

Our Ears Are as Prejudiced as Our Eyes

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On Peoria, Anishinabewaki, Potawatomi land

Dialect Discrimination in the Housing Market

On Deck Today

- Background on US Housing and Social Identity Perception
- Purnell et al (1999) Replication
- Preliminary work and Results
- Methodology for Ongoing Experiment

US Housing

- Always been separated along color and class lines

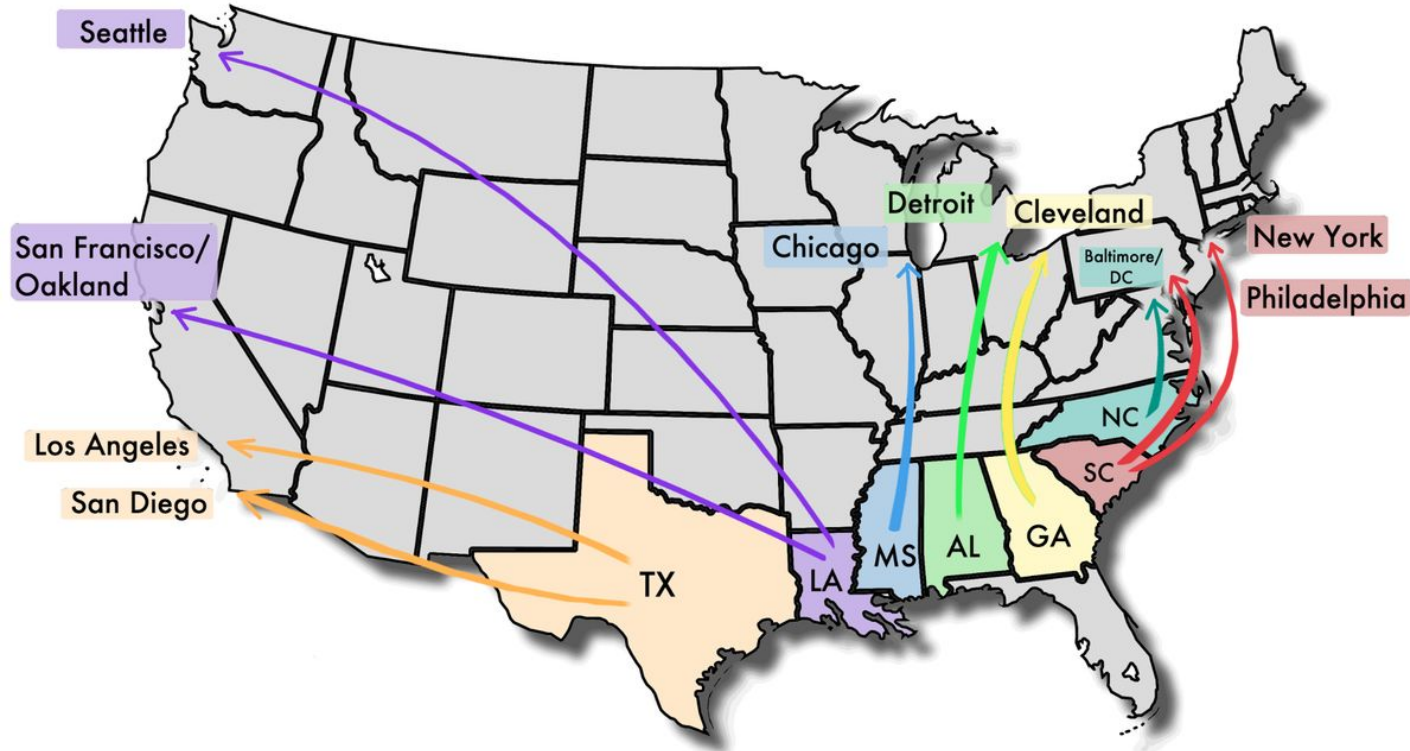
Overt Segregation



Great Migration

The Geography of the Great Migration

The Migration of African Americans from the American South (1910-1970)



Covert Segregation

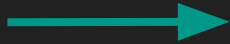
➤ Highway Project

Eisenhower's Highway Project

Projects



Suburbs



Every US city has this history written on its streets



Covert Segregation

(ask me later about Blockbusting,
Gentrification and Redistricting,
and the Racialization of Media)

- Highway Project
- Suburbs and White Flight

National Housing Act

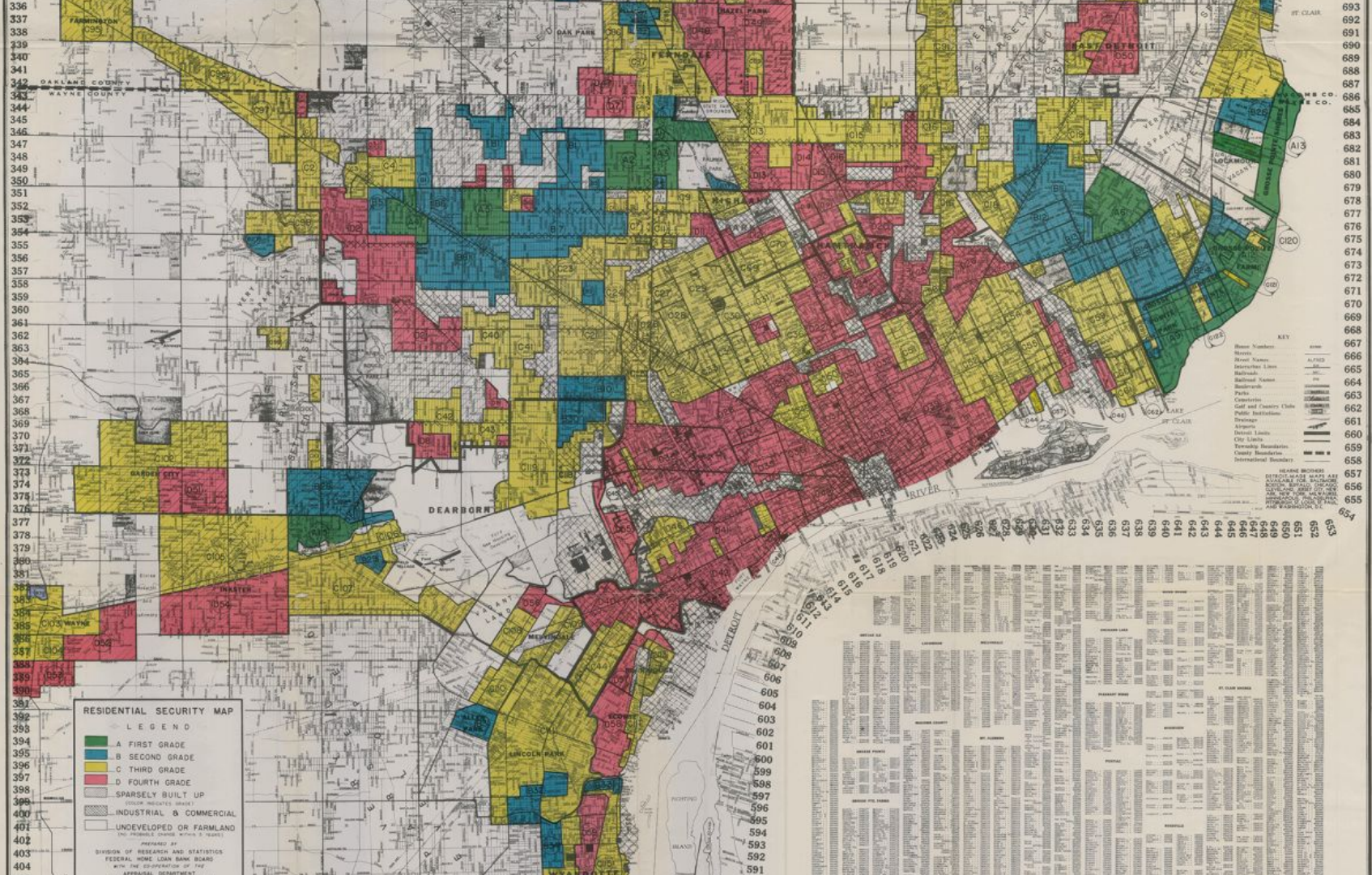
- Part of the New Deal (1934)
 - Home Owners Loan Corporation
 - “Low risk,” suburban areas

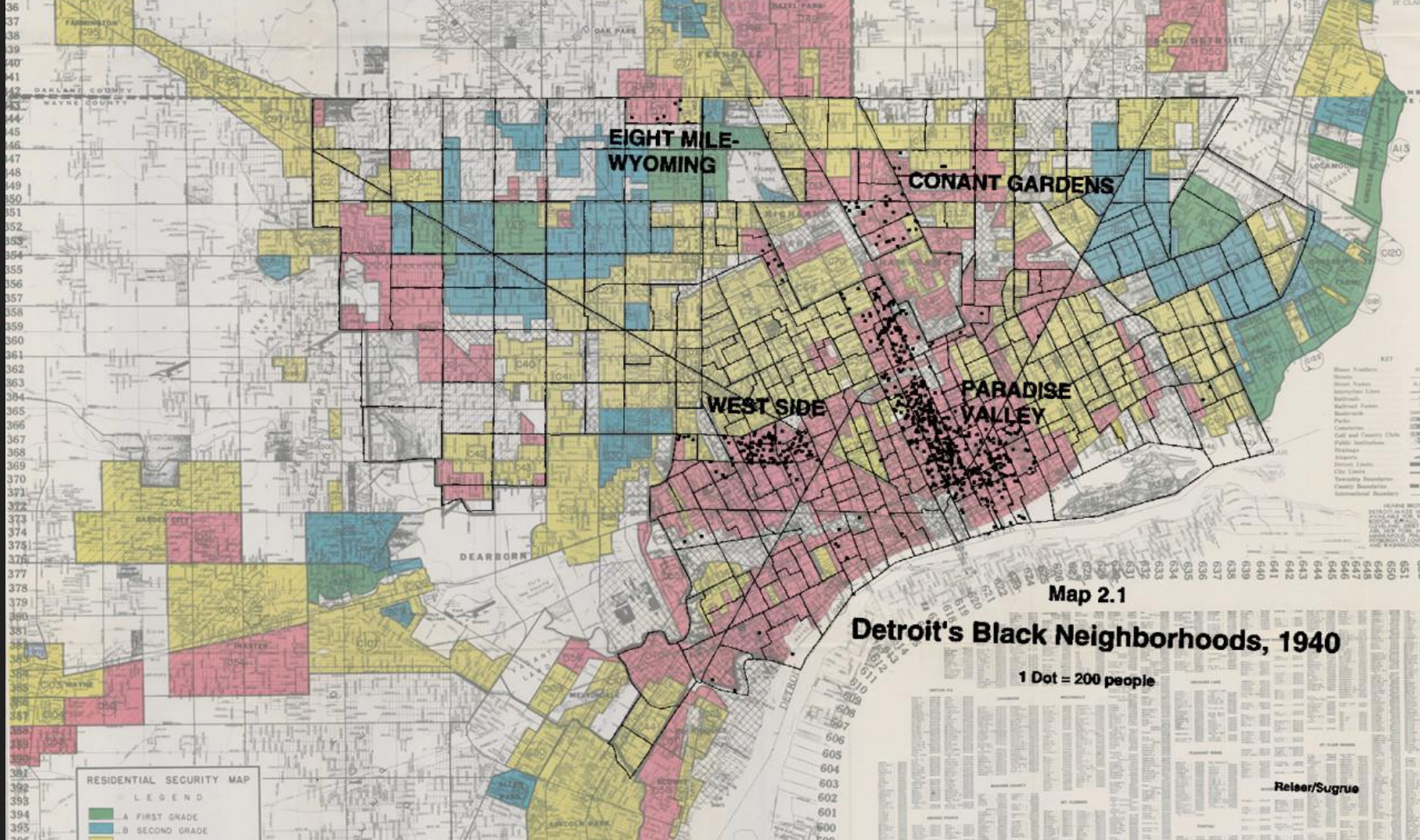
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 - “Low risk,” suburban areas
- Explicitly mentions non-white races as reasons for risk
 - “Inharmonious racial or nationality groups”
 - “Multiple family homes”
 - “Smoke, odors, and fog.

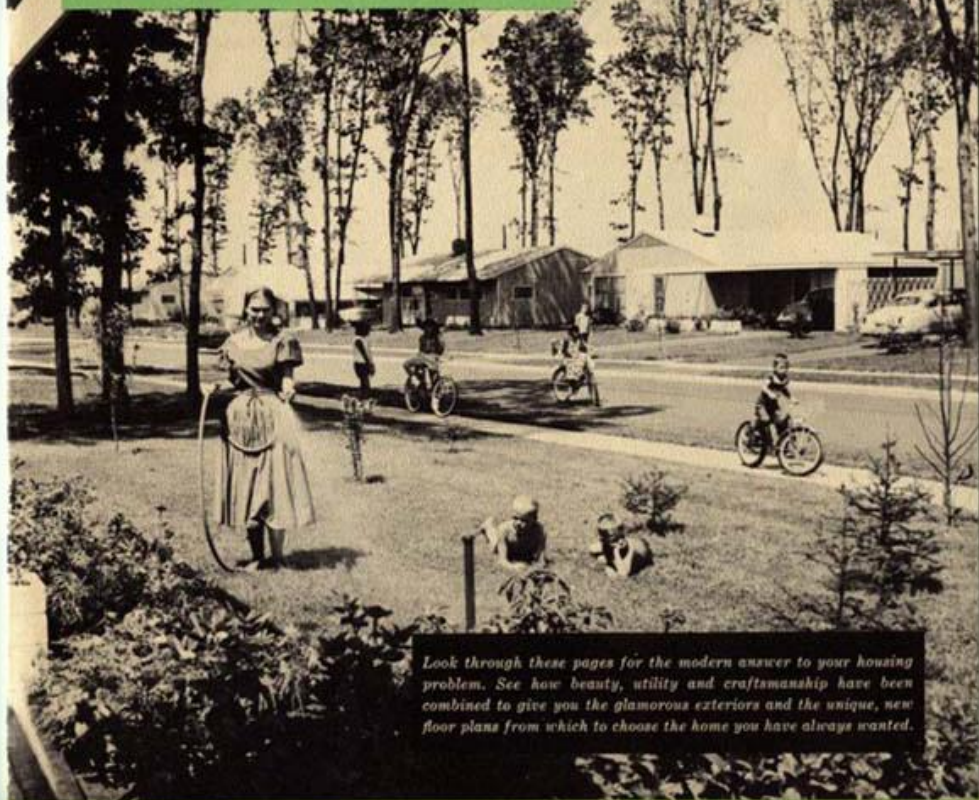
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 - “Smoke, odors, and fog.
- Redlining
 - Federal risk assessors





*This is the way you
live at **LEVITTOWN***



Look through these pages for the modern answer to your housing problem. See how beauty, utility and craftsmanship have been combined to give you the glamorous exteriors and the unique, new floor plans from which to choose the home you have always wanted.

Suburbs

Supported by the HOLC

- Levittown
 - Racial Covenants
 - Keep out Jews and Blacks

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- Shelley v Kraemer 1948
 - 10 Blocks away!
 - Thurgood Marshall
 - Enforcement of Covenants violates 14th Amendment

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 - Enforcement of Covenants violates 14th Amendment
- Equity and Access
 - State and Federal jurisdictions
 - Professional vs Personal freedom
 - Social vs Political equality

Fair Housing Act

- Race, National Origin, Color, Religion (1968)
- Sex (1974)
- Disability and Familial Status (1998)

ZERO cases

Dialect Discrimination

- Discrimination is, legally, an act that can occur only in physical proximity.

When you open your mouth to
speak, you reveal your identity,
not merely your ideas.

Dialect Discrimination is insidious

- Dialect identification happens in a moment
- Happens outside the space of canonical, legal discrimination

Speech Perception

The Human is a discerning individual

- Listeners perceive phonetic variants on a continuum
 - Categorical Perception
 - Individual Experience
- Variation in speech is useful to listeners
 - Organize newly encountered variants with **talker-specific** information

Ladefoged & Broadbent, 1957; Nygaard & Pisoni, 1998; Niedzielski, 1999; Hay & Drager 2006; Sumner, Kim, King, and McGowan, 2013; McGowan, 2015; Beddor, Coetzee, Styler, McGowan, Boland 2018

Voices are Socially Informative

Scharinger et al. (2016)

“Our passive oddball experiment using AAE and SAE tokens of ‘Hello’ is the first neuromagnetic evidence for an **early extraction of phonetic information** that allows for categorical dialect perception.”

Voices are Socially Informative

Scharinger et al. (2016)

“Thus, it seems that dialect extraction from auditory speech input occurs relatively quickly and does not require attention.”

Landmark Study Purnell, Idsardi, & Baugh (1999)

“Given that **discrimination according to race** or national origin **is illegal** under the Fair Housing Act and the Civil Rights Act of 1968 as amended, we seek to demonstrate that the identity of **race** (or national origin) **is reflected**, not only visually but also **auditorily** in an individual’s speech. In addition, we endeavor to establish that **listeners hear and positively identify a speaker’s dialect with great accuracy**. The following experiments reveal the possibility of auditory discrimination and the probability of **social discrimination** by **auditory identification** of dialects. Auditory cues thus comprise a significant factor in establishing **evidence** in effecting a prima facie case where the Fair Housing and Civil Rights Acts are involved.”

Accurate
dialect
ID's are
possible.

Table 4
Dialect and Racial Identification

Dominant Dialect/Racial Identification	Guise or Gender	% Correct Identification
AAVE/African American	Male	97
	Male	95
	Female	85
	Baugh (AAVE)	84
	Male	77
ChE/Hispanic American	Baugh (ChE)	91
	Male	86
	Female	79
SAE/European American	Male	92
	Female	87
	Baugh (SAE)	86
	Female	86
	Female	83
	Male	81

Note. AAVE = African American Vernacular English; ChE = Chicano English; SAE = Standard American English.

Convincing pattern of appointment by guise by neighborhood demographic

Table 1

Confirmed Appointments to View Apartments Advertised for Rent in Different Greater San Francisco Geographic Areas (in percentages)

Dialect Guise	Geographic Area				
	East Palo Alto	Oakland	San Francisco	Palo Alto	Woodside
AAVE	79.3	72.0	63.5	48.3	28.7
ChE	61.9	58.3	53.2	31.9	21.8
SAE	57.6	68.7	71.9	63.1	70.1
Total number of calls for each locale	118	211	310	263	87

Note. AAVE = African American Vernacular English; ChE = Chicano English; SAE = Standard American English.]

Table 2

Population in Different Greater San Francisco Geographic Areas by Race and Ethnicity (in percentages)

Population	Geographic Area				
	East Palo Alto	Oakland	San Francisco	Palo Alto	Woodside
African American	42.9	43.9	10.9	2.9	0.3
Hispanic	36.4	13.9	13.9	5.0	3.8
White	31.7	32.5	53.6	84.9	94.7

Source. U.S. Census Bureau (1990).

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Dialect Discrimination

Exists.

- Possible!
- Works in both directions
 - Us versus Them

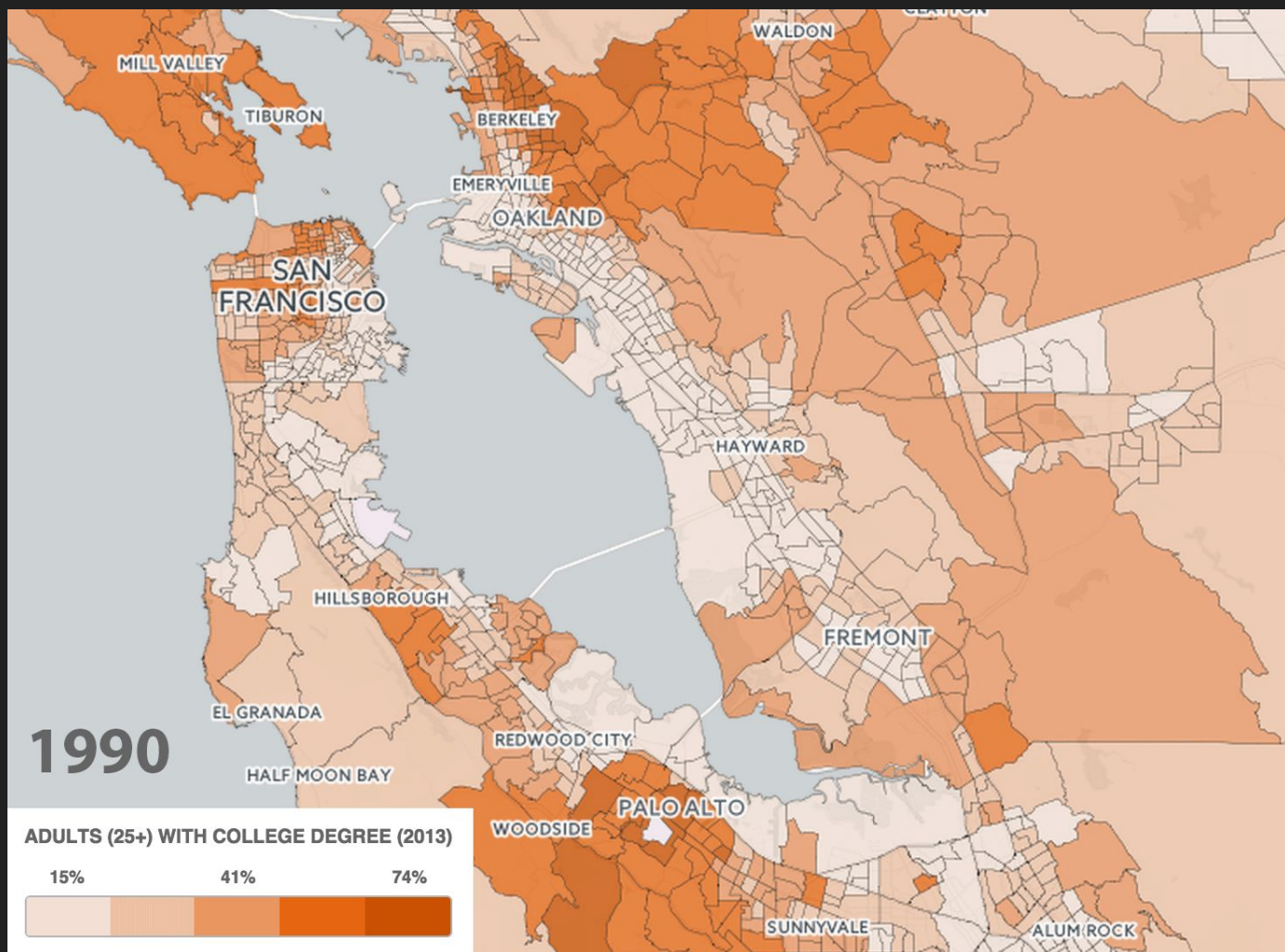
Current Study

- Purnell et al (1999) Replication
- Preliminary work and Results
- Methodology for Ongoing Experiment

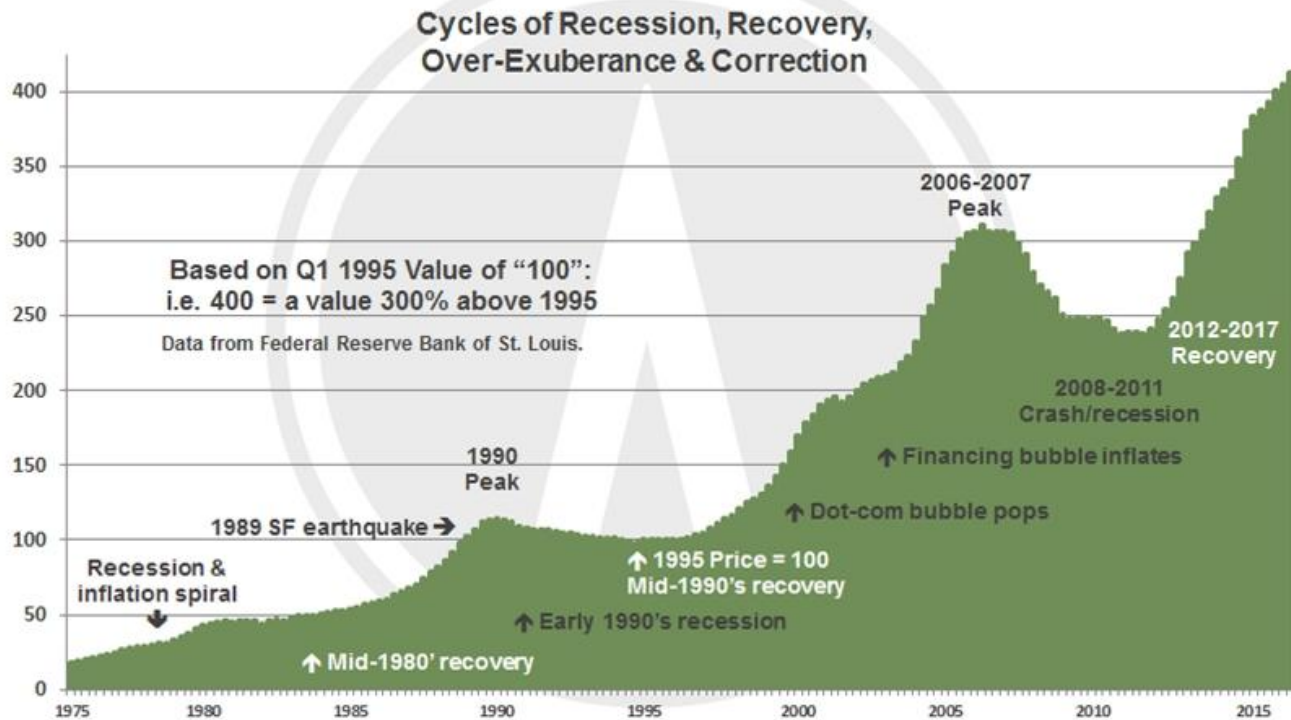
Replication

Replicain'tion

- 20 years and Silicon Valley



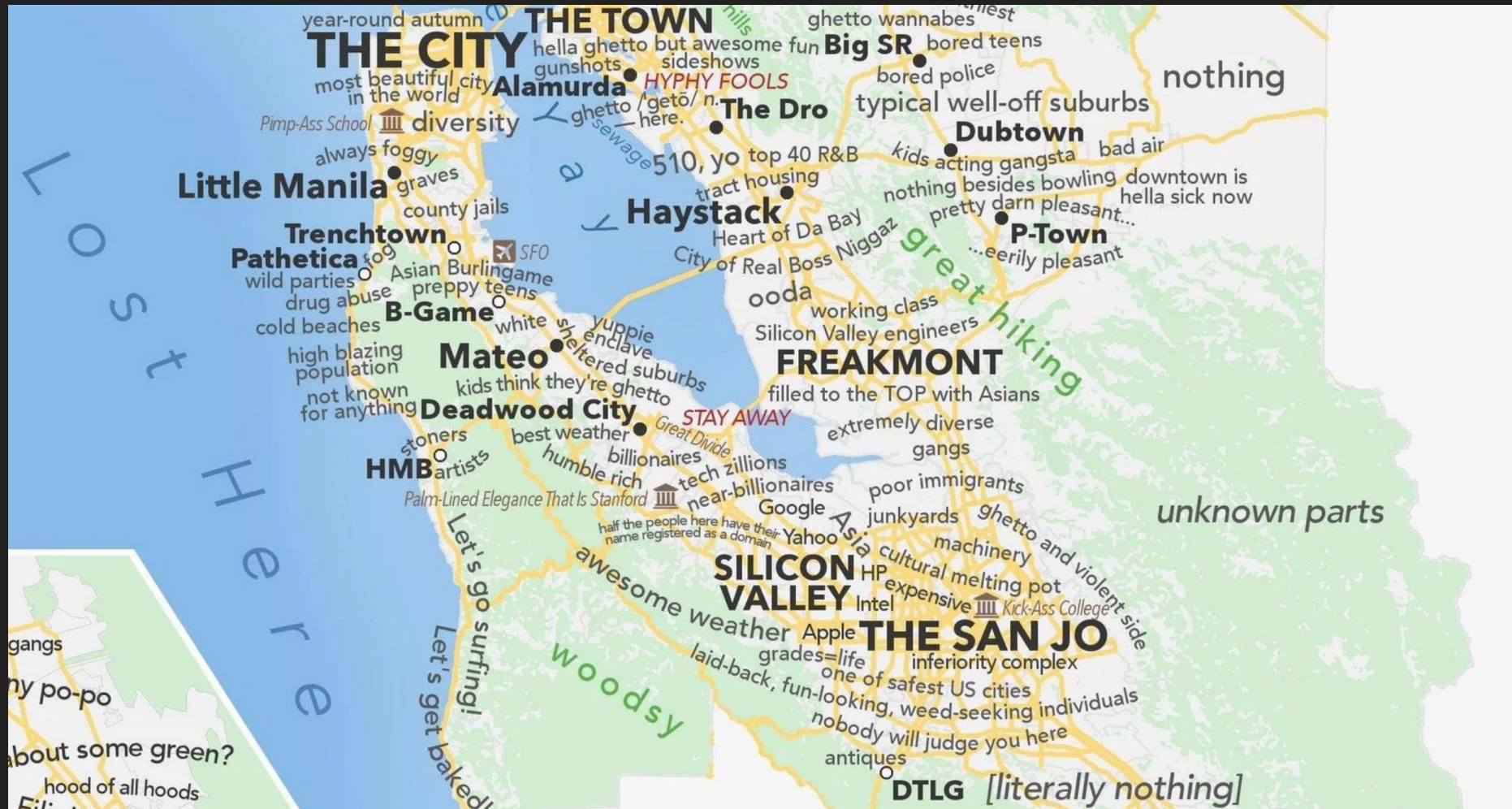
Federal Housing Finance Agency (FHFA) House Price Index San Francisco & San Mateo Counties, Appreciation Trends since 1975



FHFA all transactions house price index, not seasonally adjusted. The HPI is a weighted, repeat-sales index, based on repeat mortgage transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac.



PARAGON
REAL ESTATE GROUP



Replication

Replicain'tion

- 20 years and Silicon Valley
- Craigslist and Yelp!

Replication

Replicain'tion

- One Realtor: Three Voices
 - Impossible?

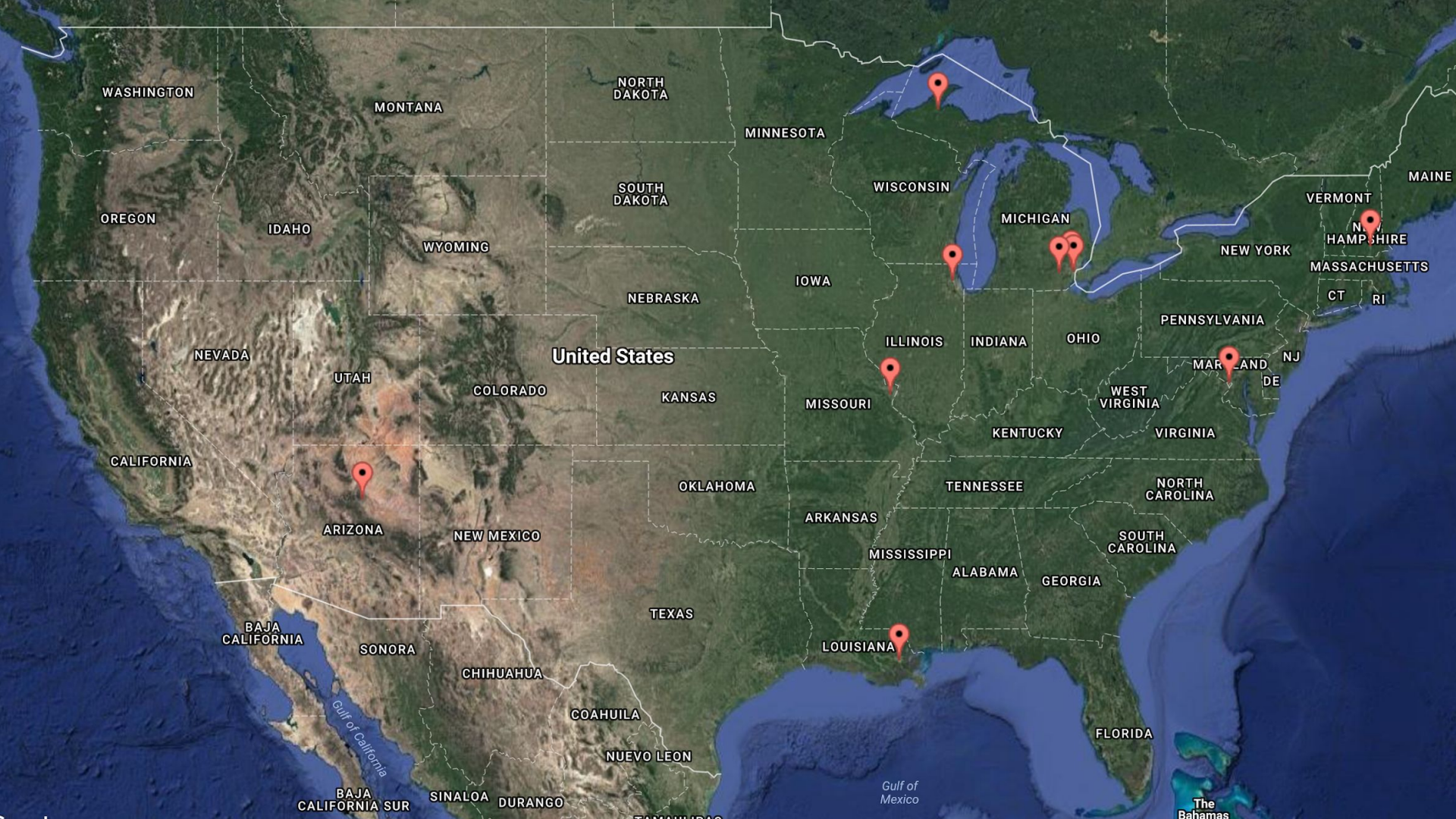
Preliminary Work



Speech Perception

Can listeners hear social class
membership?

- National Survey of Rental Professionals
 - Basic Demographics and Language Experience
 - Rootedness (h/t Paul Reed)
 - Professional Preferences
- N=68



What are some **qualities** you find
appealing in a potential tenant?

“Appealing” isn't really part of the process. All qualified applicants are accepted if units are available.”

“I don't expect people to come dressed for a job interview, but that is essentially the first step.”

*“Be well spoken and considerate on the
phone”*

Accurate ID of Dialect

Updates of Methodology

- Typical matched-guise paradigm
 - Vary sound patterns only
 - Holds lexical, morphophonological, suprasegmental features constant

Dialect is more than speech sounds!

Voices belong to real talkin
workin people

- Listeners aren't discriminating
in controlled settings
- Represent constellations of
features in guisecraft

My Three Native Dialects

- African American (AAL)
 - Who I Am
- Standard American (MUSE)
 - What I Do
- Southern American (SA)
 - Where I Am From

Dialect ID Stimuli

Normed Samples available at <https://bit.ly/2GUcabT>

- African American
- Southern American
- Standard American

Dialect ID

- 35 listeners on Amazon's MTurk
- Identify race and region, and how many distinct speakers were heard

Results

MUSE Sample

Raced at 89% White

Region Rating

14% Northeast 17%
West Coast 17% East
Coast

AAL Sample

Raced as 89% Black

Region Rating

29% South 22% East
Coast

SA Sample

Raced as 97% White

Region Rating

71% South 2%
Alabama, Texas,
Georgia, Arkansas,
respectively.

How many voices? 97% identified three distinct speakers

Initial Attitude Impression

Person Behind the Voice

- Replay once
- 100 point, non-binary sliders, rate on 10 qualities
 - Chosen from “ideal tenant” qualities listed on rental professional survey

Southern American English

Pleasant	Feminine	Educated	Attractive	Poor
72.09	89.11	52.46	62.71	37.26
Masculine	Confident	Trustworthy	Rich	Difficult
7.69	65.74	69.23	46.69	26.4

Red boxes represent positive extremes (meaning that the voice possesses characteristics which invoke this impression) and Yellow boxes represent negative extremes (meaning that the voice does not possess such characteristics).

Mainstream US English

Pleasant	Feminine	Educated	Attractive	Poor
74.06	81.11	80.74	69.66	16.4
Masculine	Confident	Trustworthy	Rich	Difficult
17.11	77.46	71.43	64.54	32.91

Red boxes represent positive extremes (meaning that the voice possesses characteristics which invoke this impression) and Yellow boxes represent negative extremes (meaning that the voice does not possess such characteristics).

African American Language

Pleasant	Feminine	Educated	Attractive	Poor
54.11	76.97	38.29	48.54	54.47
Masculine	Confident	Trustworthy	Rich	Difficult
18.03	58.8	51.6	24.43	47.37

Red boxes represent positive extremes (meaning that the voice possesses characteristics which invoke this impression) and Yellow boxes represent negative extremes (meaning that the voice does not possess such characteristics). **NOTE: the AAL voice conveys extremes only!**

Taken Together

Preliminary Results

- Listeners heard three distinct speakers
 - Dialects and races distributed as expected
- Listeners heard three different people
 - Matters, because social equality and personal freedoms still aren't captured in all equal protection laws

We Know

- 190 years of racialized housing discrimination
- People accurately **hear** social information
- People make judgements based on voice alone
- Property owners **care** about how you sound

How, in today's market, does your voice affect your chances of finding a home in whatever neighborhood you can afford?

What are the effects of race and
region?

Pilot

Ask me replication questions
later!

➤ Data-Driven

Experiment!

Qualifying Research Project

- Recording my end of the conversation
- 30 calls per voice, 10 each neighborhood
 - Black working-class
 - White working-class
 - Middle-class

Experiment!

Qualifying Research Project

- 30 calls per voice, 10 each neighborhood
 - Black working-class
 - White working-class
 - Middle-class
- Trial Protocol
 - REPLICABLE!

Experiment!

Qualifying Research Project

- Apartment Descriptions Corpus
 - Compare with Redlining descriptions
 - Target character of neighborhood

Predictions

- Southern will have more **prestige** than Standard in the White working class areas

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- Evidence of **Steering**
 - Illegal under FHA

Predictions

- Southern will have more **prestige** than Standard in the White working class areas
- Evidence of **Steering**
 - Illegal under FHA
- MUSE voice will get the most accurate information
 - Native Neighborhood Intuitions
 - Neighborhood character

Phonetics of Code Switching

- People accurately identify social information in a voice, but how?
 - Full scale phonetic analysis of my three voices in comparison.

Phonetics of Code Switching

- People accurately identify social information in a voice, **but how?**
 - Full scale phonetic analysis of my three voices in comparison.
- Develop **a list of features** that reliably map to dialect
 - **Aid** the **victims** burden of proof!

This matters.

Part of **being human** means knowing
something about how people work
because of how they sound.

Sounding Non-Standard
is not about ignorance or laziness.

We need to become more aware of
how we use language to make
judgments about others, and how
these judgments **shape our behavior.**

Thanks!

All Y'all

Kevin B. McGowan
The University of Kentucky

Rachel Elizabeth Weissler
SoConDi

Tom Purnell
Bill Idsardi
John Baugh

Patrice Speeter Beddor
Robin Queen
The University of Michigan

Savithry Namboodiripad
Will Styler
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Slides available at
<https://bit.ly/2tgewZE>

Pilot 1

In Phoenix

(randomly chosen US capital city)

- ❖ One property manager hears each voice
- ❖ 60 first calls > 27 second calls > 11 third calls
- ❖ Of those 11, two caught on
 - Difficult to different enough when asking the same basic questions and maintain natural production

Intermediate Stages

- ❖ Randomizing guises each trial is mentally taxing to the n^{th}
- ❖ Good idea of standard inquiry call format
 - Developed Script
- ❖ Name norming
 - Make sure names given aren't too racially or regionally associative
 - Good Articulatory Spread
 - Rachel Stephens, Olivia Peterson, Kayla Greene

Pilot 2

Also in Phoenix

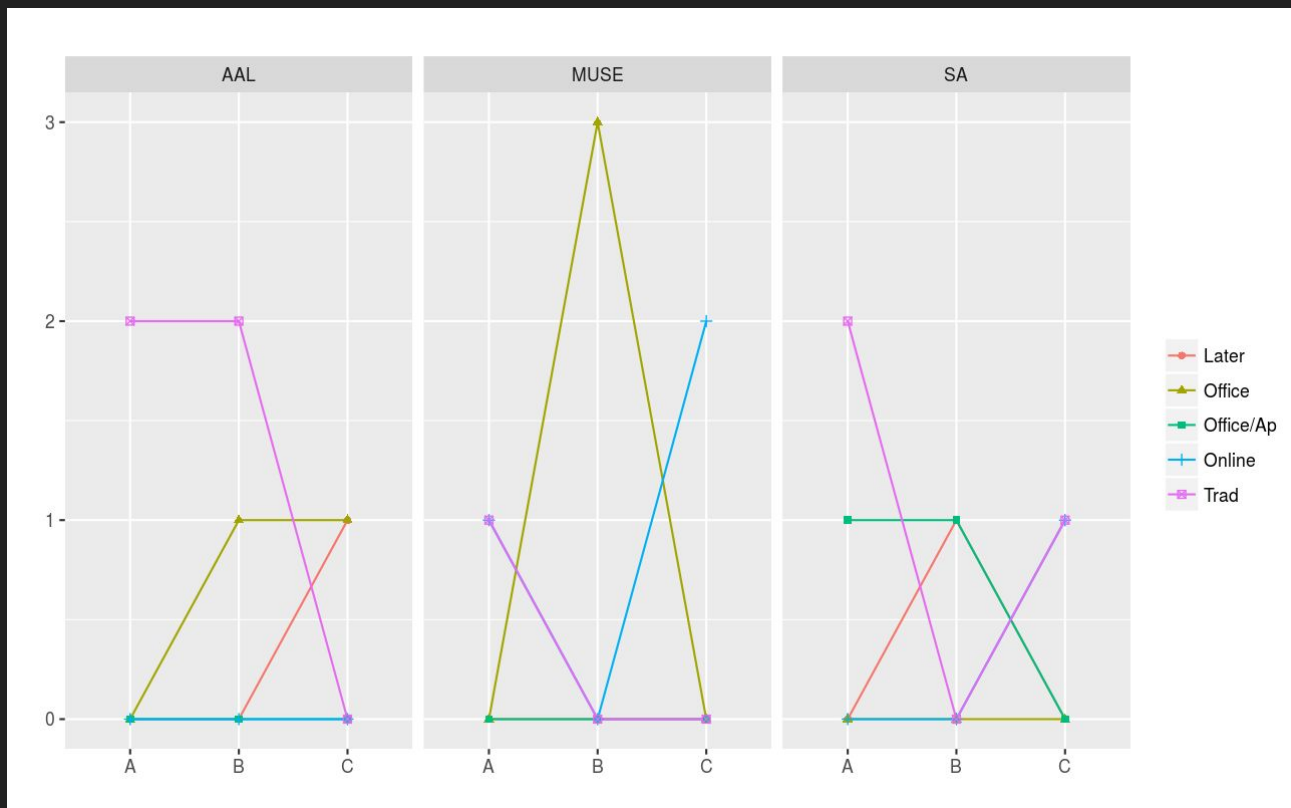
- ❖ 27 calls, 9 in each guise, 3 in each neighborhood
 - High, Mid, Low by median income

Pilot 2

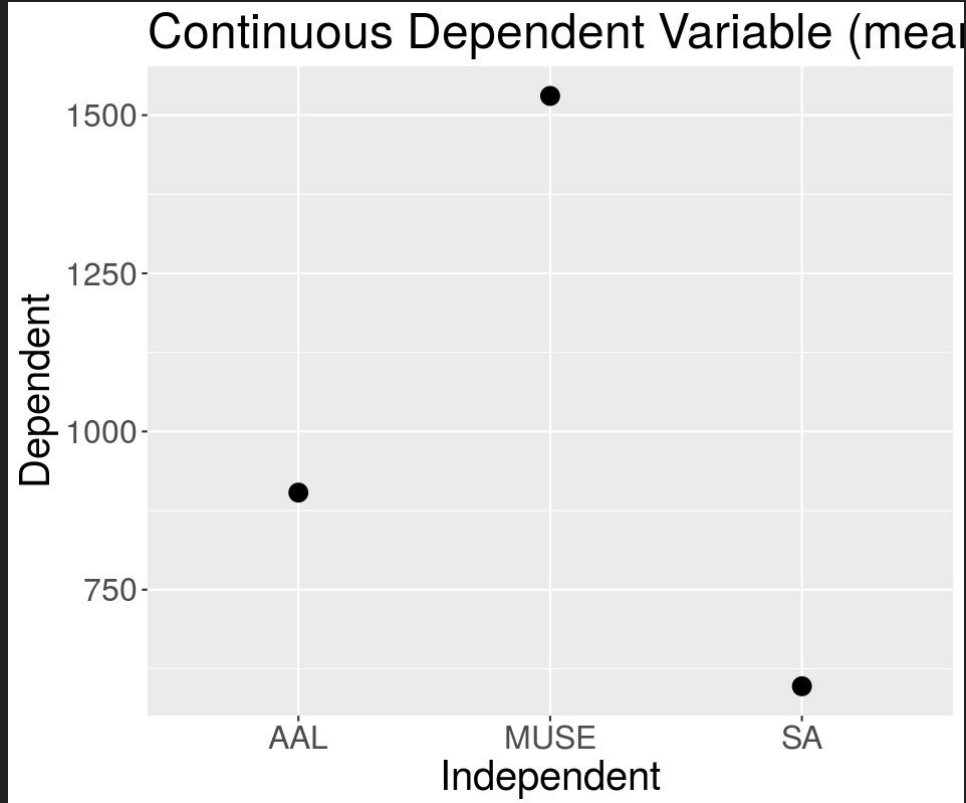
Data-Driven Design

- ❖ Guise
- ❖ Neighborhood
- ❖ Property Type
- ❖ Listing Price
- ❖ Appointment Type
- ❖ Time on the Phone
- ❖ Proportion of Questions Answered

Neighborhood X Guise X Appointment Type



Time X Guise



Mean Answered Questions

- ❖ Significant difference between the High and Low income, and the Mid and Low income neighborhood wrt **number of questions answered**

Linear Mixed Effects Model

(Intercept) 0.35056 0.05910 5.932

NeighborhoodH 0.20278 0.08358 **2.426 *significant**

NeighborhoodM 0.23741 0.08358 **2.841 *significant**