

CLASS, GENDER, AND SUBSTRATE ERASURE IN SOCIOLINGUISTIC CHANGE: A
SOCIOPHONETIC STUDY OF SCHWA IN DERACIALIZING SOUTH AFRICAN ENGLISH:

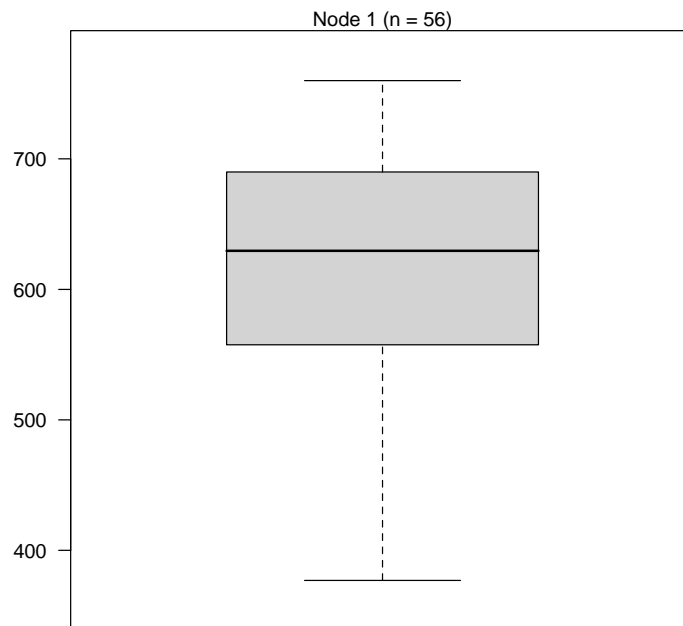
ONLINE SUPPLEMENTARY MATERIALS 2: INITIAL SCHWA

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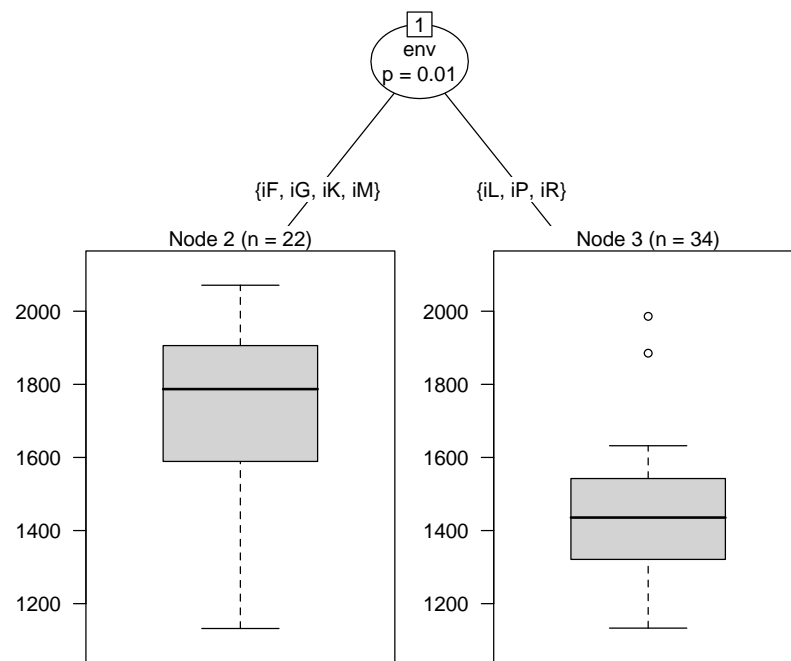
i ENVIRONMENT = initial schwa

CONTROL GROUP (WHITES): AMPLIFICATION OF DETAILS IN §4.4 OF THE MAIN TEXT. Initial environment, for ‘a’. The initial environment has **fifty-six ‘a’**, three ‘o’. C-forests diagrams for F1 and F2 were not generated; conditional inference trees and results of linear mixed-effects regression model given below.

F1 control_i for ‘a’ vowel by gender, env



F2 control_i for 'a' vowel by gender, env



```
> controli$env <- relevel(controli$env, ref="iG")
> lmer=lmer(f1 ~ gender + env + (1|speaker) + (1|word), data= contri
> summary(lmer)
Linear mixed model fit by REML ['merModLmerTest']
Formula: f1 ~ gender + env + (1 | speaker) + (1 | word)
Data: controli[controli$vowel == "a", ]
```

REML criterion at convergence: 585.7

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.6500	-0.4559	0.1446	0.4632	1.5705

Random effects:

Groups	Name	Variance	Std.Dev.
word	(Intercept)	6476.5	80.48
speaker	(Intercept)	496.6	22.29
Residual		5817.2	76.27

Number of obs: 56, groups: word, 24; speaker, 11

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(> t)
(Intercept)	610.527	56.408	18.947	10.823	1.49e-09 ***
genderM	-21.059	29.012	7.494	-0.726	0.490
enviF	106.835	125.285	19.625	0.853	0.404
enviK	-21.142	80.080	13.628	-0.264	0.796
enviL	7.126	86.172	11.791	0.083	0.935
enviM	18.023	78.367	12.775	0.230	0.822
enviP	2.191	64.303	15.335	0.034	0.973
enviR	24.007	89.282	13.012	0.269	0.792

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
> controli$env <- relevel(controli$env, ref="iG")
> lmer=lmer(f2 ~ gender + env + (1|speaker) + (1|word), data= control
> summary(lmer)
Linear mixed model fit by REML ['merModLmerTest']
Formula: f2 ~ gender + env + (1 | speaker) + (1 | word)
Data: controli[controli$vowel == "a", ]
```

REML criterion at convergence: 660.4

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.4152	-0.5566	0.0506	0.5550	1.7214

Random effects:

Groups	Name	Variance	Std.Dev.
word	(Intercept)	30867.8	175.69
speaker	(Intercept)	202.1	14.22
Residual		28868.4	169.91

Number of obs: 56, groups: word, 24; speaker, 11

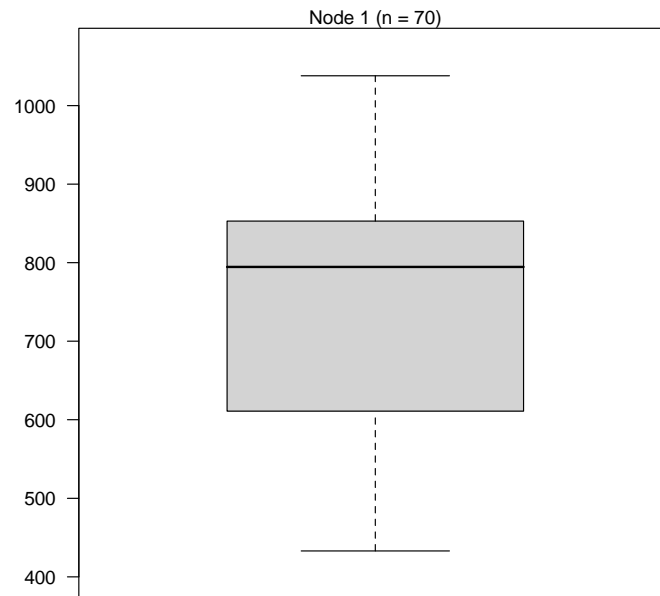
Fixed effects:

	Estimate	Std. Error	df	t value	Pr(> t)
(Intercept)	1799.557	121.516	20.190	14.809	2.61e-12 ***
genderM	50.667	55.677	4.506	0.910	0.4089
enviF	35.582	273.188	22.831	0.130	0.8975
enviK	-352.926	174.796	16.702	-2.019	0.0598 .
enviL	-468.649	187.942	14.451	-2.494	0.0253 *
enviM	-67.557	169.980	14.618	-0.397	0.6968
enviP	-273.191	140.584	18.801	-1.943	0.0671 .
enviR	-312.064	195.149	16.158	-1.599	0.1292

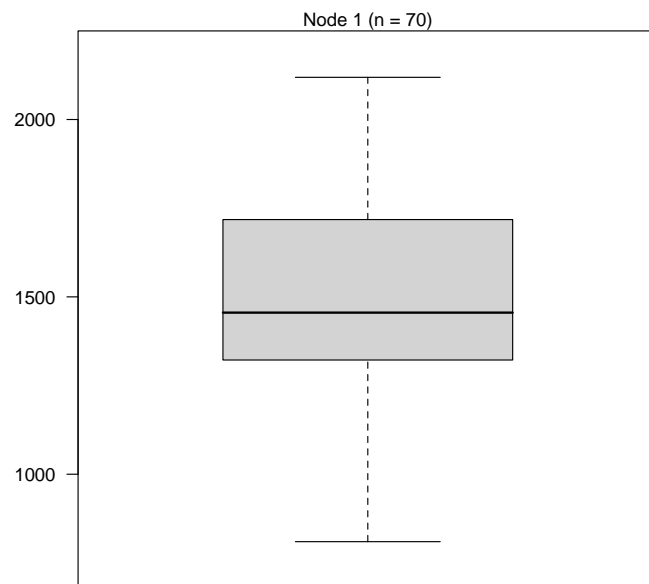
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OLDER CONTROL GROUP (BLACK SPEAKERS; §4.5). Initial environment, for ‘a’. The initial environment has **seventy ‘a’**, one ‘o’. No c-forests were generated; conditional inference trees and results of linear mixed-effects regression model given below.

F1 older_i for 'a' vowel by gender, env



F2 older_i for 'a' vowel by gender, env



```
> olderi$env <- relevel(olderi$env, ref="iG")
> lmer=lmer(f1 ~ gender + env + (1|speaker) + (1|word), data= old
> summary(lmer)
Linear mixed model fit by REML ['merModLmerTest']
Formula: f1 ~ gender + env + (1 | speaker) + (1 | word)
Data: olderi[olderi$vowel == "a", ]
```

REML criterion at convergence: 791.5

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.1857	-0.5779	0.1332	0.5122	2.0010

Random effects:

Groups	Name	Variance	Std.Dev.
word	(Intercept)	0	0.0
speaker	(Intercept)	0	0.0
Residual		19017	137.9

Number of obs: 70, groups: word, 27; speaker, 11

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(> t)	
(Intercept)	817.42	39.81	61.00	20.533	< 2e-16	***
genderM	99.89	47.38	61.00	2.108	0.03911	*
enviF	-99.31	115.49	61.00	-0.860	0.39323	
enviK	-169.52	61.04	61.00	-2.777	0.00727	**
enviL	-107.65	68.66	61.00	-1.568	0.12205	
enviM	-201.36	83.07	61.00	-2.424	0.01833	*
enviN	23.92	89.02	61.00	0.269	0.78908	
enviP	-136.47	59.14	61.00	-2.307	0.02444	*
enviR	-169.11	75.70	61.00	-2.234	0.02917	*

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
> olderi$env <- relevel(olderi$env, ref="iG")
> lmer=lmer(f2 ~ gender + env + (1|speaker) + (1|word), data= c
> summary(lmer)
```

Linear mixed model fit by REML ['merModLmerTest']

Formula: f2 ~ gender + env + (1 | speaker) + (1 | word)

Data: olderi[olderi\$vowel == "a",]

REML criterion at convergence: 877.9

Scaled residuals:

Min	1Q	Median	3Q	Max
-1.89034	-0.51656	-0.01999	0.53706	1.69093

Random effects:

Groups	Name	Variance	Std.Dev.
word	(Intercept)	39173	197.9
speaker	(Intercept)	9920	99.6
Residual		58211	241.3

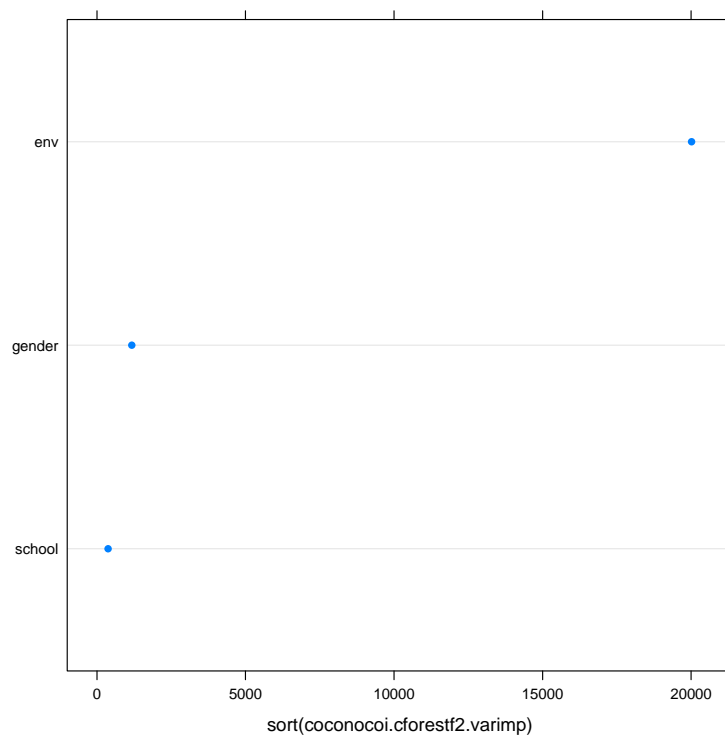
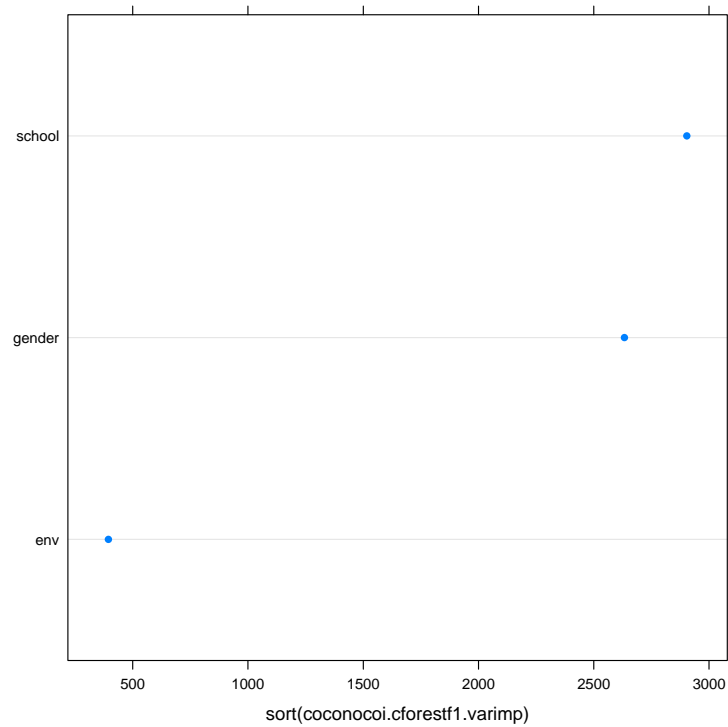
Number of obs: 70, groups: word, 27; speaker, 11

Fixed effects:

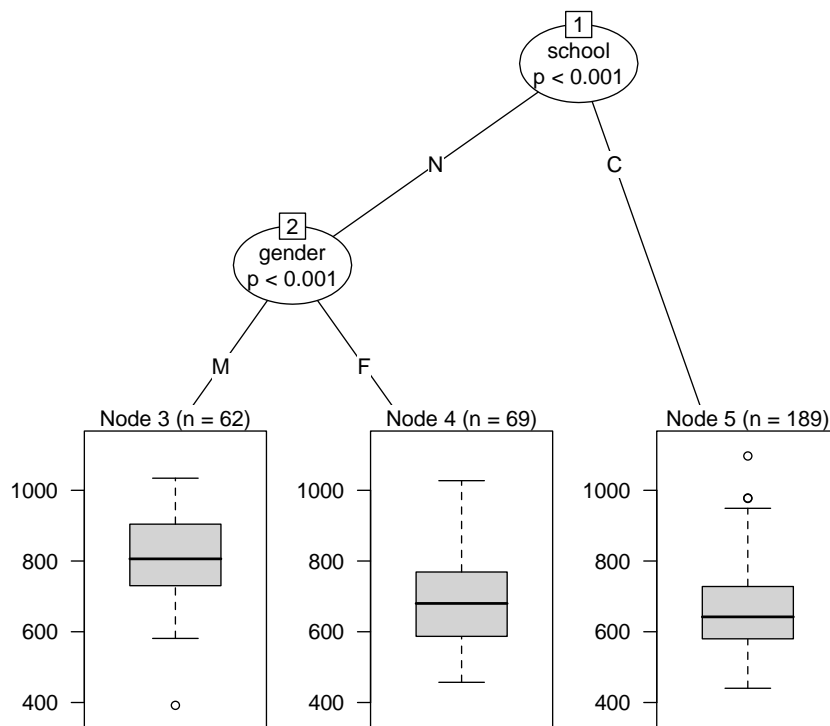
	Estimate	Std. Error	df	t value	Pr(> t)
(Intercept)	1607.491	136.035	9.289	11.817	6.62e-07 ***
genderM	-12.675	119.885	7.730	-0.106	0.918
enviF	-277.565	315.518	14.511	-0.880	0.393
enviK	-281.895	199.093	11.768	-1.416	0.183
enviL	55.149	211.934	13.461	0.260	0.799
enviM	-257.090	221.182	16.784	-1.162	0.261
enviN	-56.176	272.034	8.772	-0.207	0.841
enviP	-161.468	189.538	16.596	-0.852	0.406
enviR	-114.056	234.631	11.577	-0.486	0.636

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

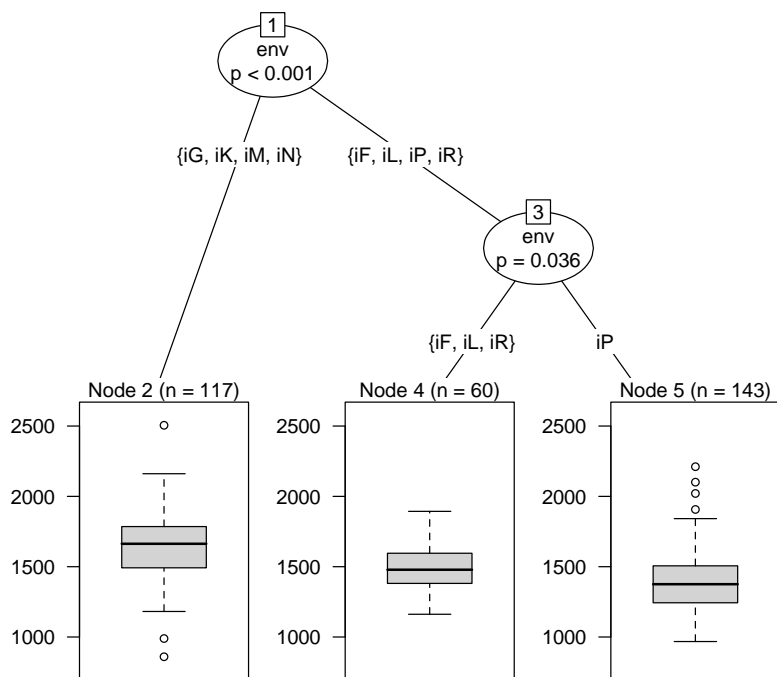
CORE GROUP OF YOUNG BLACK SPEAKERS (§4.5). Initial environment, for ‘a’. The initial environment has **320 ‘a’**, three ‘e’. C-forest diagrams given below, followed by conditional inference trees and results of linear mixed-effects regression model.



F1 coconoco_i for 'a' vowel by gender, env, school



F2 coconoco_i for 'a' vowel by gender, env, school



```
> coconocoi$env <- relevel(coconocoi$env, ref="iG")
> lmer=lmer(f1 ~ gender + env + school + (1|speaker) + (1|word), c
> summary(lmer)
Linear mixed model fit by REML ['merModLmerTest']
Formula: f1 ~ gender + env + school + (1 | speaker) + (1 | word)
Data: coconocoi[coconocoi$vowel == "a", ]
```

REML criterion at convergence: 3843.5

Scaled residuals:

Min	1Q	Median	3Q	Max
-3.0114	-0.6229	-0.0334	0.5735	2.9537

Random effects:

Groups	Name	Variance	Std.Dev.
word	(Intercept)	2438	49.37
speaker	(Intercept)	4293	65.52
Residual		9635	98.16

Number of obs: 320, groups: word, 78; speaker, 50

Fixed effects:

	Estimate	Std. Error	df	t value	Pr(> t)
(Intercept)	641.7771	26.0355	124.4400	24.650	< 2e-16 ***
genderM	51.1255	23.3048	49.5200	2.194	0.03297 *
enviF	10.5439	50.5997	95.9300	0.208	0.83538
enviK	0.6575	29.4929	58.2800	0.022	0.98229
enviL	9.7346	39.6771	62.4000	0.245	0.80699
enviM	-43.5942	44.0414	68.3200	-0.990	0.32574
enviN	13.4626	56.3205	23.8700	0.239	0.81312
enviP	38.2108	30.4895	50.2900	1.253	0.21591
enviR	-22.5180	40.6479	42.4000	-0.554	0.58251
schoolN	73.3178	23.3961	48.5200	3.134	0.00293 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

> coconocoi$env <- relevel(coconocoi$env, ref="iG")
> lmer=lmer(f2 ~ gender + env + school + (1|speaker) + (1|word),
> summary(lmer)
Linear mixed model fit by REML ['merModLmerTest']
Formula: f2 ~ gender + env + school + (1 | speaker) + (1 | word)
  Data: coconocoi[coconocoi$vowel == "a", ]

REML criterion at convergence: 4264.6

Scaled residuals:
    Min       1Q   Median       3Q      Max
-3.0574 -0.5966 -0.0294  0.5938  3.7402

Random effects:
 Groups   Name      Variance Std.Dev.
word     (Intercept) 3317     57.60
speaker  (Intercept) 3553     59.61
Residual                    44992    212.11
Number of obs: 320, groups: word, 78; speaker, 50

Fixed effects:
              Estimate Std. Error    df t value Pr(>|t|)
(Intercept)  1621.01      43.17  100.96  37.551 < 2e-16 ***
genderM      -61.69      32.18   51.43  -1.917  0.06077 .
enviF       -130.83      93.04   62.98  -1.406  0.16459
enviK        93.65      52.77   25.80   1.775  0.08772 .
enviL       -78.58      70.70   35.30  -1.111  0.27390
enviM       -27.78      80.10   47.42  -0.347  0.73026
enviN        55.82      88.98    7.05   0.627  0.55017
enviP       -195.01      52.10   14.30  -3.743  0.00211 **
enviR        -21.15      68.10    8.64  -0.311  0.76350
schoolN      -37.21      32.23   45.87  -1.155  0.25425
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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