

# Changes in the Timber Industry as a Catalyst for Linguistic Change

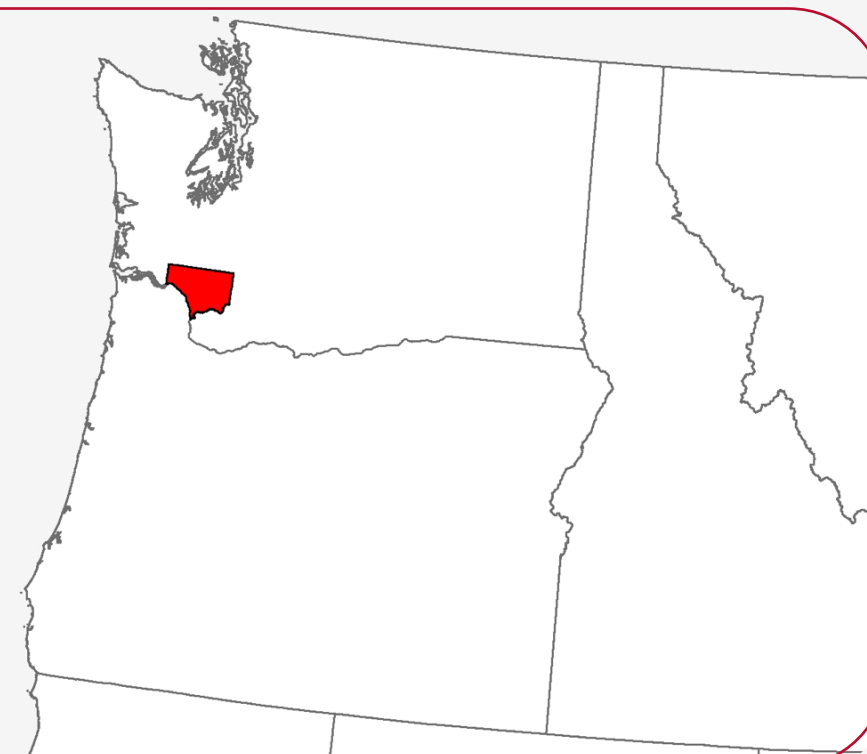
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## Catastrophic Change

- “Catastrophic events have played a major role in the history of all languages, primarily in the form of population dislocations... [They] are more common than previously believed.” (Labov 1994:24)
- The rise of island tourism in Ocracoke in 1960s. (Wolfram et al. 1999)
- Daily boat from Smith Island to mainland in 1974. (Schilling 2017)
- Traditional features typically lost; innovative features expand.
  - Texas and Oklahoma after WWII. (Bailey et al. 1996)
  - Influx of immigrants in Eastern Pennsylvania. (Herold 1990)
  - Migration across dialect boundary in New England. (Johnson 2010)

## Cowlitz County, Washington

- The city of Longview founded in 1923.
- Large lumber mills attracted thousands of workers to town.
- Economy thrived until late 1970s.
- Hit hard by recession in 1980s.

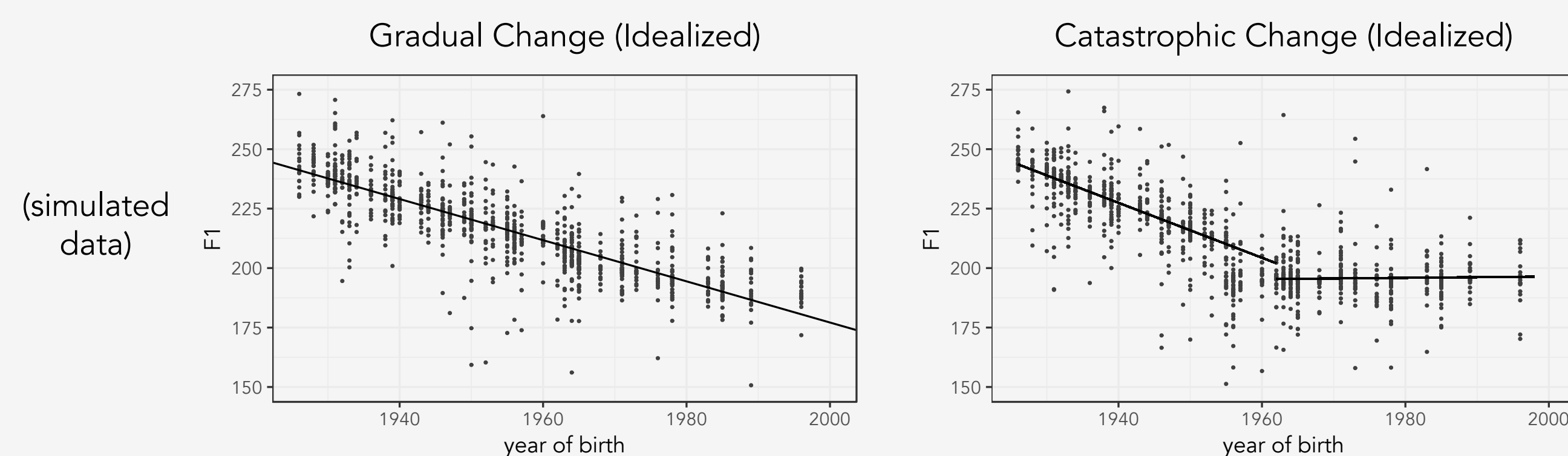


## Hypothesis

- BAG was raised less and GOAT was diphthongized more in Cowlitz County because of local changes in the timber industry.
  - A regression model with a significant breakpoint corresponding to changes in relevant census data would support this hypothesis.

## Regression with Breakpoint

- Fits two regression lines simultaneously in one model.



- The breakpoint itself is theoretically interesting and hints at when catastrophic change occurred.
- Procedure for finding the best breakpoint:
  1. Fit a model with each year as a breakpoint.
  2. Find the best model using minimum BIC.
  3. If null model is best, reject all breakpoints.

## Data

- 41 Cowlitz County residents read a wordlist as part of an interview.
  - Total of 217 tokens of BAG and 315 tokens of GOAT.
- Transcribed by hand; force aligned with DARLA (Reddy & Stanford 2015)
- Diphthongization measured as the length of 15-point trajectory.
- Bark difference metric for normalization
- Mixed-effects models using `lme4::lmer`. (Bates et al. 2015)
  - Fixed effects: age/generation (see above) and sex.
  - Random effects: speaker and word.

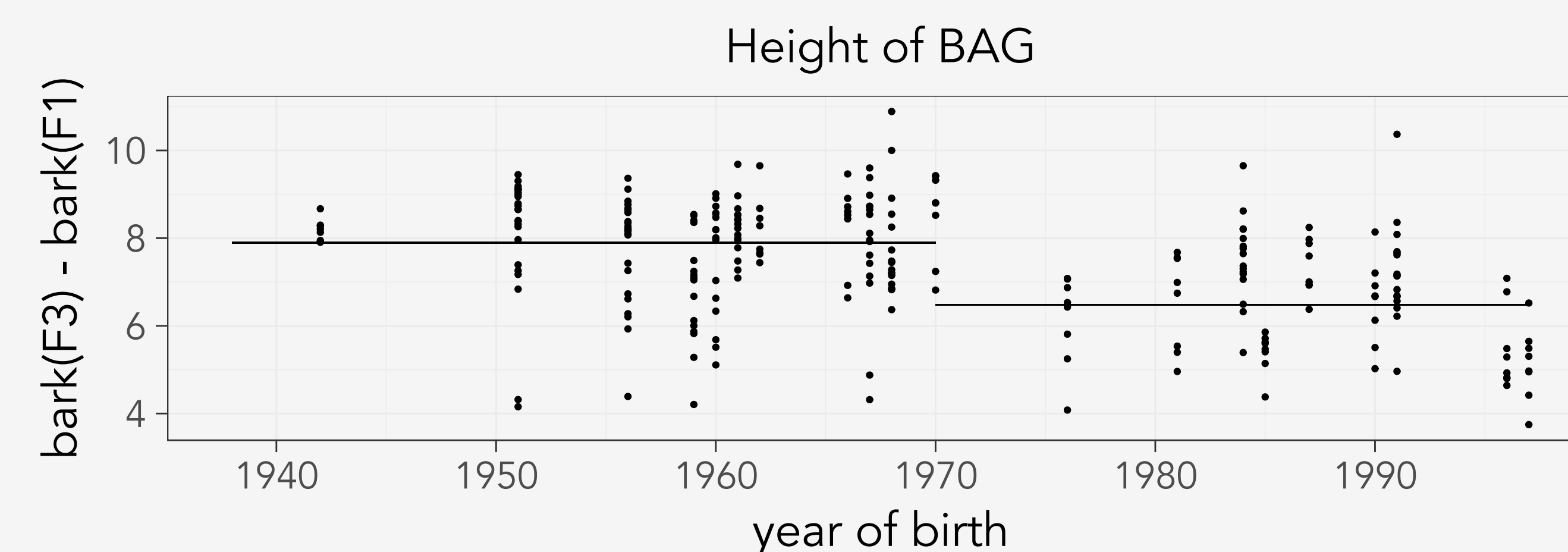
## BAG-raising

### Background

- Raising of TRAP before voiced velars (*bag, snag, dragon, wagon*).
- Characteristic of Washington. (Wassink 2016 and many others)
- Less common & not as high in Oregon. (McLarty et al. 2016, Becker et al. 2016)

### In Cowlitz County

- BAG-raising found mostly in older speakers.
- Significant breakpoint at 1970.



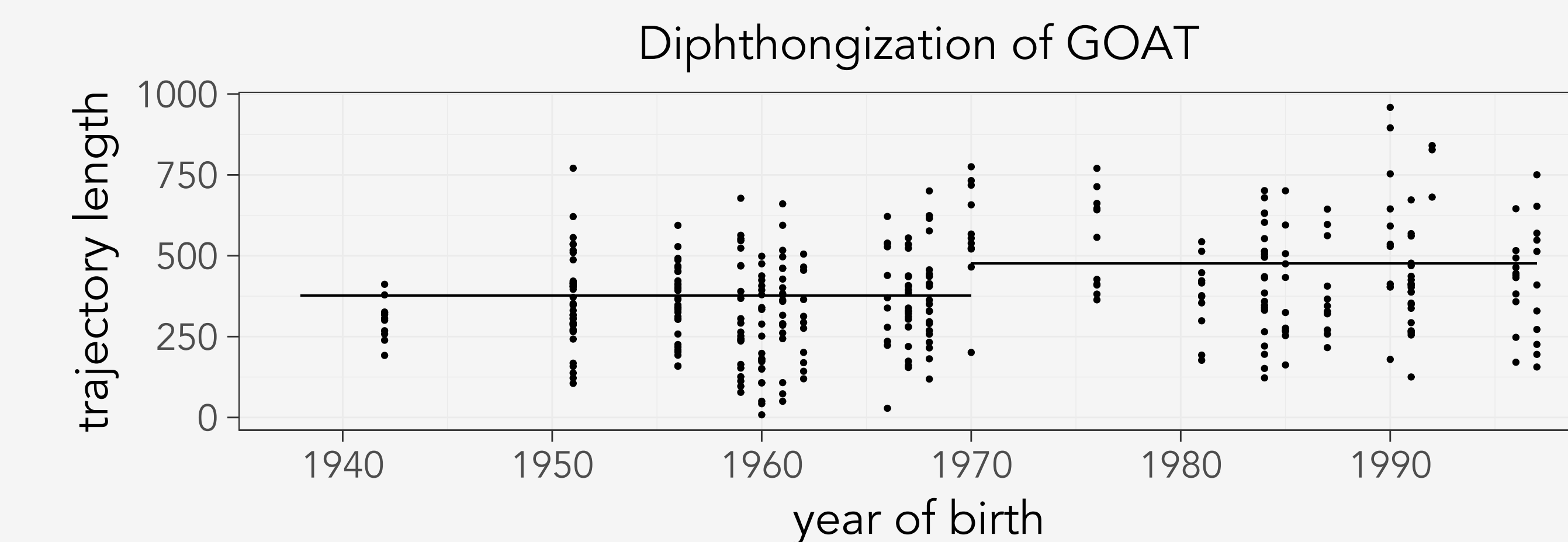
## GOAT-diphthongization

### Background

- GOAT is back in the North, fronted in the South, and intermediate in the West (Labov, Ash, & Boberg 2006), but retracted in Washington (Wassink 2016).

### In Cowlitz County

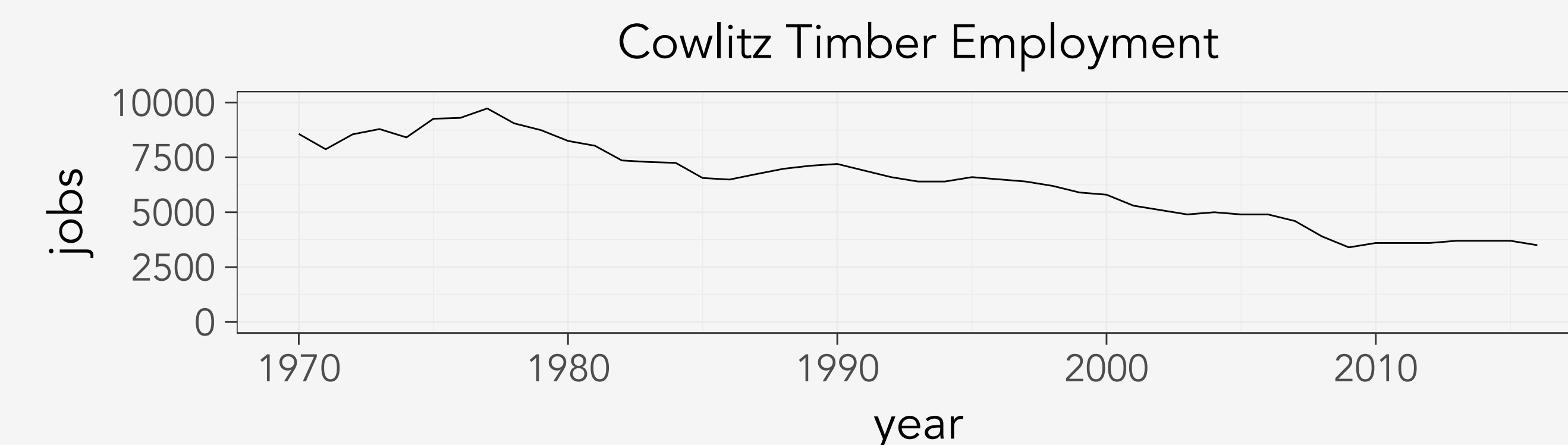
- GOAT is more diphthongized in younger speakers.
  - Significant breakpoint again at 1970.
- No significant change within cohorts.



## Census Data

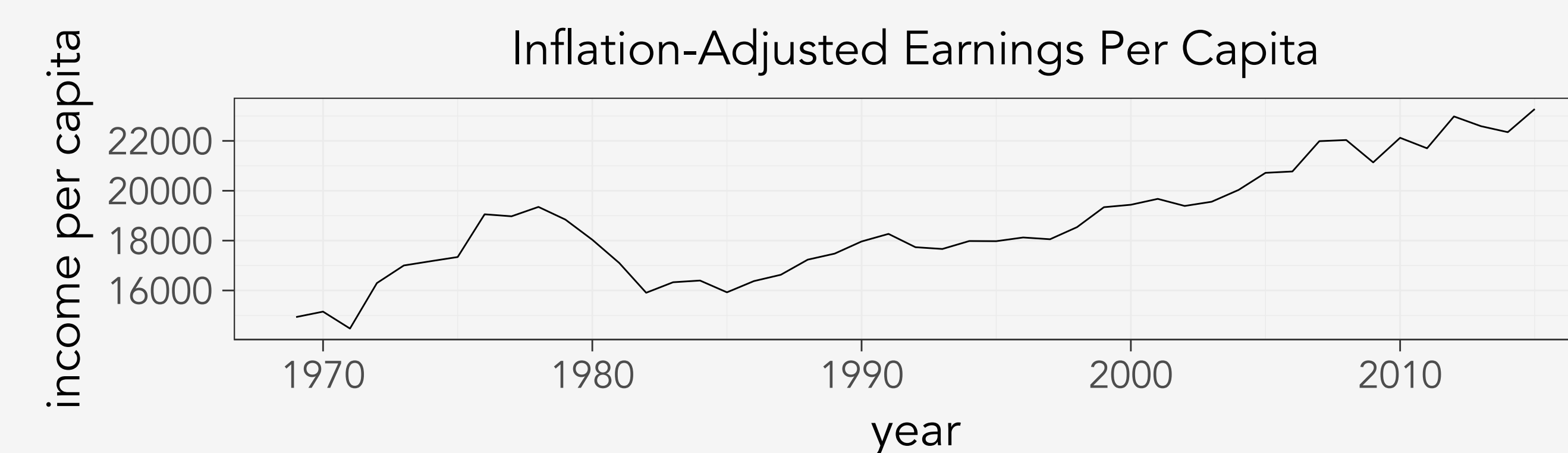
### Timber Employment

- Before 1977, it was easy to get good jobs in the timber industry.
- Then the mills started automating work, causing layoffs.



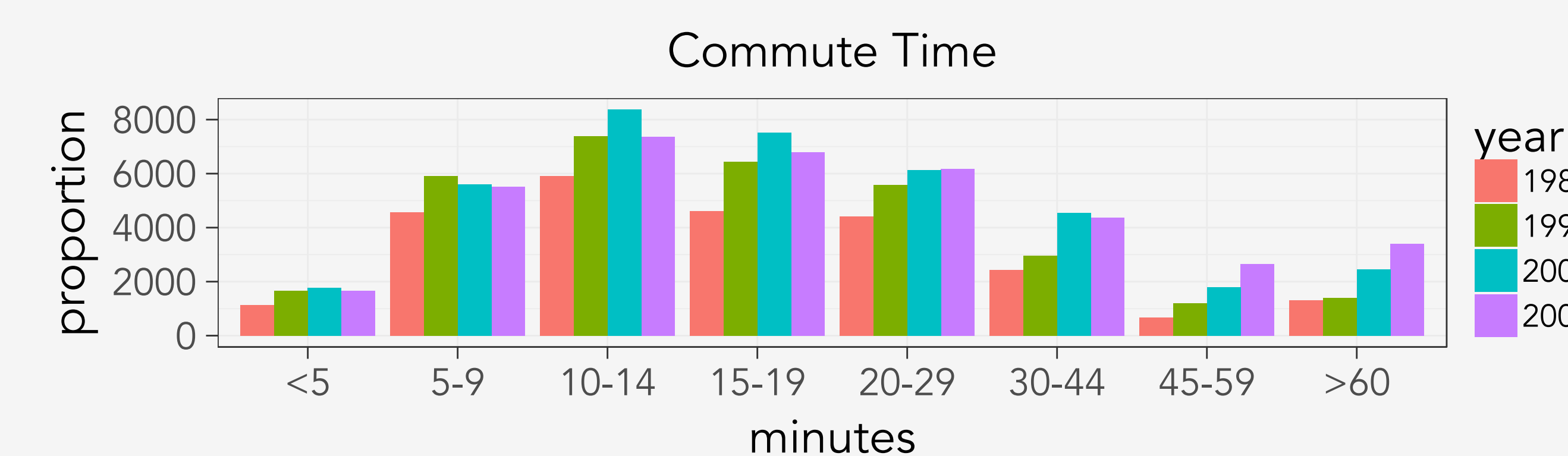
### Wages

- Loggers were paid well, but not after the 1970s.
- The US had recovered from the recession by 1983, but it took Cowlitz County until 2000.



### Travel

- Many people left, but those who stayed found work further away, exposing them to other varieties of English.



## Conclusions

### Linguistic Changes

- Pre-1970 Cowlitz County was like the rest of Washington, but is now linguistically closer to Portland.
- Like other catastrophic changes, traditional features (BAG-raising) were lost as innovative features (GOAT-diphthongization) expanded.

### A Catalyst for Change

- In 1977, more outside contact exposed Cowlitz County residents (and their children) to other varieties of Pacific Northwest English.
- Changes in the mills jumpstarted linguistic diffusion that likely would have happened as California features spread northward (Becker et al. 2016).
- However, correlation does not equal causation.

### A “New” Way of Analyzing Variation

- Regression with a breakpoint can account for a sudden shift in the data, indicating a catastrophic change.

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