Allophonic Emergence: three ways allophonic rules come to be

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Introduction

- An introductory thing about allophonic emergence. We will argue that there are 3 different types, and provide some things about things.
- Hooray for corpora! This research program is only going to become more doable, as corpora keep getting made!

Outline

Mechanical Means

Traditionally assumed scenario **??**

- A **mechanical**, subgrammatical effect skews the distribution of outputs perceived by the learner
  - Articulatory
  - Perceptual

Mechanical Means:

Preaspiration in NW England English

Explanation of preaspiration in NW England English

Spontaneous Phonologization

Scenario proposed by (Joseph and Janda, Fruehwald)

- Speakers **spontaneously** create an allophone without any phonetic motivation.
  - Allophonic categories emerge in individual speakers' grammars before any phonetic motivation

Spontaneous Phonologization:

PRICE-raising in Philadelphia English (Fruehwald 2013)

Example about /ay/ raising in Philadelphia English

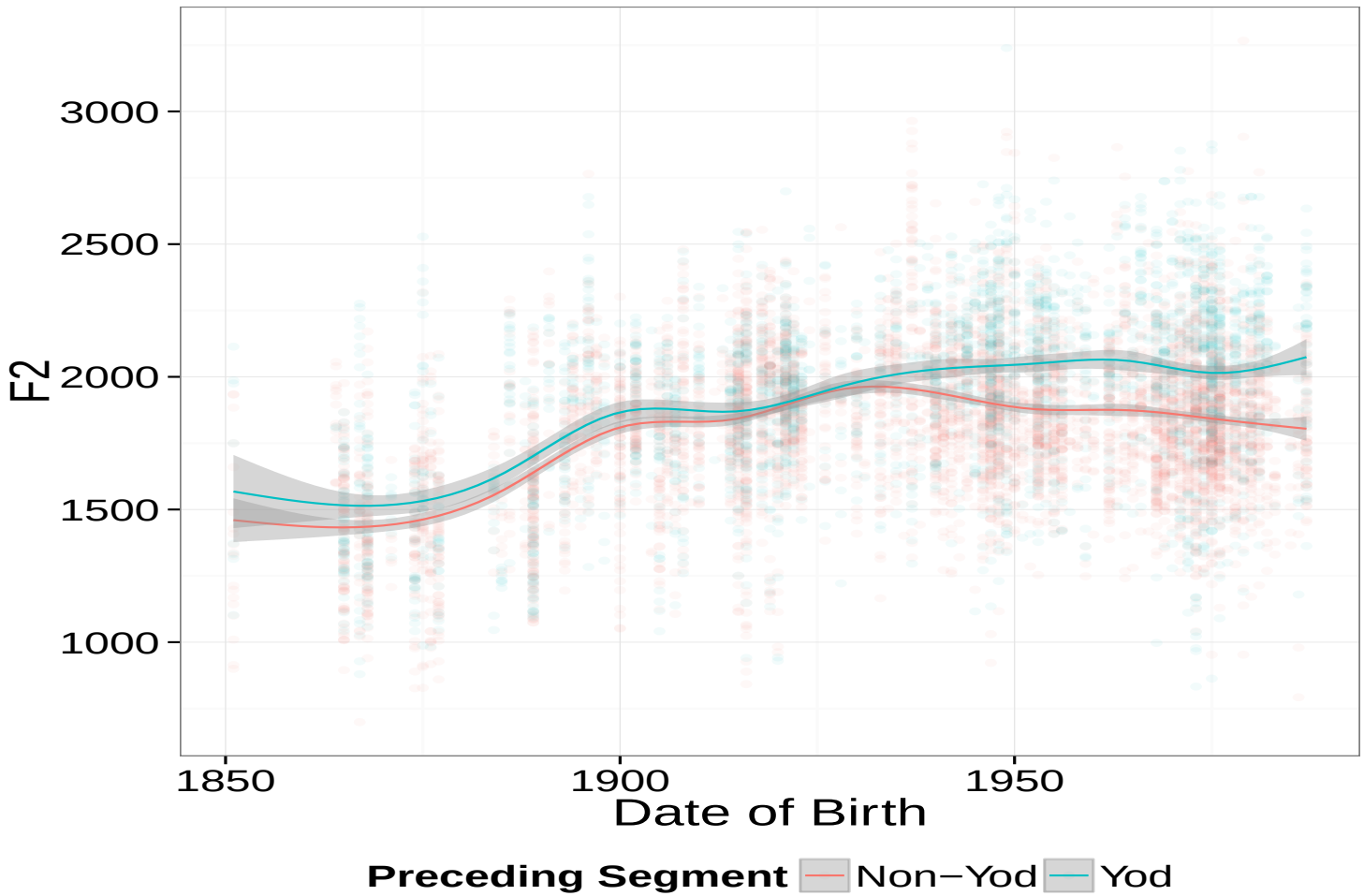
Phonological Specialization

Proposed by us!

- A phonetic change begins, creating variation in phonetic space
- This variation is reanalyzed as an allophonic distinction for a generation of speakers
  - how it's different from Ohala, RBO
  - How it's different from JJ, Frueh

Phonological Specialization:

GOOSE-NEW split in New Zealand English (Seyfarth and Sneller 2014)



Path of the split

Mechanical means

- Would split towards coarticulation or away from

Spontaneous phonologization

- Can split *in any direction!!*

Phonological specialization

- Initial split towards old pronunciation or new pronunciation, but once split, can go in any direction

Mechanical means: preasipration

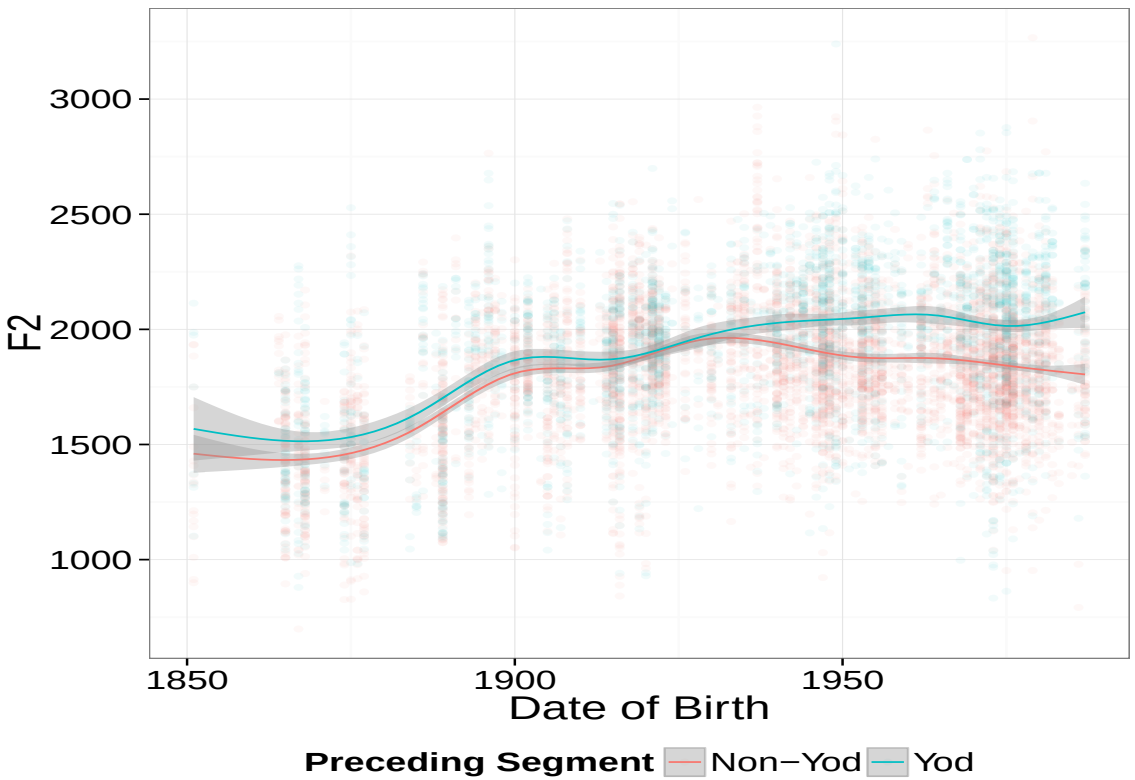
change occurs toward hyper coarticulation

Spontaneous phonologization: PRICE-PRIZE split

Actually we don't see a clear case of any direction here, because it's also in the direction of coarticulation. BUT we would predict that PRICE could have fronted or backed instead of raised.

Phonological specialization: GOOSE-NEW split

The tokens split - with one category continuing the change and the other category reverting to the old phonetics



Effect of duration

Explanation about how we expect an effect of duration for phonetic differences

Effect of duration

Mechanical means

- Because the allophonic split is the result of accruing phonetic effects, we should see a gradual decrease in the effect of duration over generational time

Spontaneous phonologization

- Because the allophonic split happens before phonetic effects, there should be no effect of duration at any time

Phonological specialization

- Because the allophonic split is the instant reanalyzation of phonetic effects, there should be an effect of duration for speakers born before the split, and no effect of duration for speakers born after the split
  - For all speakers in a single generation
  - Some early adopters

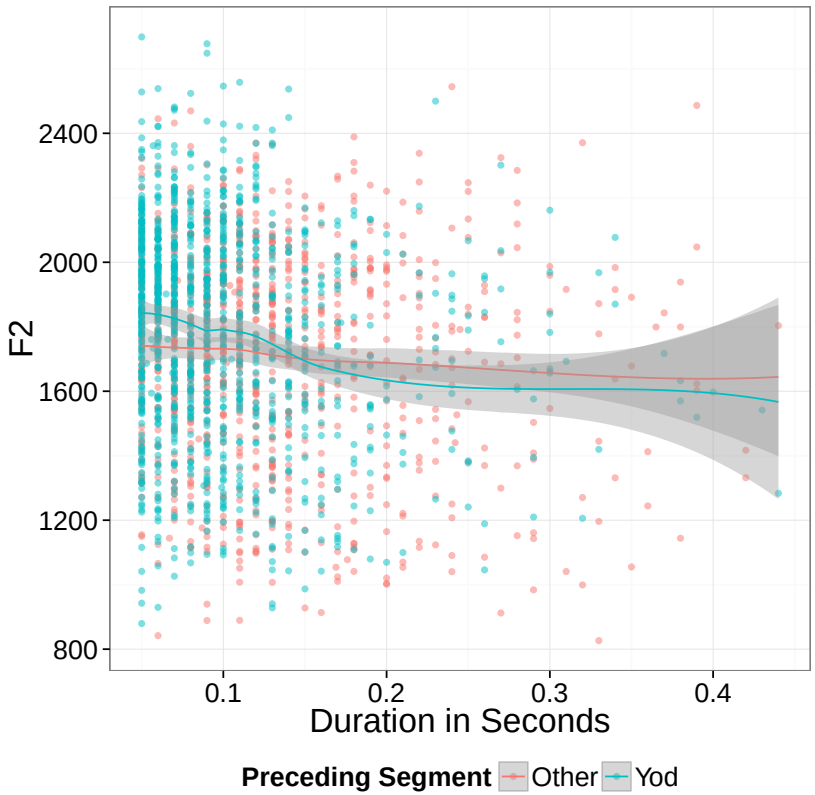
Effect of duration: preaspiration

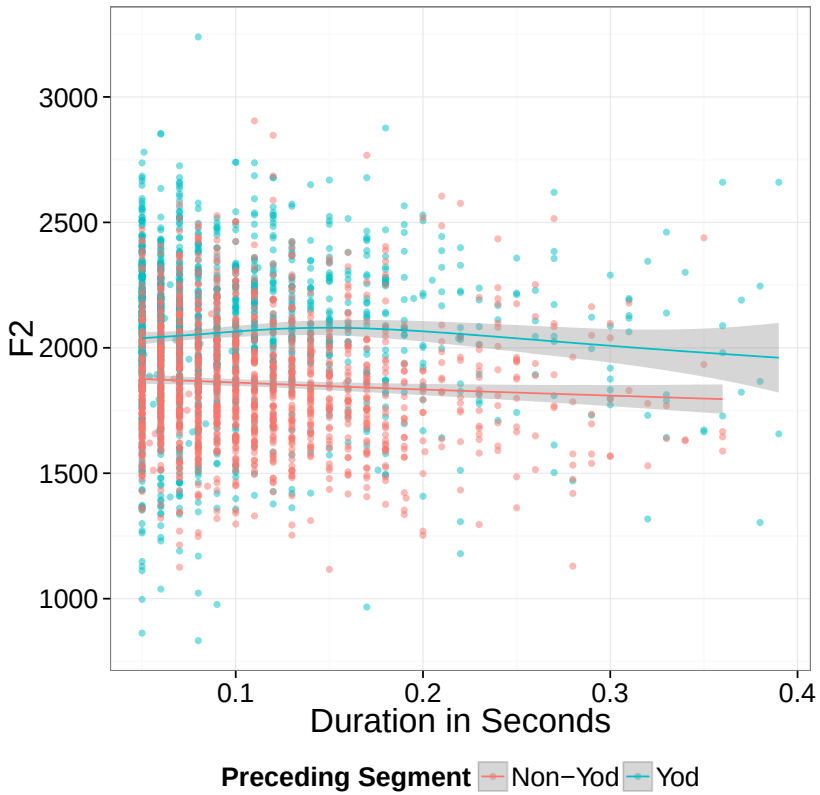
We probably don't have this data, BUT if this truly is mechanical means, we would expect to see gradual decrease in the effect of duration

Effect of duration: PRICE-PRIZE split

Betsy: double check – there is no effect of duration for the data that we have (caveat about how the data starts with a split already?)

Effect of duration: GOOSE-NEW split





Possibly include the results of the model - there's an effect of duration for the older speakers but not for the younger speakers!

Explanation of ROC analysis + caveats

Rate of Change

Mechanical means

- Not sure. We expect the rates to be parallel, but one to be higher?

Spontaneous phonologization

- *IF* the allophone is the target of the difference, then we expect different rates of change at the same time as the split

Phonological specialization

- If allophone is target, then we expect similar rates of change before the split and different after

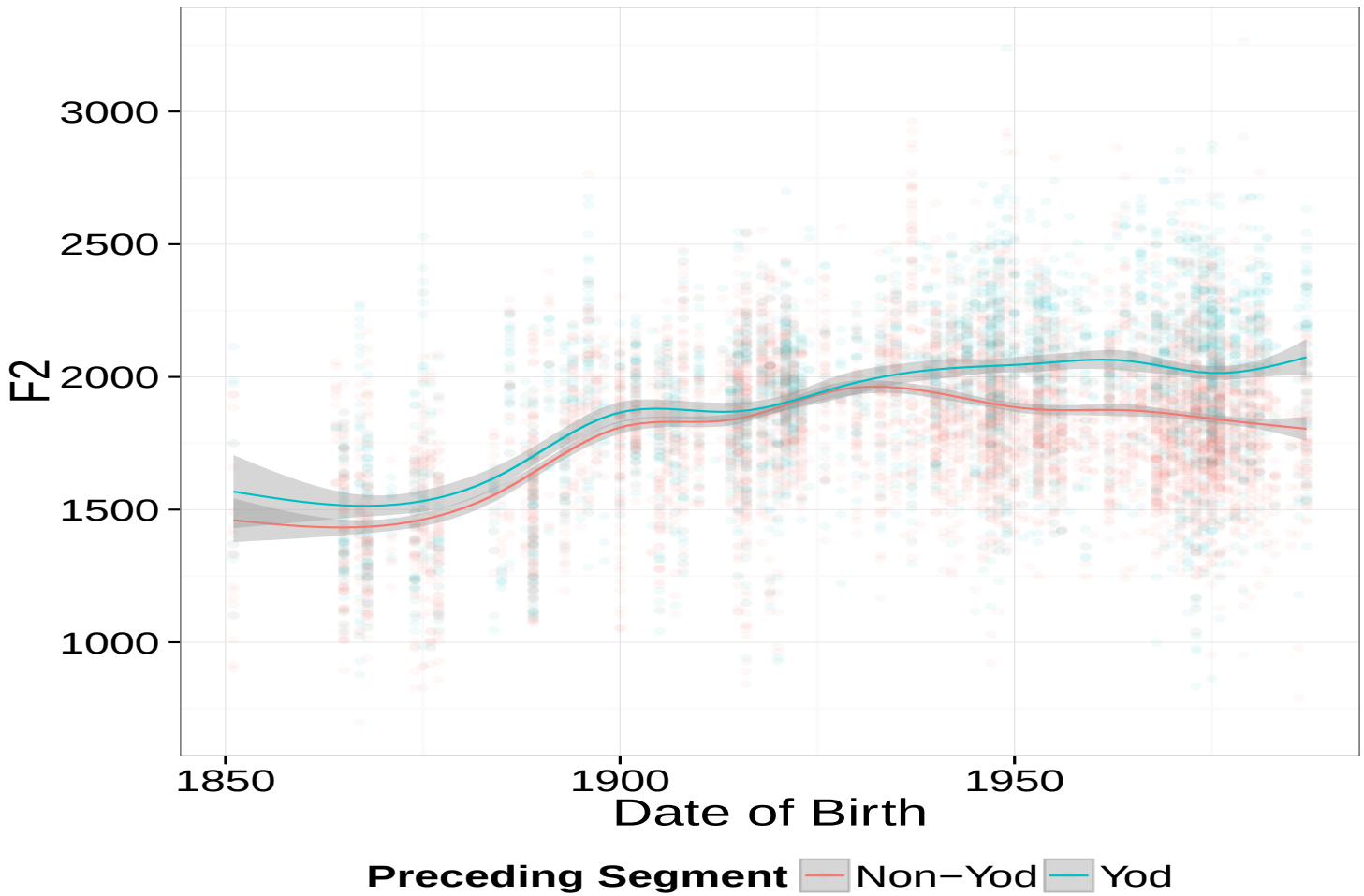
Mechanical means: preasipration

Model of what we expect the data would look like

Spontaneous phonologization: PRICE-PRIZE split

Model of what we expect the data would look like

Phonological specialization: GOOSE-NEW split



Pretend that this is the rate of change graph. Betsy:remake

Reaction times: Lexical decision task

- Not actually sure about this one. BUT: possibly, we expect there to be the same reaction times across the board when there's only a phonetic difference, but that cross-category tokens will cause longer reaction times for an allophonic difference?
- e.g. a token of 'food' with a fronted /u/ might take longer to react to for a speaker with an allophonic split than a token of 'food' with a fronted /u/ for a speaker with no spit
    - Tricky, because with phon.spec, there's already a phonetic change taking place...