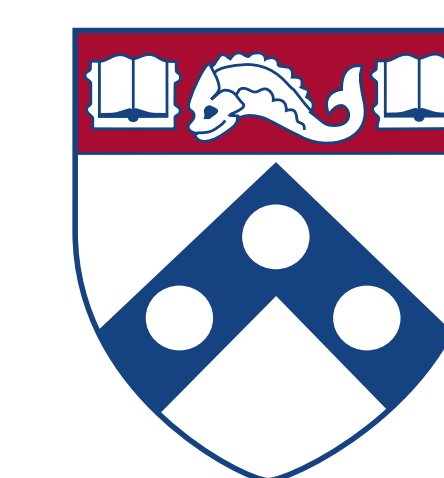


# Phonologically Conditioned Phonetic Change

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## Conditioned Sound Changes

In conditioned sound changes, what matters most: the phonological or phonetic properties of the context?

Do the contexts which phonetically favor the change undergo it first? Fastest?

## Case Studies

Data was drawn from the Philadelphia Neighborhood Corpus. I focused on two conditioned sound changes.

### /ay/ Raising

	/t/	/d/	total
surface	2157	757	2914
flap	320	354	674
total	2477	1111	3588

bite **bait** **baid** *bide*  
biting **bairɪŋ** **bairɪŋ** *biting*

### /ey/ Raising

eyC#	ey#	eyl#	eyV#	total
22594	19851	482	709	43636

deiz **dei** **dail** *dēyas*  
*days* *day* *dale* *dais*

## Analysis

ay → ay / \_ -voice]<sub>w</sub>

ey → +peripheral/ \_ C]<sub>w</sub>

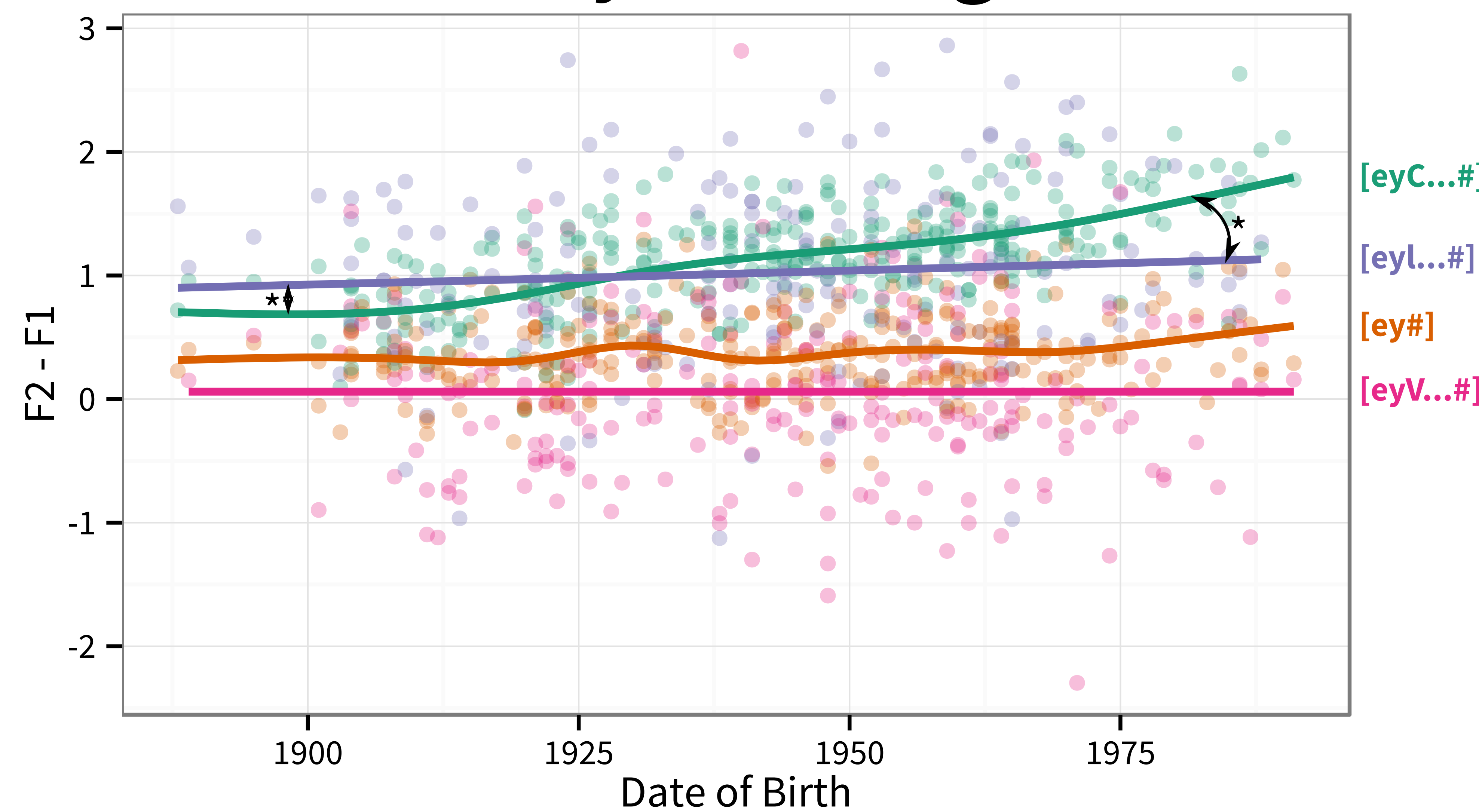
These phonological processes were operating at the onset of the phonetic change, and defined which variants would undergo, or not undergo the change.

## Conclusions

The abstract phonological properties of the conditioning environments played an early role in selecting which variants underwent the change, and which didn't. These phonological processes entered the grammar concurrently with the phonetic changes.

References: See handout

## /ey/ Raising

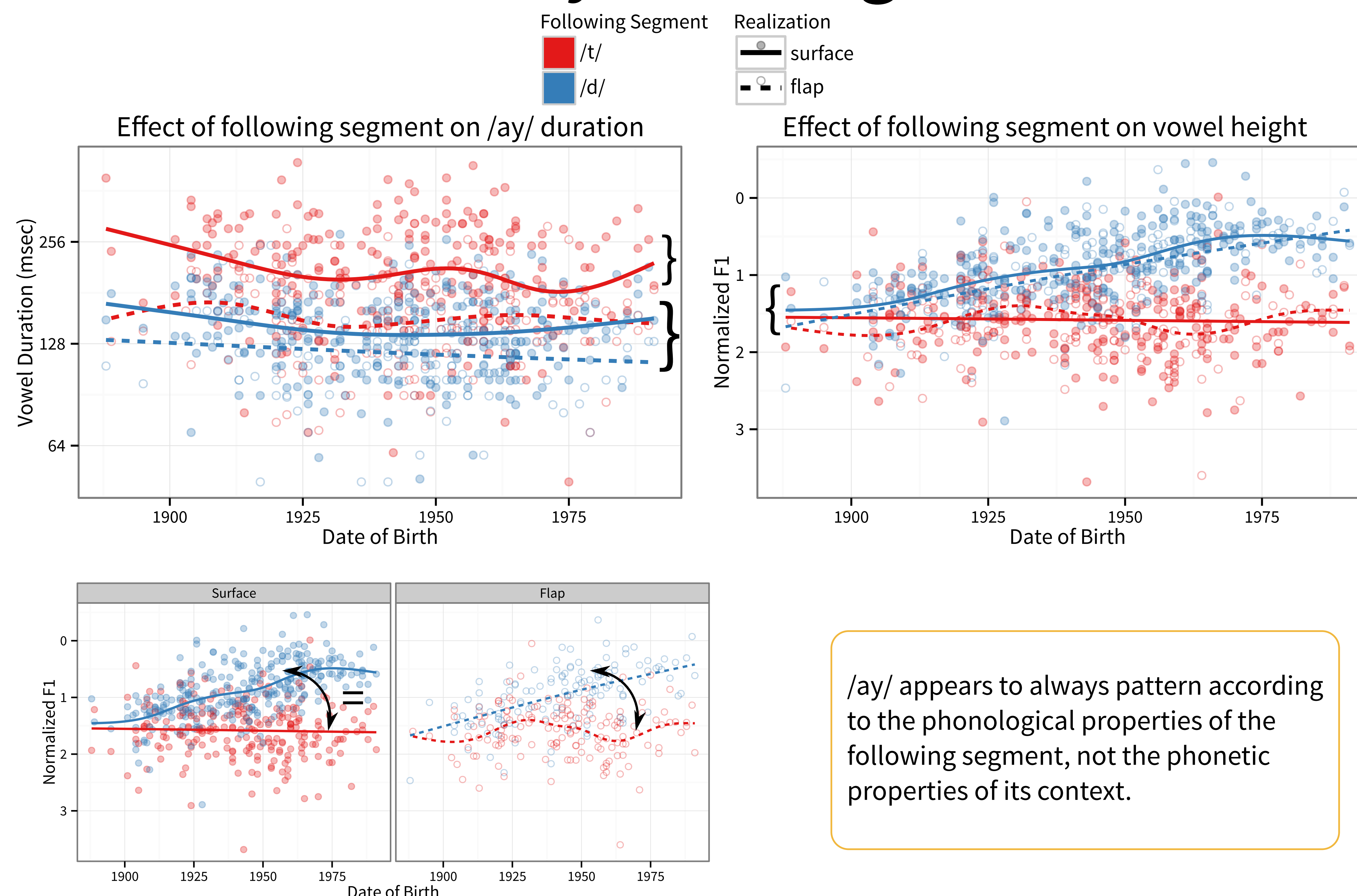


Intercept terms		Slope terms	
Intercept	0.52	Decade	0.11
DOB=1888		eyC	
eyC		eyl	+0.39
eyl	-0.39	Decade:eyl	-0.08
eyV	-0.39	Decade:eyV	-0.11
eyF	-0.49	Decade:eyF	-0.07

Diag ~ VClass \* Decade + (VClass | Speaker) + (1|Word)

Even though /l/ seems to phonetically bias /ey/ in the direction of the change, it does not undergo the change in this context.

## /ay/ Raising



/ay/ appears to always pattern according to the phonological properties of the following segment, not the phonetic properties of its context.

## Phonologically Conditioned Phonetic Changes

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```
ay_model <- lmer(F1.n ~ TD * Context * Decade + (TD * Context | Speaker) +  
(1 | Word), data = ayTD_comp)  
round(summary(ay_model)@coefs, digits = 2)  
  
##              Estimate Std. Error t value  
## (Intercept)         1.50      0.09  17.68  
## TDT                 -0.01      0.11  -0.14  
## ContextFlap         0.22      0.12   1.79  
## Decade              0.02      0.01   1.79  
## TDT:ContextFlap    -0.04      0.17  -0.24  
## TDT:Decade         -0.13      0.01  -8.56  
## ContextFlap:Decade -0.03      0.02  -1.92  
## TDT:ContextFlap:Decade 0.01      0.02   0.59
```

```
ey_model <- lmer(Diag ~ VClass * Decade + (VClass | Speaker) + (1 |  
Word), data = ey)  
round(summary(ey_model)@coefs, digits = 2)  
  
##              Estimate Std. Error t value  
## (Intercept)         0.52      0.05  11.12  
## VClasseyF          -0.49      0.07  -7.38  
## VClasseyL           0.40      0.13   3.03  
## VClasseyV          -0.39      0.14  -2.90  
## Decade             0.11      0.01  15.39  
## VClasseyF:Decade  -0.08      0.01 -11.20  
## VClasseyL:Decade  -0.08      0.02  -4.14  
## VClasseyV:Decade  -0.11      0.02  -6.26
```

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