

The background of the slide features a large, faint watermark of the Stanford University seal. The seal is circular and contains the text "STANFORD JUNIOR UNIVERSITY" at the top, "FUND. 1891" at the bottom, and "LEVIATHAN DER FREIHEIT" in the center. A central figure, likely a tree or a similar symbol, is also visible within the seal.

A Sociophonetic Study of /l/-Darkening Among Latina/o and European Americans in Bakersfield, California

Robert J. Podesva, Daniel Galbraith, Sunwoo Jeong,
Sharese King, Bonnie Krejci, Kate Lindsey, Teresa Pratt,
Simon Todd, Casey Philip Wong, and Robert Xu

Stanford University

Introduction

Realization of // generally understudied in dialectology research

Most studies on coda //

- Methodological challenge of perceptual coding/acoustic quantification (Hall-Lew & Fix 2012)
- Development of new acoustic methods (Stuart-Smith et al. 2015) or use of articulatory methods (e.g., Turton 2014, 2015)

Fewer studies on onset //

- Straightforward acoustic quantification
- Noteworthy from a dialectological perspective
 - darkening over time (Van Hofwegen 2011, Macdonald & Stuart-Smith 2014)
 - ethnic differences in darkening (Van Hofwegen 2009, Stuart-Smith et al. 2011)

This study: Latin@s vs. white speakers in Bakersfield, CA

Variation in Onset //

Dark Variants



“There’s...**lots** of things to do.”
(White, male, 28 years old)



“So it’s a...pretty, **long** ride.”
(Latina, female, 34 years old)



“free and reduced **lunches**”
(White, female, 59 years old)

Light Variants



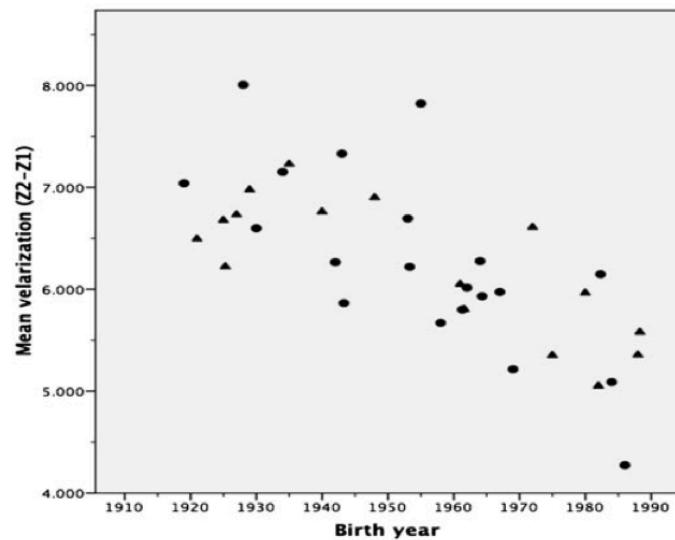
“my **luck**”
(Latino, male, 60 years old)



“or a **lease**”
(Latino, male, 40 years old)

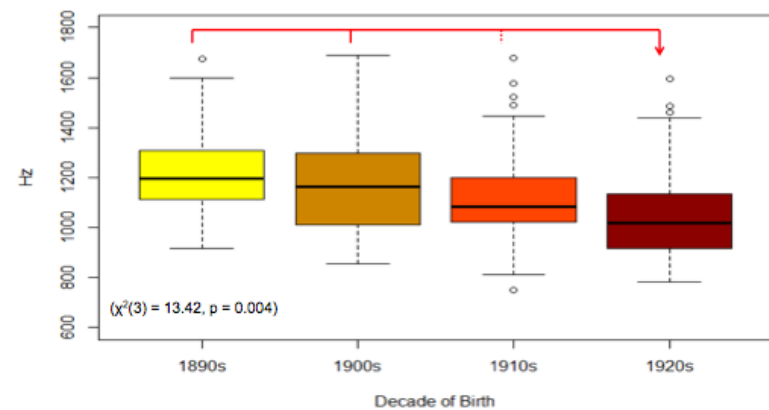
General Trend Toward Darkening of Onset //

African American and European American speakers in North Carolina (Van Hofwegen 2011: 388)



Glaswegian English speakers (Macdonald & Stuart-Smith 2014)

← darker



Ethnic Differences in Onset //

Van Hofwegen (2011)

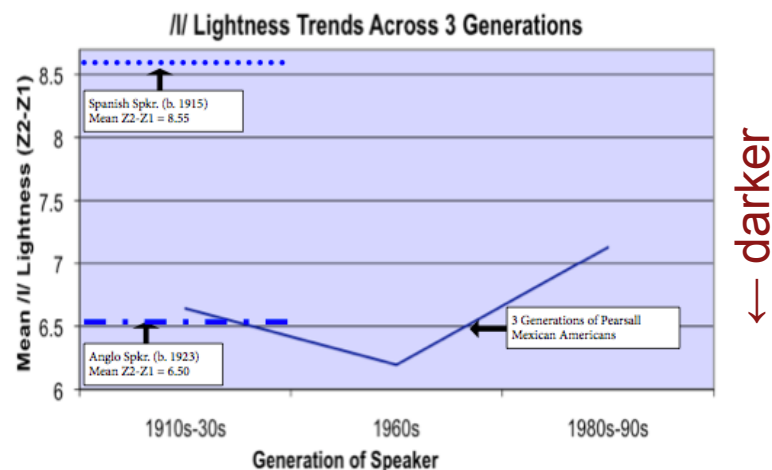
- lighter // among African Americans in North Carolina

Stuart-Smith, Timmins & Alam (2011)

- Punjabi-speaking Asians exhibit lighter // than non-Asians

Van Hofwegen (2009)

- curvilinear pattern among Chicano English speakers, showing darkening, then lightening



Latin@s in Bakersfield

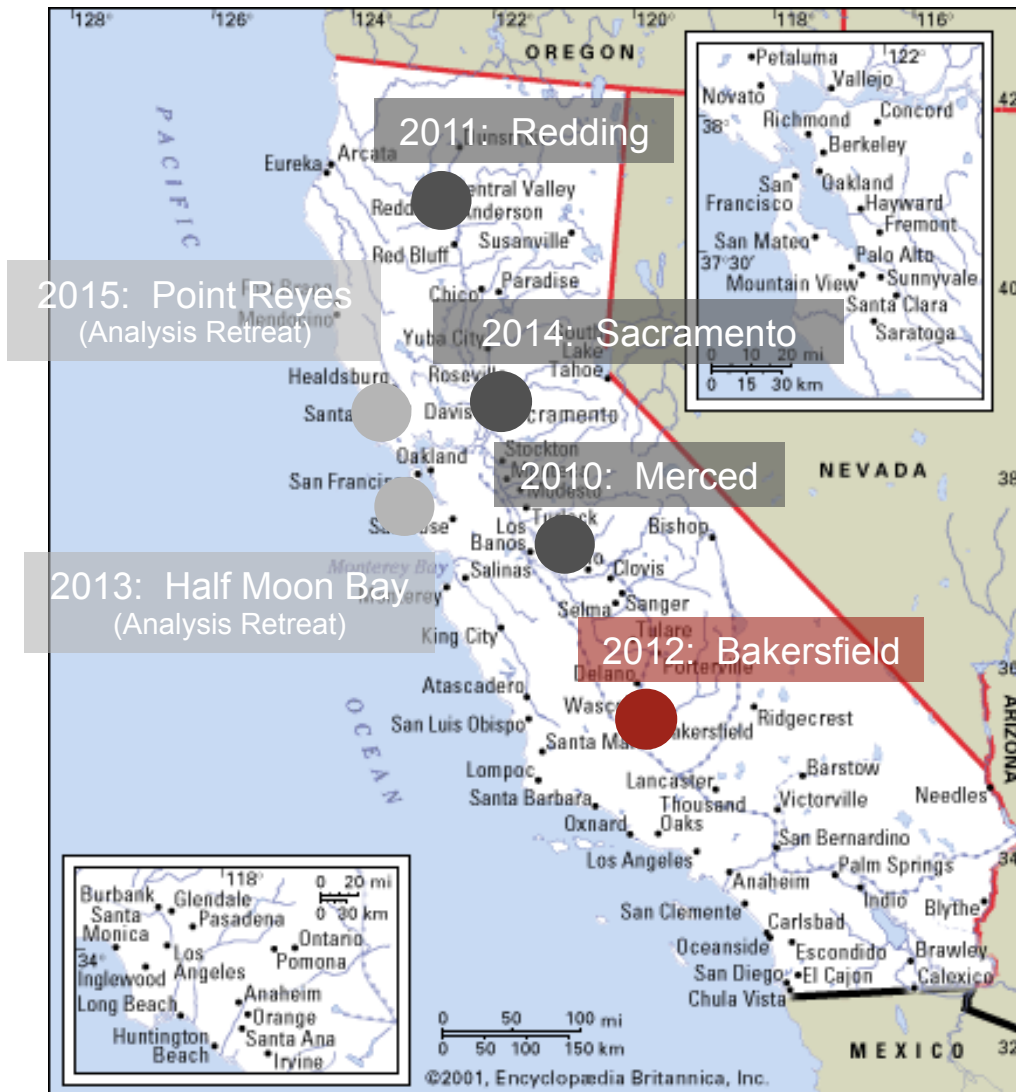
Census patterns

- 45% “Hispanic origin of any race” (compared to 37% non-Latino white)
- Up from 11% in 1970
- Fifth-most residentially-segregated metropolitan area in the US

Little or no dialectological work

- Variationist work on Bakersfield examines white and African American speakers (Labov, Ash & Boberg 2006, Warren & Fulop 2014, Podesva & Van Hofwegen 2015, Pratt 2015, D’Onofrio et al. forthcoming)
- Work on Latin@s in other parts of California have focused on vocalic variation (Fought 1999, Eckert 2008)

Voices of California



Sociolinguistic interviews by Stanford University student and faculty fieldworkers

Data Collection

- Snowball sampling, mixed demographics
- Interviews, word lists, map tasks with each speaker
- Between 80 and 160 interviews per site, over 500 in corpus

Sample

44 lifelong residents of Bakersfield			
22 Latin@		22 white	
13 female	9 male	9 female	13 male
18-58 years old	21-64 years old	22-62 years old	24-59 years old

Analysis

Processing

- Interviews transcribed and force-aligned with FAVE-align (Rosenfelder et al. 2011)

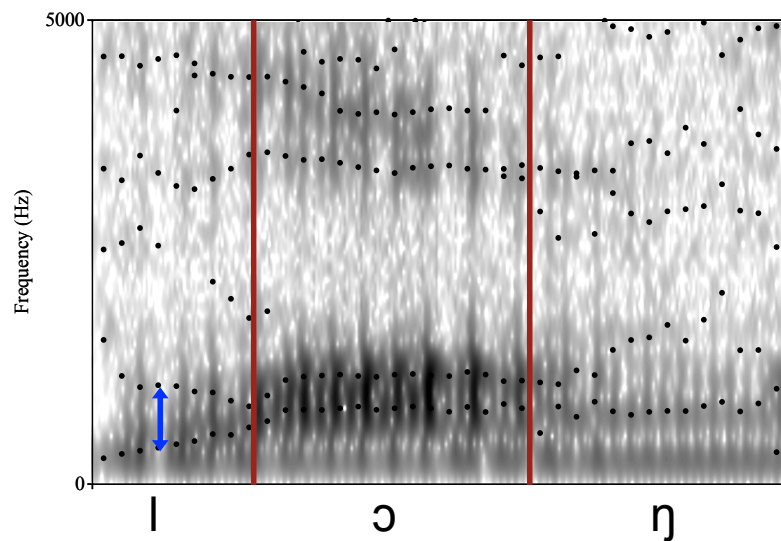
Token Selection

- For each speaker, 30 tokens of word-initial // (not in *like*), no more than 2 tokens/lemma
- Additional 40 tokens of *like* (up to 10 of quotative, discourse marker, verb, and adverb), following Drager (2011)
- Exclusions: simultaneous talk, unclear speech, preceding word-final //

Analysis

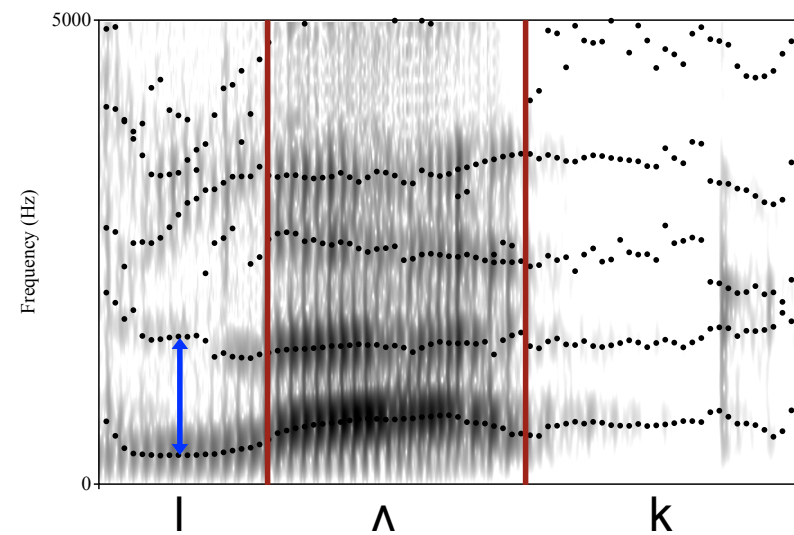
Acoustic Analysis (following Van Hofwegen 2011)

Dark /l/ in *long* (low Z2-Z1)



Latina, 34 years old

Light /l/ in *luck* (high Z2-Z1)



Latino, 60 years old

Statistical Model

Mixed-effects linear regression models on lightness of // measure (Z2-Z1) for non-*like* data (N=1,203) and *like* data (N=1,258).

Fixed Effects

Social

- age
- sex
- ethnicity

Linguistic

- stress
- log duration
- phonetic environment
(Z2 30 ms into following vowel)

Random Effects

- speaker
- word

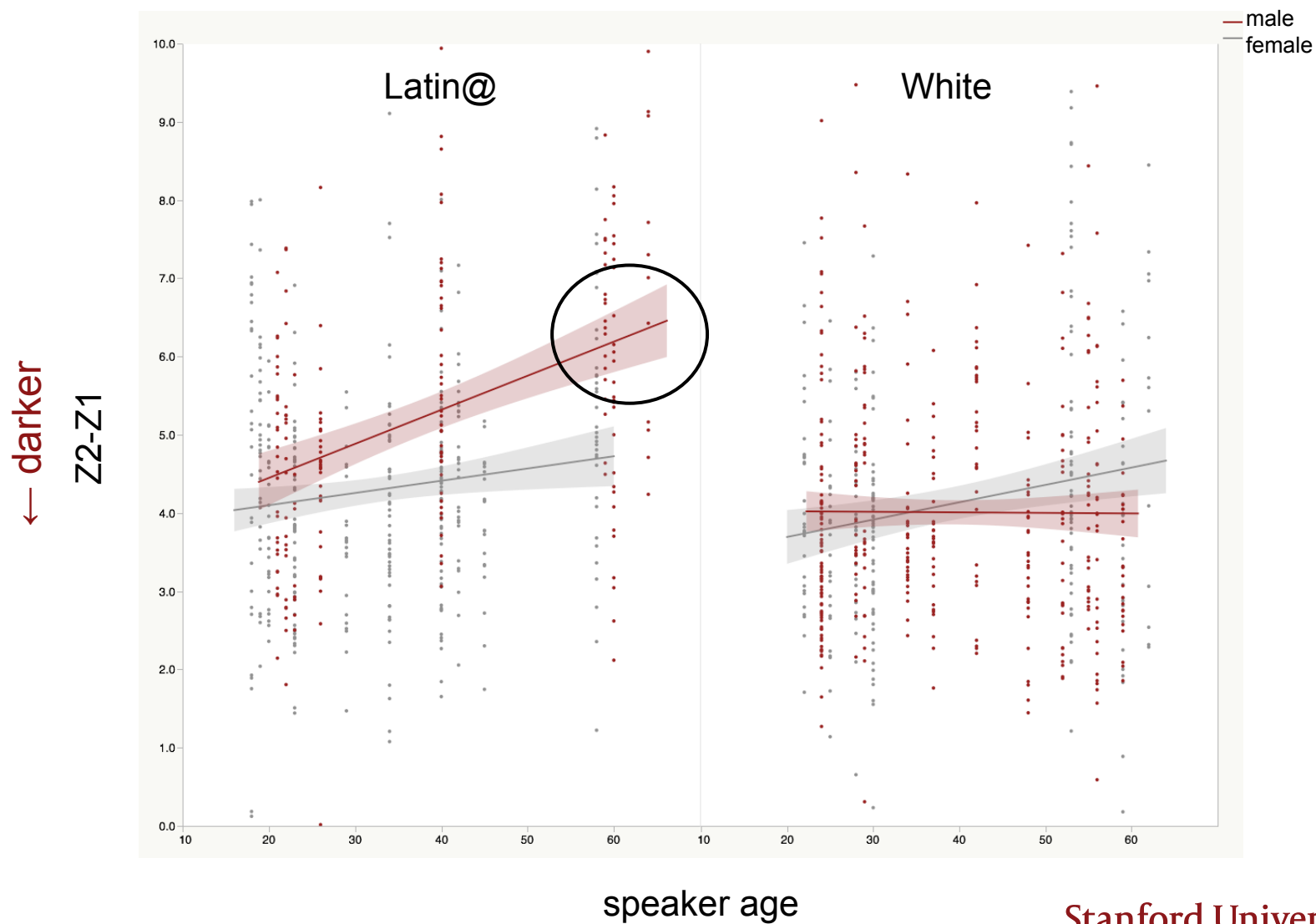
Summary of Model (non-like data)

Term	Estimate	Std Error	DFDen	t Ratio	Prob> t
Intercept	3.128	0.3977	412.1	7.87	<.0001*
duration(log)	0.233	0.0839	1114.0	2.77	0.0057*
phonetic_context(30ms_into_V)	0.399	0.0235	1158.0	16.99	<.0001*
ethnicity[Latin@]	0.290	0.0680	35.0	4.26	0.0001*
sex[female]	-0.188	0.0677	34.4	-2.77	0.0090*
ethnicity[Latin@]*sex[female]	-0.169	0.0677	34.4	-2.5	0.0174*
age	0.018	0.0047	35.2	3.74	0.0007*
ethnicity[Latin@]*age	0.010	0.0047	35.0	2.11	0.0417*
sex[female]*age	-0.004	0.0047	34.8	-0.78	0.440
ethnicity[Latin@]*sex[female]*age	-0.011	0.0047	35.0	-2.22	0.0330*

Linguistic Factors

- phonetic context: the higher the F2 of the following vowel, the lighter the //
- duration: // becomes lighter with longer duration

Social Factors (non-like data)



Social Networks and Sex Differences

Occupation

- Nichols (1983): women's jobs often require them to use standard forms; men's jobs allow them to retain nonstandard forms

Neighborhood diversity

- In spite of Bakersfield's large Hispanic population, the Bakersfield-Delano region was ranked as the fifth-most residentially segregated metropolitan area in the U.S. (2010 Census)

Latina Social Networks

Occupation

- students, nurses, teacher, financial consultant, pharmaceutical representative

Neighborhood diversity

- “When I grew up here the seventies there was only the upper middle class, the white families, and **we were the only Hispanics on the block.**” (Latina, 42 years old)
- “Where I live in the Northwest, there, **it’s mainly Caucasians.**” (Latina, 34 years old)

Latino Social Networks

Occupation

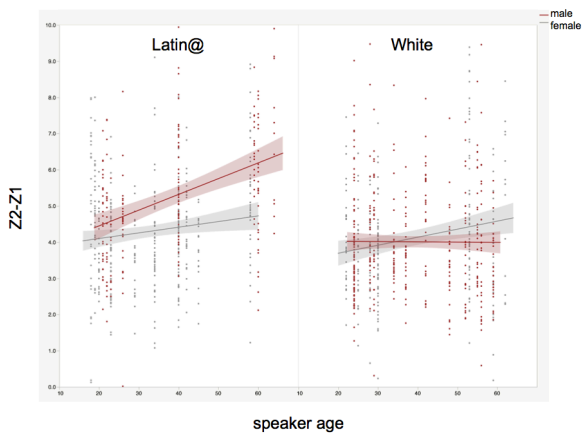
- older Latinos: truck driver, retired custodian, community activist (formerly farm worker)
- “Because my dad is a **farm worker** and he’s – he goes to wherever the work was at – that’s where he worked at, in the grape fields.” (Latino, 60 years old)

Neighborhood diversity

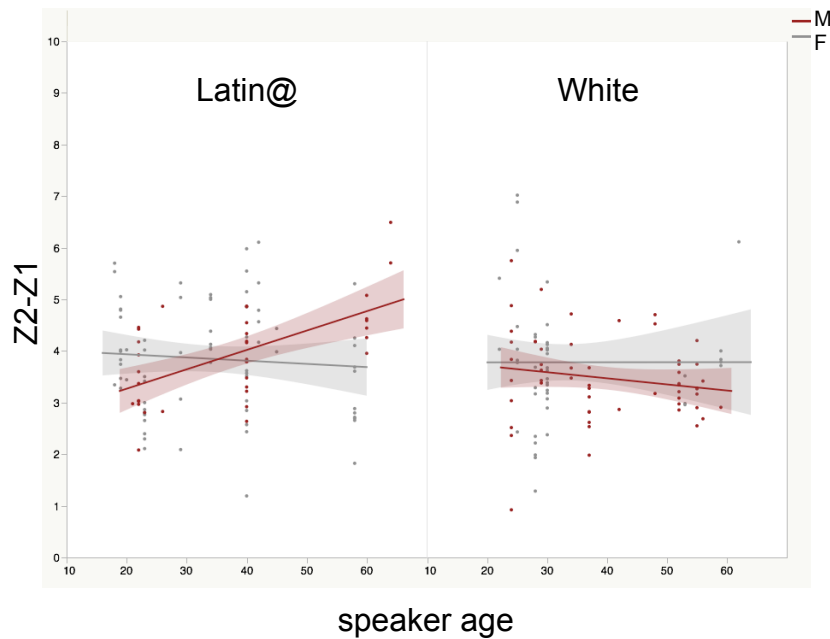
- “I live in **East Bakersfield**, but, but...I live...pretty ni- uh it’s a nice neighborhood where I live...” (Latino, 59 years old)
- “I just feel that now Bakersfield is just being **culturally mixed** and there’s African Americans and there’s a...Caucasian community and there’s Hispanics (Latino, 21 years old)

like

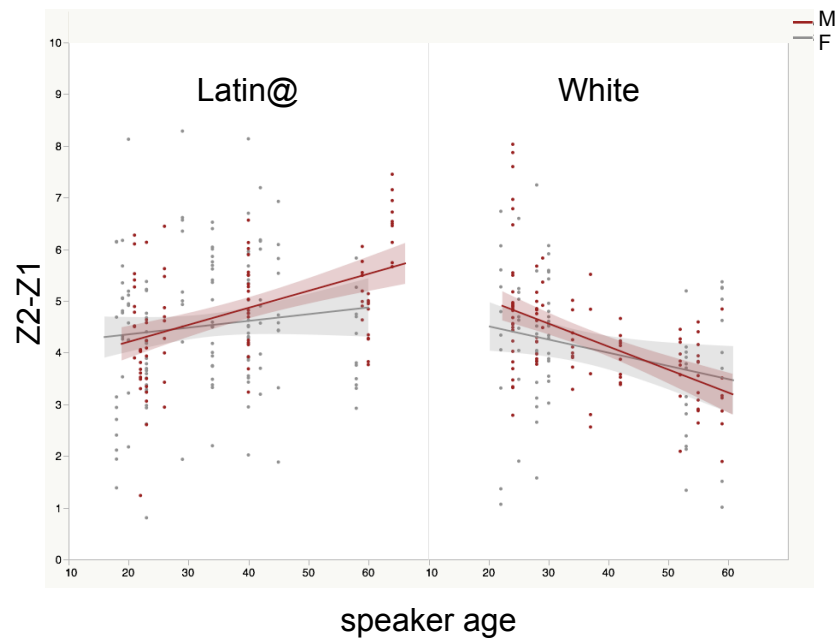
non-*like* data



lexical verb *like*



discourse marker *like*



Conclusion

Regional differences in the ethnic patterning of // velarization
(Bakersfield, California vs. Pearsall, Texas)

- calls pan-regional ethnolectal accounts and Spanish substrate accounts into question
- underscores value of localizing explanations to particular communities

Future directions

- Closer look at the *like* data
- Additional features
- Social network analysis

The background features a large, light gray watermark of the Stanford University seal. The seal is circular and contains the text "L. LAND STANFORD JUNIOR UNIVERSITY" around the top edge, "E LUFT DER FREIHEIT WEHRT" around the bottom edge, and the year "1891" at the very bottom. In the center of the seal is a redwood tree standing on a hillside.

Thank You!

Many thanks to the Richard A. Karp Foundation and Stanford University for funding data collection, as well as Bakersfield interviewees and fieldworkers for their participation.

Questions?

podesva@stanford.edu

Segmentation Criteria

The onset and offset of // were determined primarily based on **wideband spectrographic analysis**.

The **onset** of // was taken to coincide with a dip in intensity, at which point the sound transitioned from a relatively low intensity // to a higher intensity vowel. In infrequent cases where significant dips in intensity were not evident, we looked for transitions in F2 (at a point prior to the end of formant movement).

The **offset** of // was taken to coincide with the onset of F2. When a singular onset was not evident on the basis of F2, higher formants were consulted, from F3 upward.

In all other ambiguous cases, boundaries were determined **auditorily**.

Summary of Model (discourse marker *like* data)

Term	Estimate	Std Error	DFDen	t Ratio	Prob> t
Intercept	7.065	0.4484	213.7	15.76	<.0001*
duration(log)	-0.635	0.1092	401.7	-5.82	<.0001*
phonetic_context(30ms_into_V)	0.307	0.0421	405.9	7.29	<.0001*
ethnicity[Latin@]	0.222	0.0828	36.5	2.69	0.0108*
age	-0.004	0.0061	37.8	-0.71	0.4829
ethnicity[Latin@]*age	0.032	0.0061	37.8	5.22	<.0001*