

All aLIKE:  
Item frequency and /aɪ/-raising  
in Philadelphia

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# Introduction

Do frequent words lead sound change?

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Test case: /aɪ/-raising in Philadelphia

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No apparent role of frequency in change

# Sound change in Exemplar Theory

Exemplar Theory:

“The cognitive representation of a word can be made up of the set of exemplars that have been experienced by the speaker/hearer.”

Bybee 2002: 271

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Fine-grained phonetic detail inherent to lexical representation

# Sound change in Exemplar Theory

Implication for language change:

“...any systematic bias on the allophonic outcome would incrementally impact high frequency words at a greater rate than low frequency words.”

Pierrehumbert 2002: 118

# Sound change in Exemplar Theory

Centrality of language change:

“...a surface pattern of reduction related to word frequency is not enough in itself to argue for long-term storage of word-specific allophone detail”

Pierrehumbert 2002: 108



# Questioning the role of frequency

Failures to find such a frequency effect in sound change:

- Labov 2010: /uw/-fronting, /ow/-fronting
- Dinkin 2008: Northern Cities Shift

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Similarly in stable variables:

- Abramowicz 2007: /ing/
- Walker 2012: /t,d/ deletion

# The current study

Not yet done: frequency over the course of sound change

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In Philadelphia:

/aɪ/-raising before voiceless consonants

/l aɪ k /

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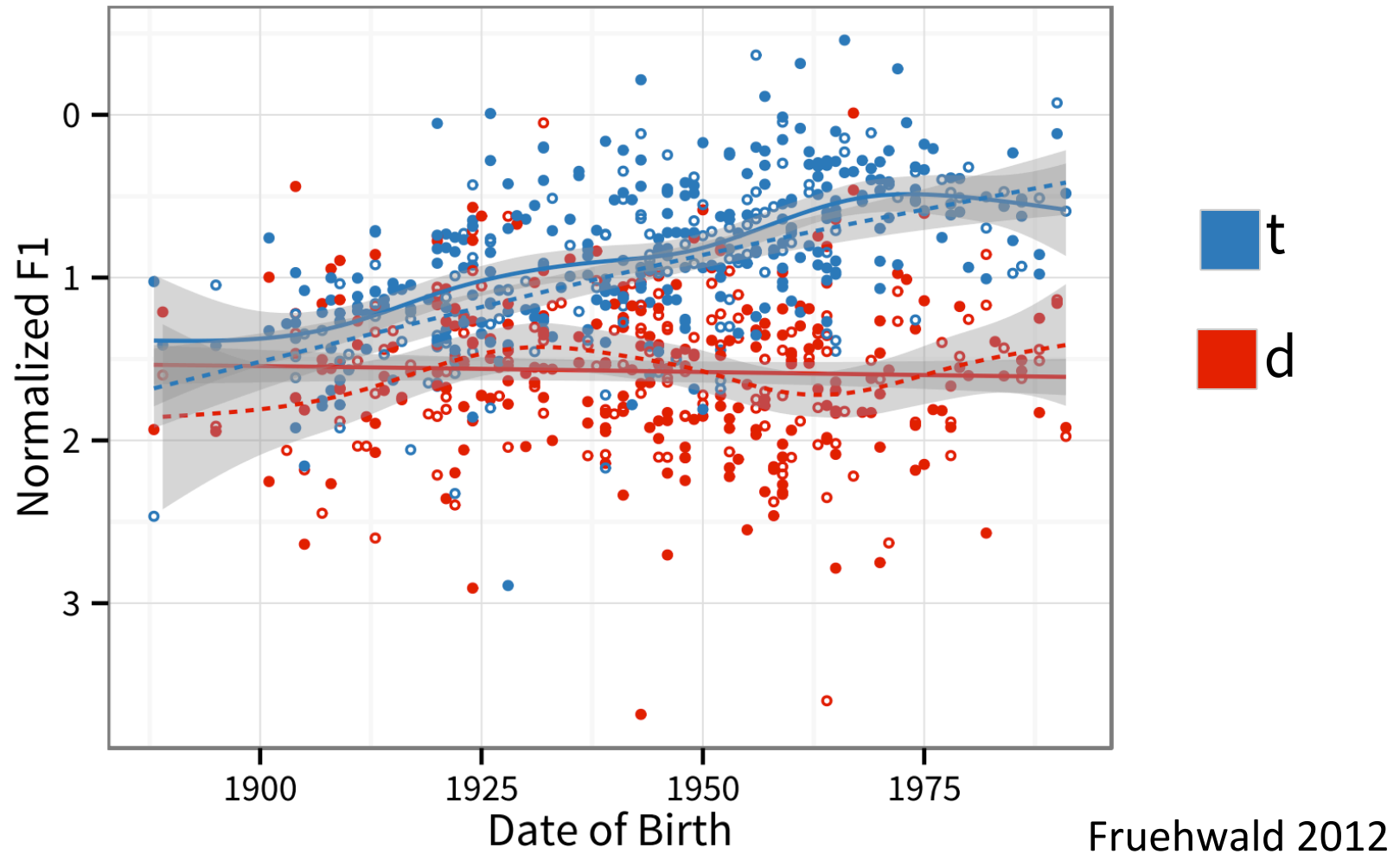
Not yet done: frequency over the course of sound change

In Philadelphia:

/aɪ/-raising before voiceless consonants

/ l aɪ k /

# The current study



# The current study

Drager 2011 showed that different kinds of LIKE can have phonetic differences.

Do such differences accrue over the course of a sound change as predicted by Exemplar Theory?

 Look at /aɪ/-raising in different kinds of LIKE



# Different kinds of LIKE

LIKE can be:

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LIKE can be:

- lexical verb

“I don’t really LIKE her that much”

Examples from D’Arcy 2005: 1-3

# Different kinds of LIKE

LIKE can be:

- lexical verb
- quotative

“He’s **LIKE**, ‘You have to calm down’”

Examples from D’Arcy 2005: 1-3

# Different kinds of LIKE

LIKE can be:

- lexical verb
- quotative
- discourse marker “Well you just cut out **LIKE** a girl figure...”

Examples from D’Arcy 2005: 1-3

# Different kinds of LIKE

LIKE can be:

- lexical verb
- quotative
- discourse marker
- adverb

“I don’t want to talk **LIKE** that”

Examples from D’Arcy 2005: 1-3

# Different kinds of LIKE

LIKE can be:

- lexical verb
- quotative
- discourse marker
- adverb
- conjunction

“It felt **LIKE** everything had dropped away”

Examples from D’Arcy 2005: 1-3

# Different kinds of LIKE

LIKE can be:

- lexical verb
- quotative
- discourse marker
- adverb
- conjunction
- preposition

“It looks LIKE a snail...”

Examples from D’Arcy 2005: 1-3

# Different kinds of LIKE

LIKE can be:	per 100k wds	dataset N
• lexical verb	103	213
• <del>quotative</del>		
• discourse marker	553	1149
• adverb	66	138
• conjunction	62	129
• preposition	132	274



# Different kinds of LIKE

Drager 2011:

- LIKE among New Zealand teenagers
- fine-grained phonetic differences in quotative, discourse, and grammatical LIKE
- /l/ length and /k/ release
- social conditioning as well as speaker-specific contextual probability effects

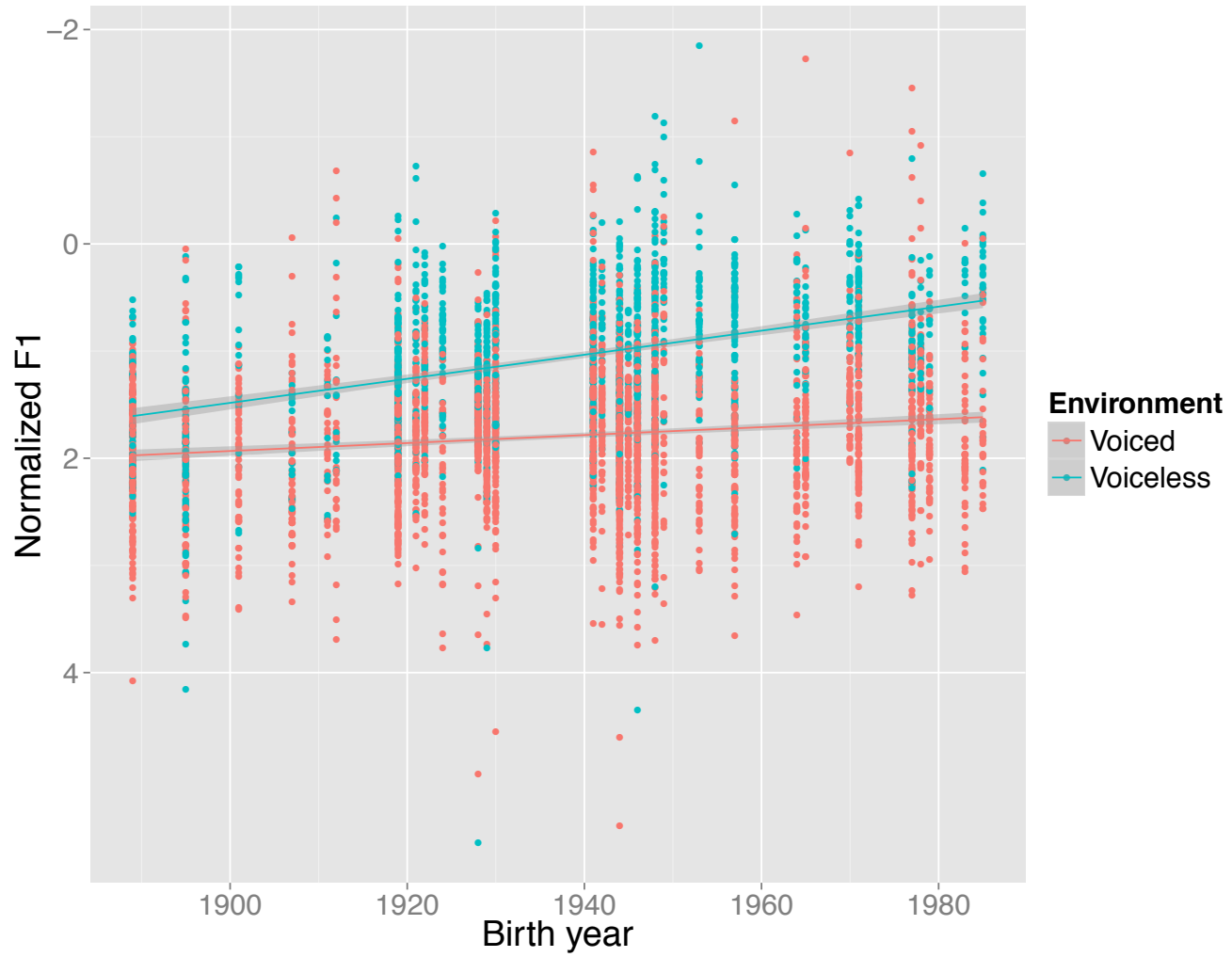
# Data

## Philadelphia Neighborhood Corpus (PNC)

(Labov & Rosenfelder 2011)

Age at interview	Interviewed 1970s		Interviewed 2000s	
	Male	Female	Male	Female
Over 60	3	3	3	3
40-59	3	3	2	2
18-39	3	3	3	3
Under 18	1	1	0	1

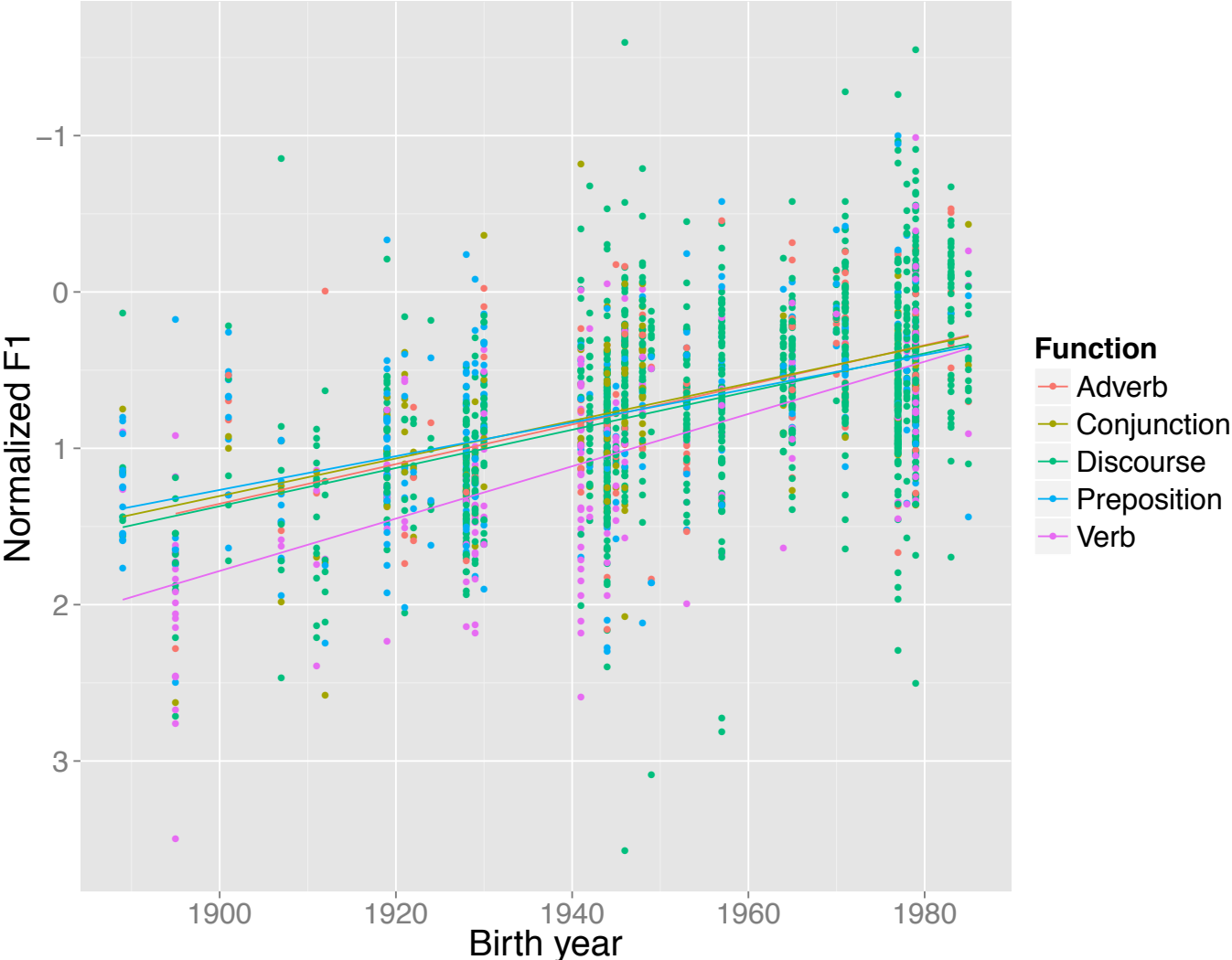
# Height of /a<sub>1</sub>/ by birth year



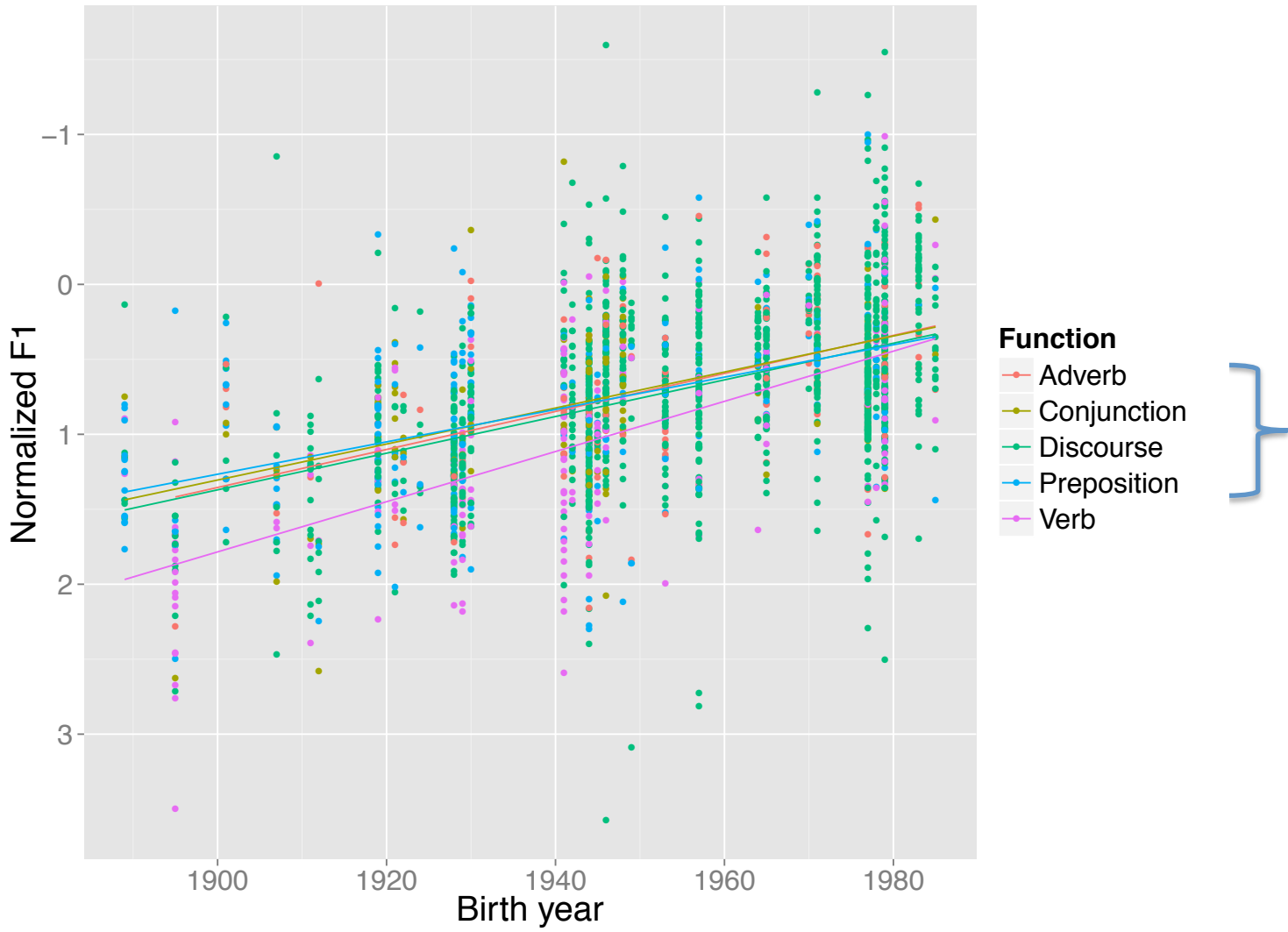
# Methods

- LIKE categories handcoded in Praat
- FAVE-align and FAVE-extract (Labov & Rosenfelder 2011)
- Lobanov-normalized F1 of /a<sub>1</sub>/ nucleus
- Log-transformed duration
- LIKE function frequency within corpus

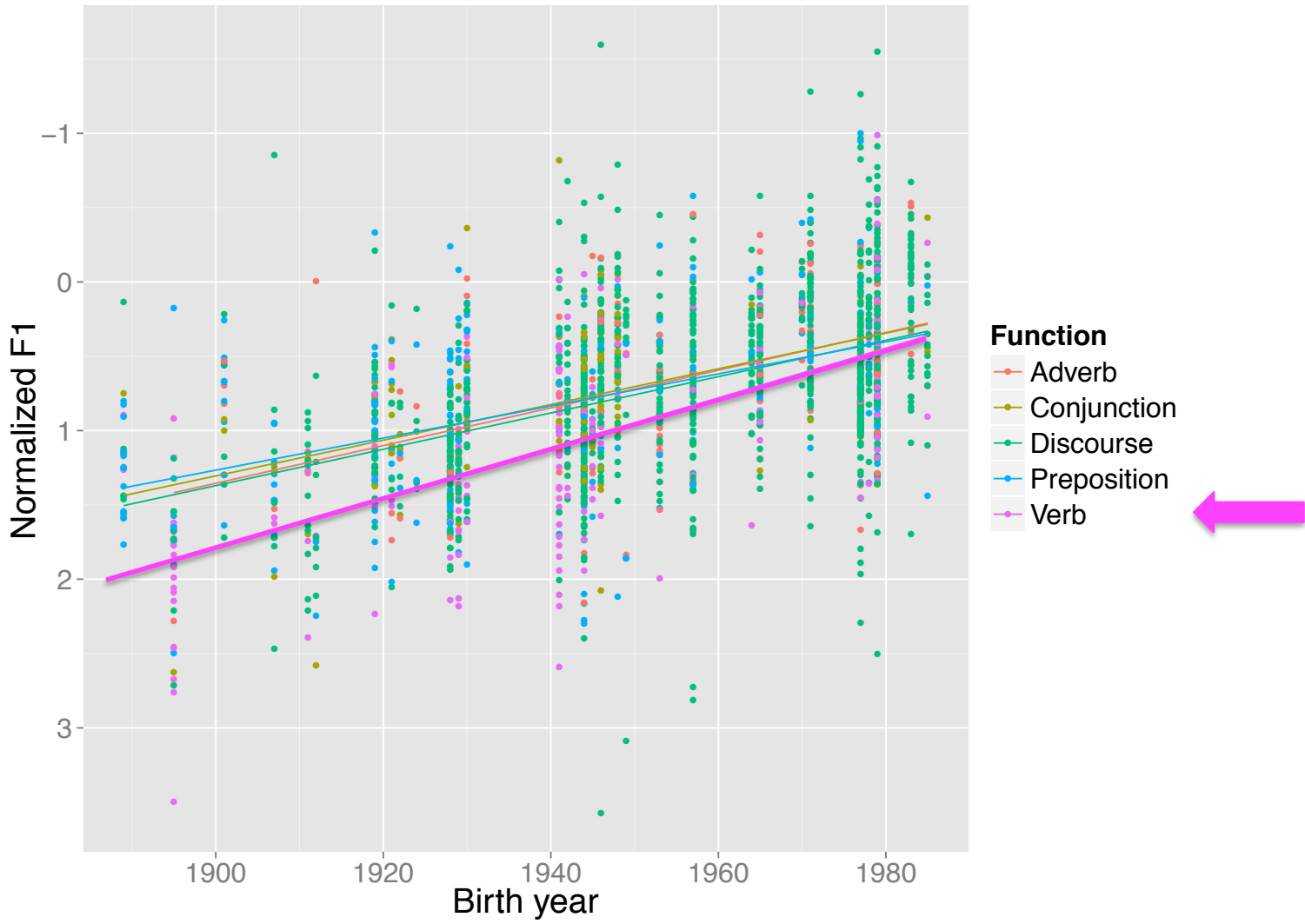
# Height of /aɪ/ in LIKE by function and birth year



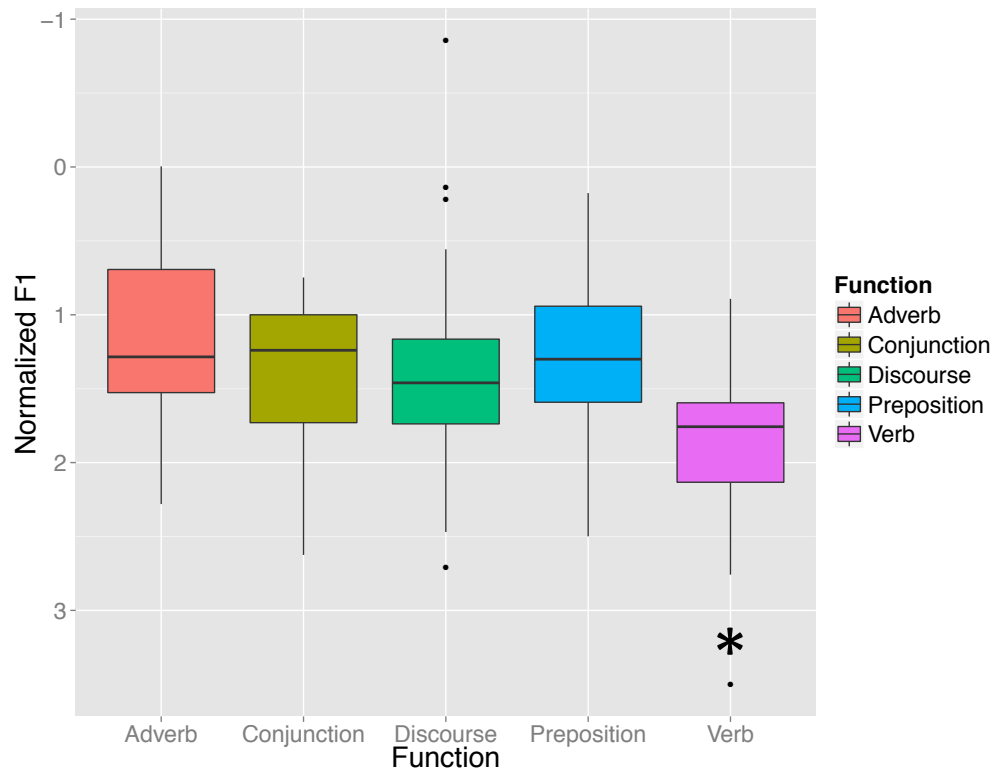
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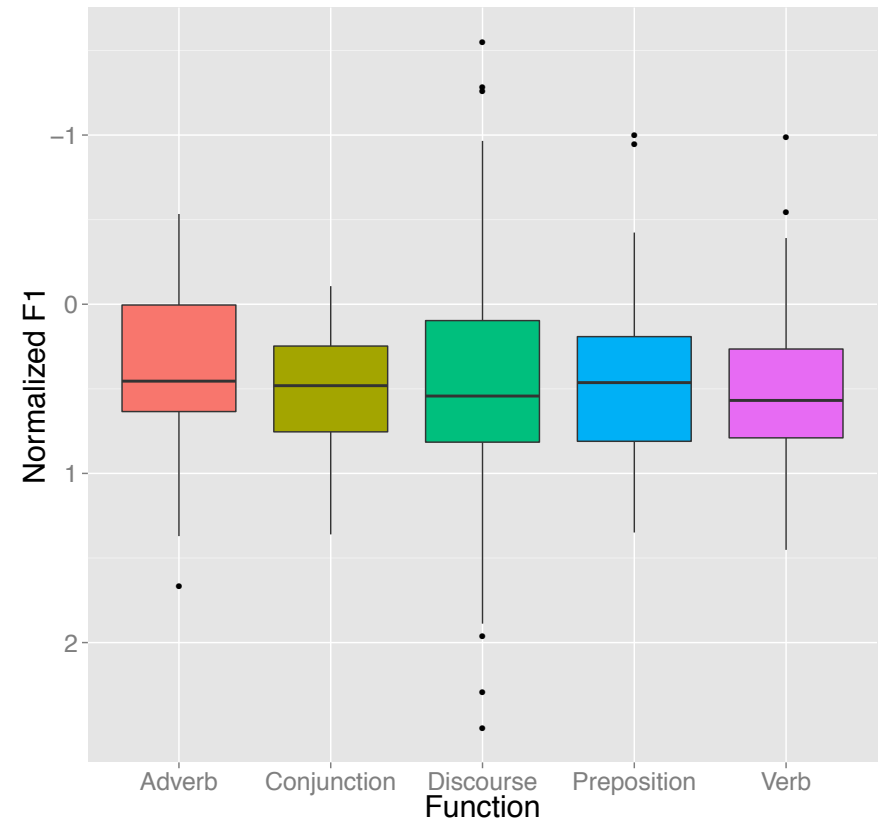
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# /aɪ/ height in LIKE by function



Oldest speakers



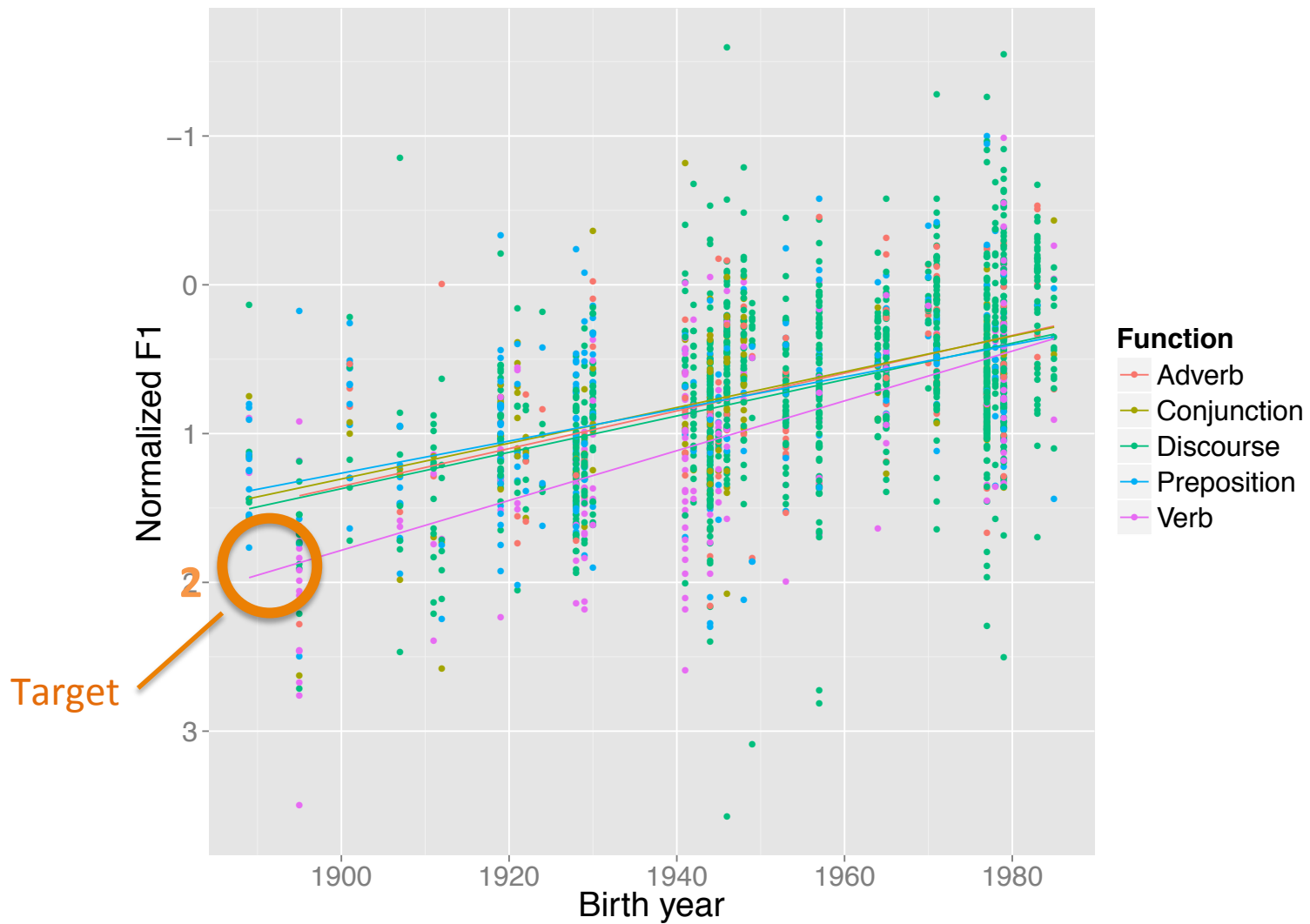
Youngest speakers



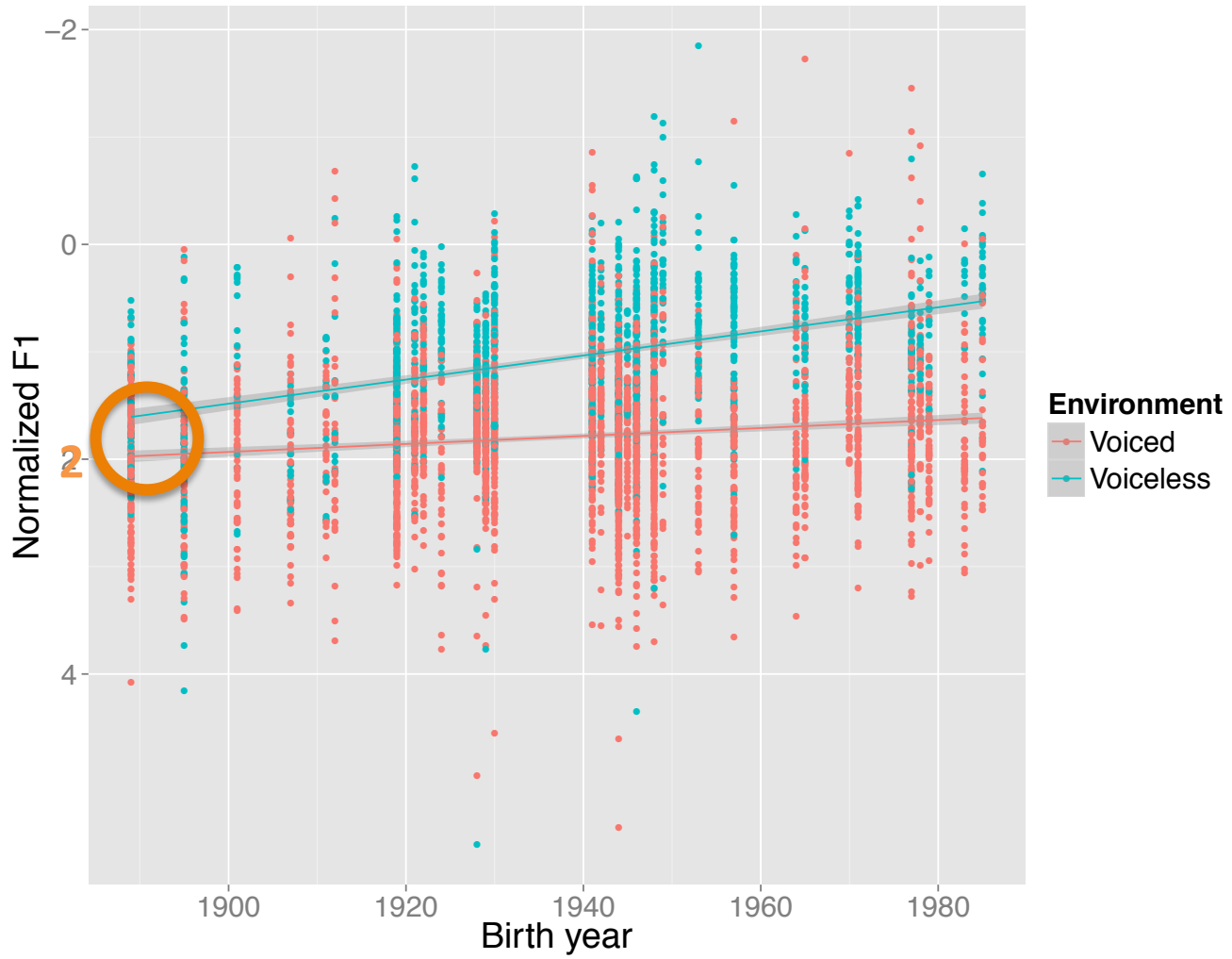
# Frequency and raising

- Most and least frequent LIKE functions pattern together throughout entire change
- Lexical verb LIKE is different
- Other kinds of LIKE are function words

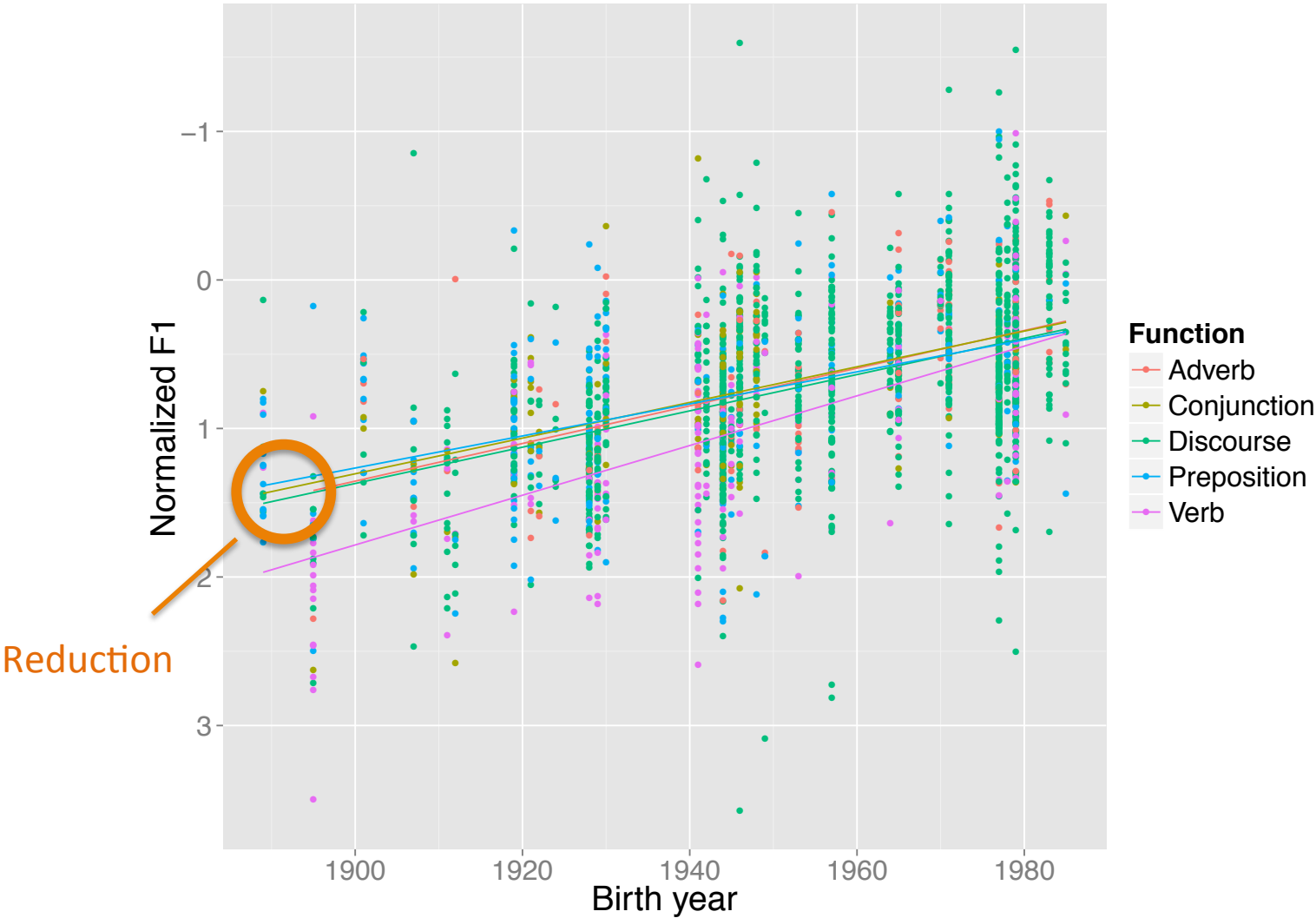
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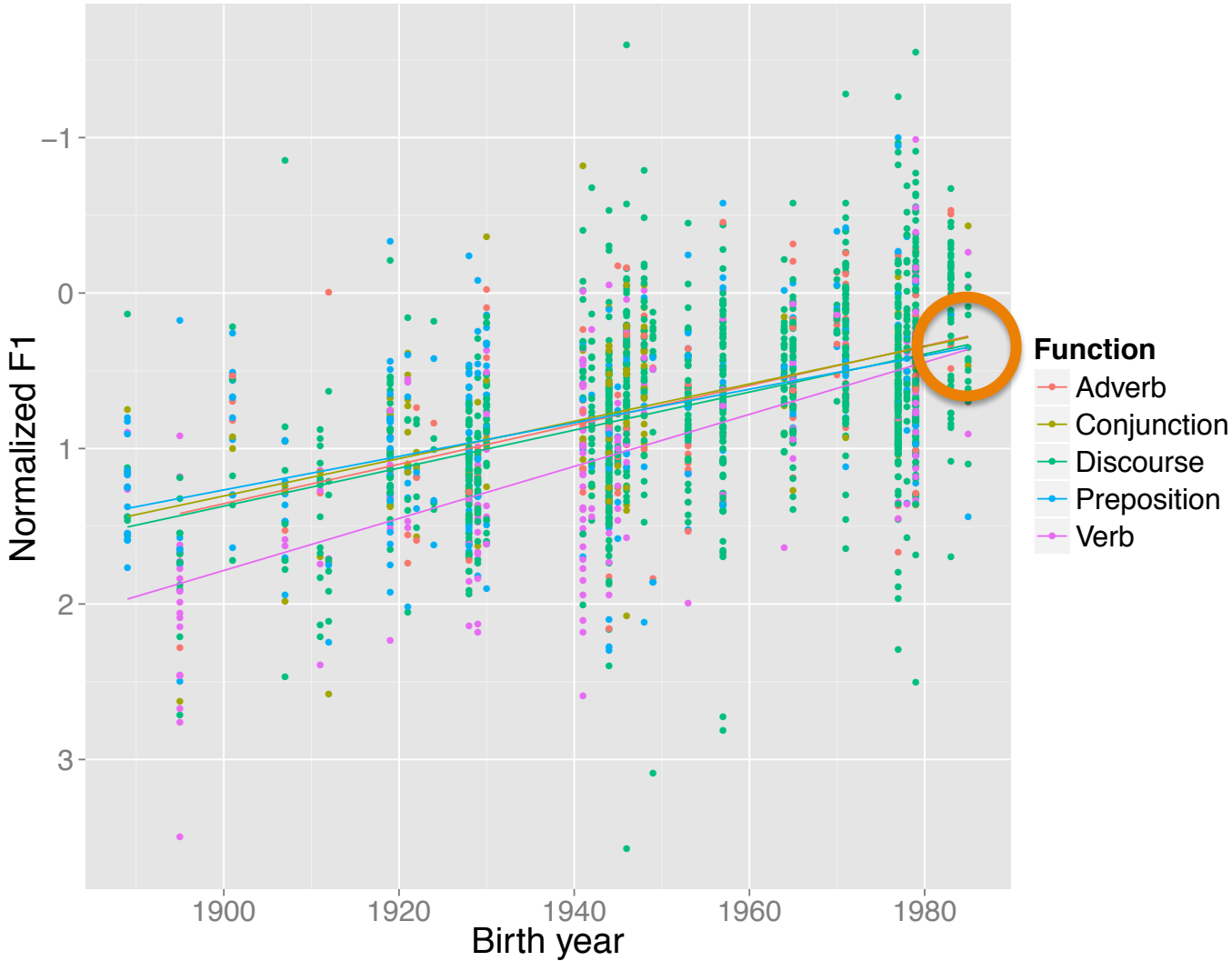
# Height of /a<sub>1</sub>/ by birth year



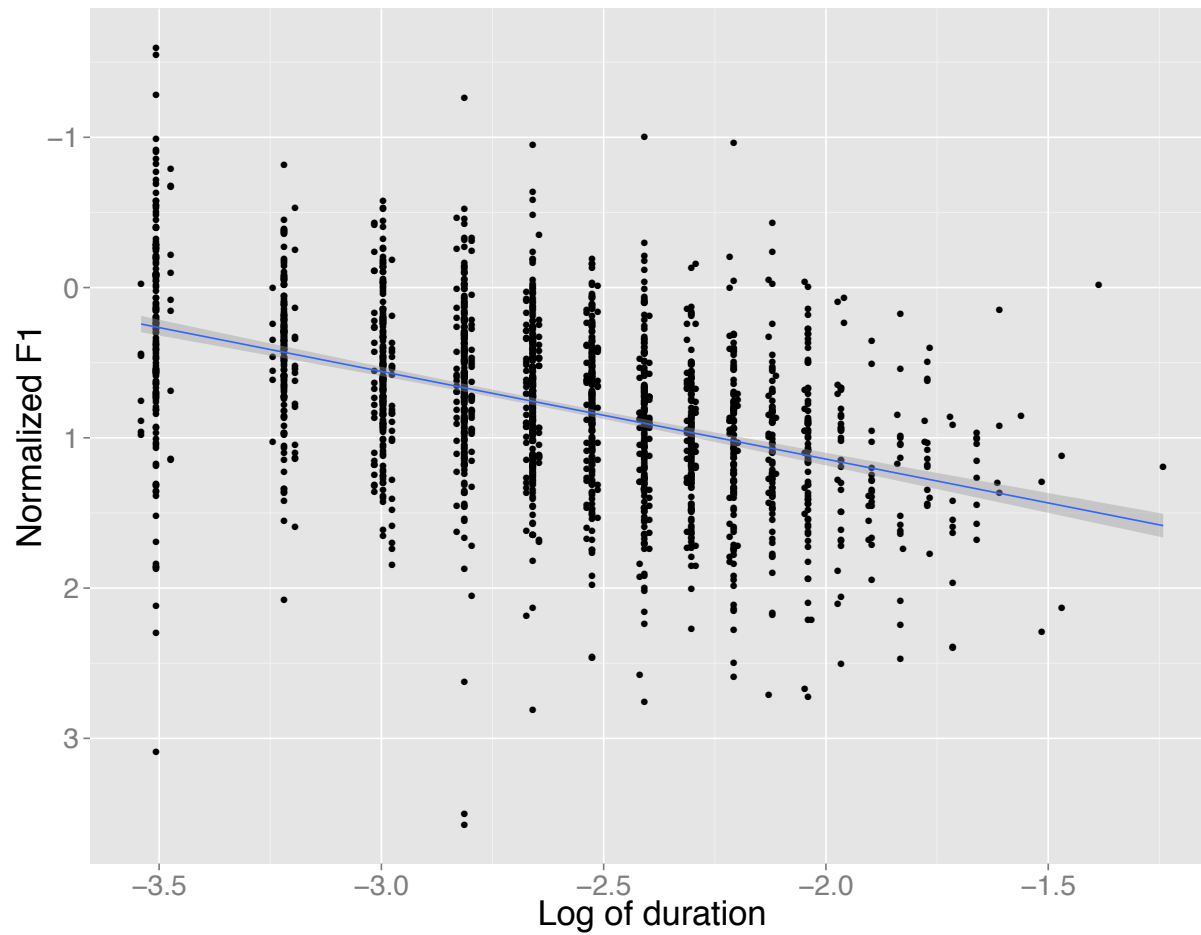
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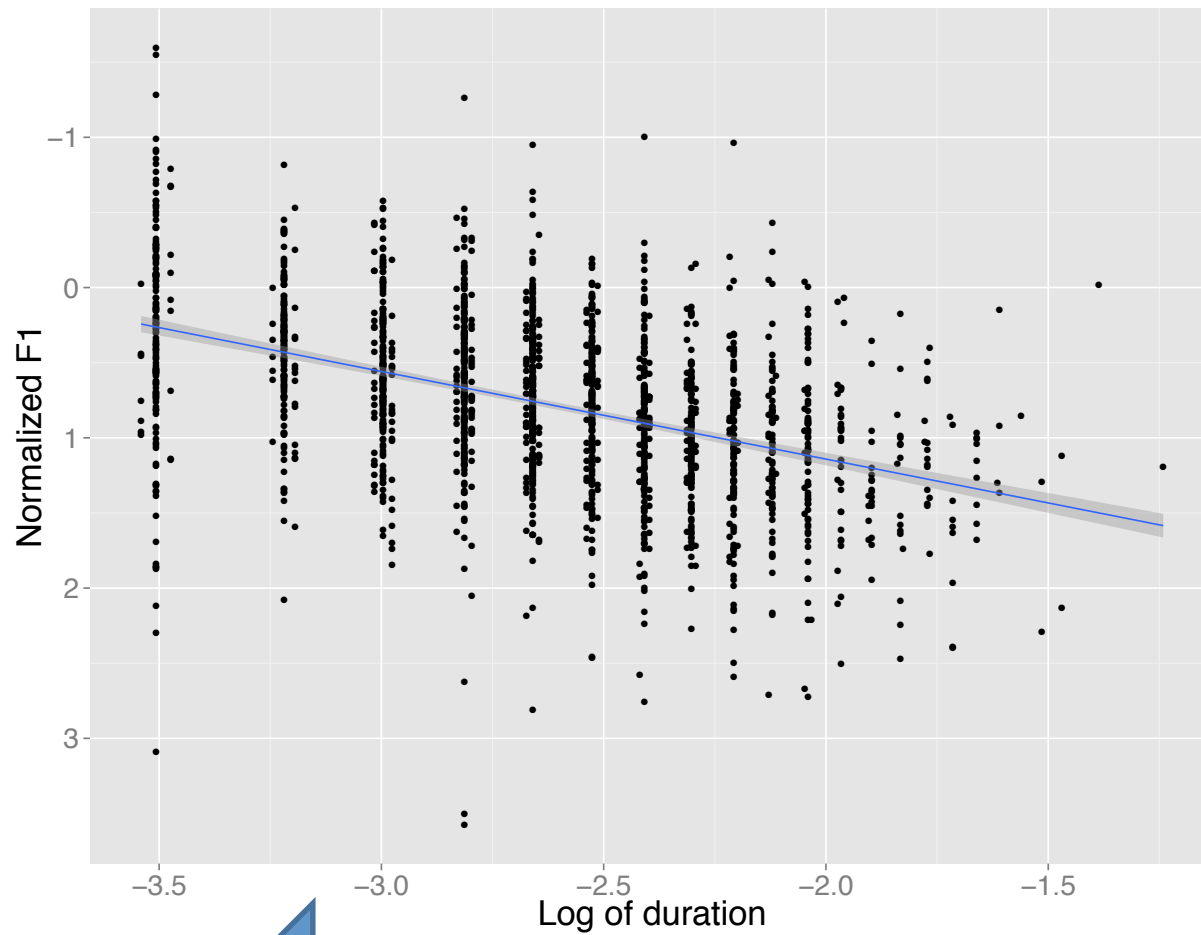
# Height of /aɪ/ in LIKE by function and birth year



# Height of /a<sub>1</sub>/ in LIKE by duration



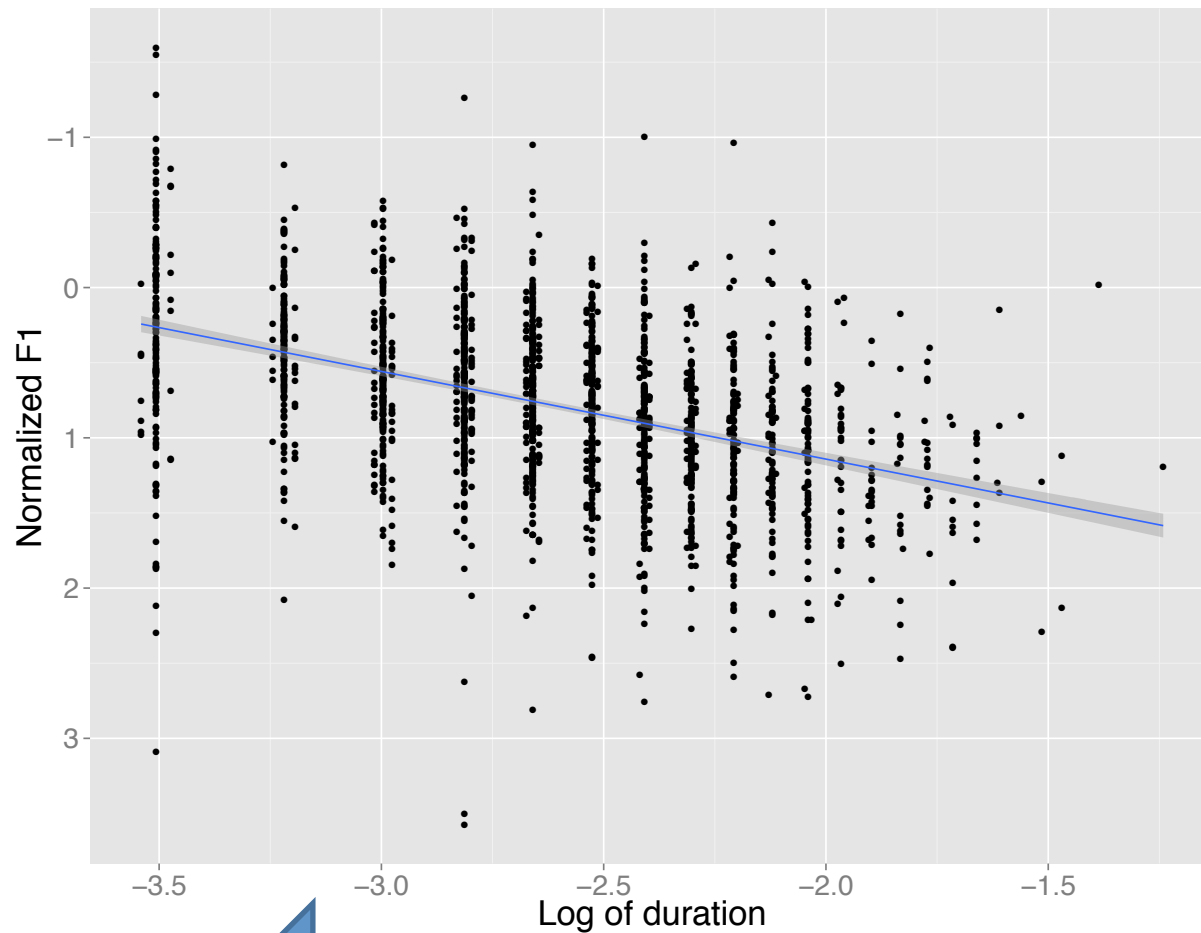
# Height of /a<sub>1</sub>/ in LIKE by duration



Short duration

# Height of /a<sub>1</sub>/ in LIKE by duration

Raising/centralization



Short duration



# Including duration

Log-likelihood comparison of linear mixed-effects models with random effect of speaker

	Estimate	Std. Error	t value
(Intercept)	22.75	2.36	9.62
Birth year	-0.01	0.00	-8.84
Log of duration	0.38	0.03	15.03
Verbal	4.13	2.82	1.466
Birth year * verbal	-0.002	0.001	-1.40

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- Reconciliation? Hybrid models?

# Thank you!

Special thanks to:

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