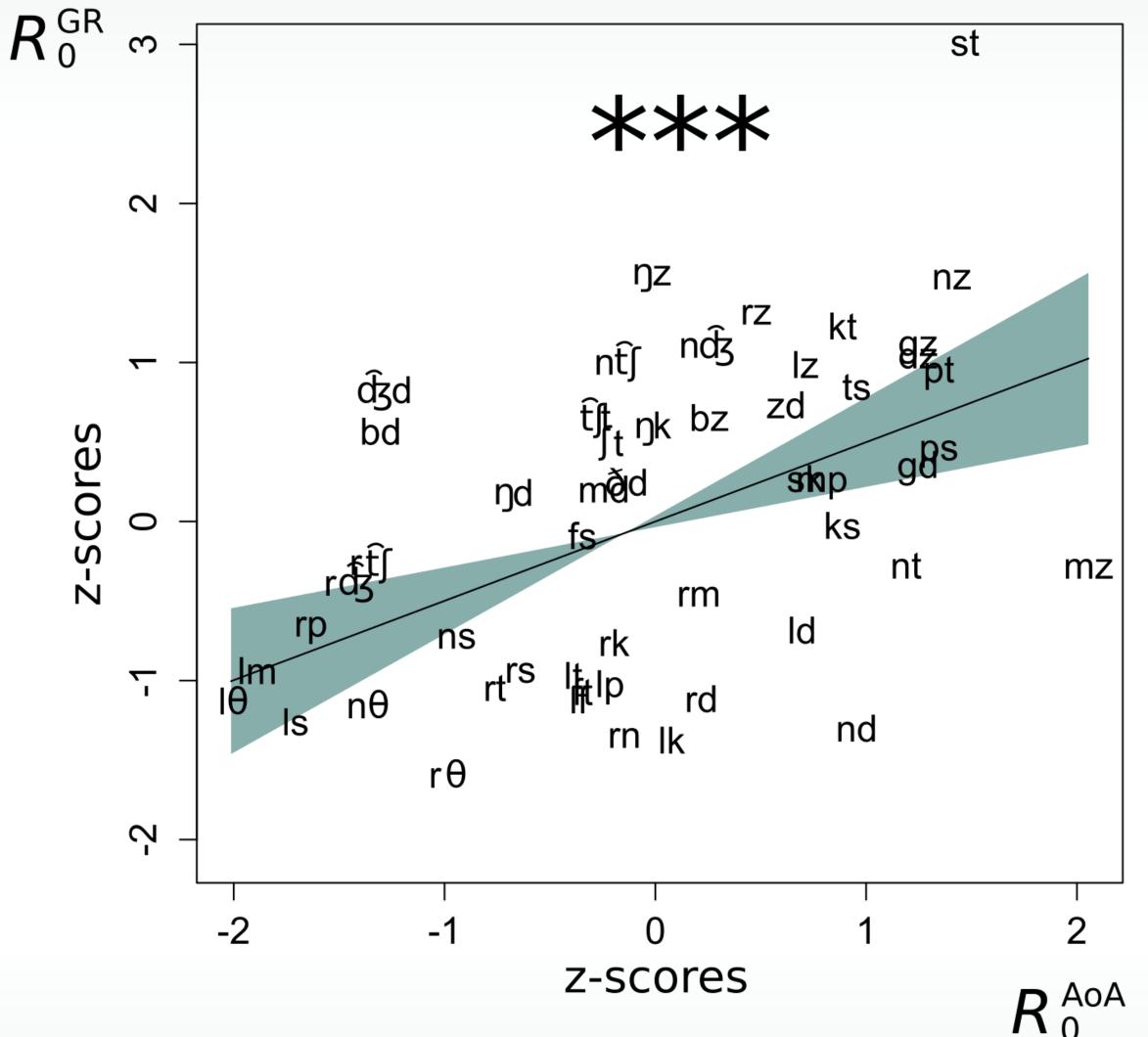
R_0 as a measure of reproductive success in phonotactics

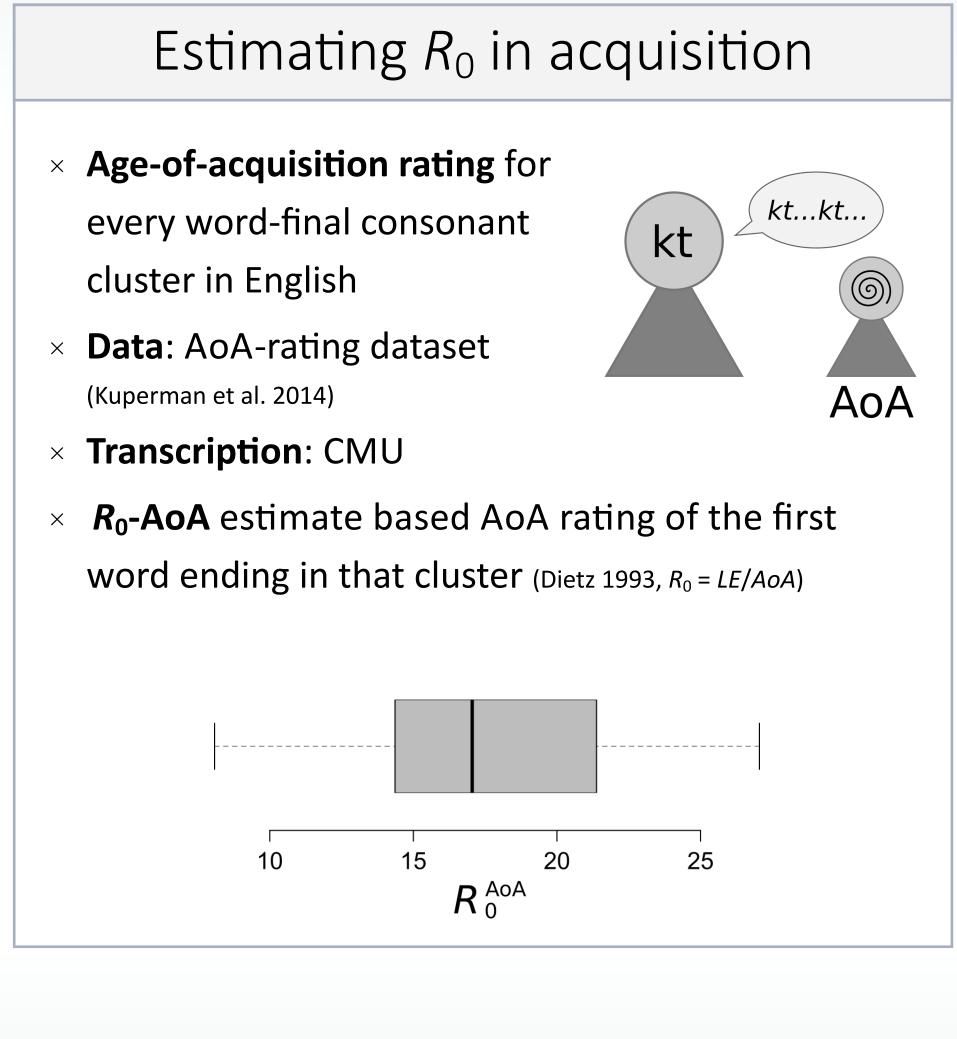
- × **Diphones** (sequences of two sounds; /kt/ in baked, /beikt/) are constituents of linguistic knowledge that spread through kt populations
- × Population composed of **learners** *L* and **users** *U*
- × Spread of diphones modeled by a simple **dynamical system** (Nowak 2000, Solé 2011)
- \times Basic reproductive ratio R_0 defined as the expected number of learners that learn a diphone from a single user
- × R_0 is a **standardized measure** of reproductive success ($R_0 = \alpha/\gamma$)





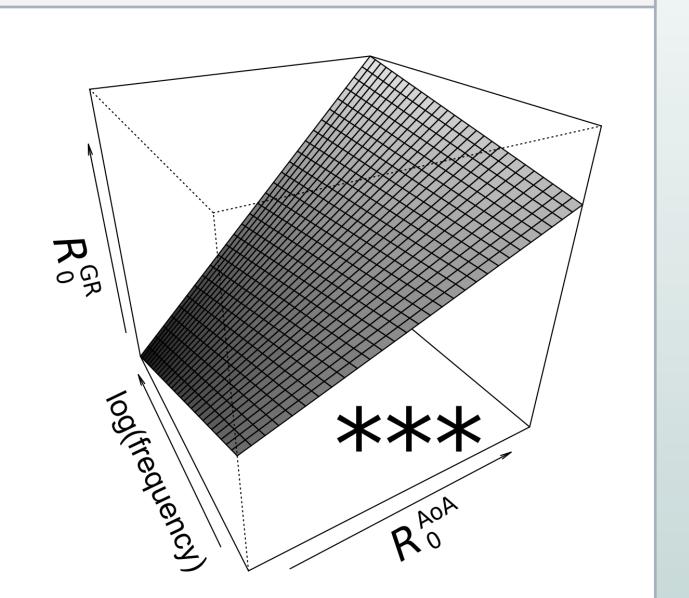






What is the role of utterance frequency?

- × **Utterance frequency** promotes change but can also have conserving effects (Bybee 2007)
- × What is the effect of frequency on the relationship between R_0 -GR and R_0 -AoA?
- × The relationship is a bit tighter in frequent diphones
- × **Highly frequent** diphones are acquired **earlier**
- × Frequency and diachronic stability correlate only slightly



So, how do acquisition and change hang together?

- ! Early acquired diphones are diachronically more successful
- ! R_0 -AoA estimates are much higher than R_0 -GR estimates
- ! Adult speakers, by implication, decrease reproductive success
- Language learners, in contrast, have a stabilizing function in phonotactic evolution
- Early acquired diphones are more entrenched and therefore resistant against phonological change at later ages

Language acquisition contributes to diachronic stability of diphones.

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of English, 1599–1613. Berlin [a.e.]: De Gruyter Mouton.

30,000 English words. Behavior Research Methods, 44, 978–990. Monaghan, Padraic. 2014. Age of acquisition predicts rate of lexical evolution. Cognition 133. 530-534.

 α ... rate of switching from L to U (acquisition rate)

 R_0 ... expected number of learners learning an item from a user ('R nought')

Journal of theoretical biology, 204(2), 179–189. doi:10.1006/jtbi.2000.1085 G ... linguistic generation time $(1/\gamma)$ LE... life expectation

 γ rate of switching from U to L (via unlearning or death) r rate of logistic growth (normalized token frequencies)

ate ones don't.

Bybee, Joan. 2010. Language, Usage and Cognition. Cambridge: Cambridge University Press. Diessel, Holger. 2012. New Perspectives, Theories and Methods: Diachronic change and

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