

**Table S1.** Summary of a linear mixed model fit by REML, t-tests use Satterthwaite's method [`lmerModLmerTest`], formula (significance levels: '\*\*\*\*' < .001, '\*\*' < .01, '\*' < .05):

`lmer(F1L~Consonant+(Consonant|Speaker)+(1|Item), data=lateral),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 3.75     | 0.08       | 21.62 | 47.53   | <.0001*** |
| Consonant ɹ | -0.23    | 0.03       | 27.94 | -6.54   | <.0001*** |

`lmer(F2L~Consonant+(Consonant|Speaker)+(1|Item), data=lateral),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 11.18    | 0.15       | 21.03 | 73.80   | <.0001*** |
| Consonant ɹ | 0.03     | 0.04       | 22.30 | 0.85    | =.4070    |

`lmer(F3L~Consonant+(Consonant|Speaker)+(1|Item), data=lateral),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 15.21    | 0.13       | 21.01 | 114.21  | <.0001*** |
| Consonant ɹ | -0.07    | 0.04       | 21.22 | -1.86   | =.0775    |

`lmer(DR~Consonant+(Consonant|Speaker)+(1|Item), data=lateral),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 1.45     | 0.09       | 21.33 | 16.78   | <.0001*** |
| Consonant ɹ | 1.08     | 0.11       | 21.42 | 10.19   | <.0001*** |

`lmer(F1V~Vowel+(Vowel|Speaker)+(1|Item), data=schwa),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 6.80     | 0.17       | 21.01 | 40.85   | <.0001*** |
| Schwa (ɪ)   | -1.18    | 0.05       | 21.24 | -23.70  | <.0001*** |

`lmer(F2V~Vowel+(Vowel|Speaker)+(1|Item), data=schwa),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 10.75    | 0.15       | 21.05 | 74.13   | <.0001*** |
| Schwa (ɪ)   | 0.11     | 0.07       | 21.47 | 1.64    | =.1170    |

`lmer(F3V~Vowel+(Vowel|Speaker)+(1|Item), data=schwa),`

| Effect      | Estimate | Std. Error | df    | t value | Pr(> t )  |
|-------------|----------|------------|-------|---------|-----------|
| (Intercept) | 15.06    | 0.14       | 21.03 | 107.10  | <.0001*** |
| Schwa (ɪ)   | 0.14     | 0.06       | 21.38 | 2.42    | =.0246*   |

**List S1.** Coefficients of the linear mixed models (random intercept and random slope on the random factor “*Speaker*”).

**F1 (lateral)**

| Speaker | Intercept | Consonant_ ʌ      |
|---------|-----------|-------------------|
| F01     | 3.716160  | -0.37765483       |
| F02     | 3.965700  | -0.07890468       |
| F03     | 3.834420  | -0.14653592       |
| F04     | 4.318390  | -0.35797453       |
| F05     | 3.889895  | -0.22041113       |
| F06     | 4.167609  | -0.05307247       |
| F07     | 3.854211  | -0.26888388       |
| F08     | 4.042699  | -0.24742439       |
| F09     | 3.749880  | -0.20086974       |
| F10     | 4.424059  | -0.37177939       |
| F11     | 3.470171  | -0.15476032       |
| M01     | 3.725248  | -0.12227822       |
| M02     | 3.519568  | -0.13143218       |
| M03     | 3.587351  | -0.25534548       |
| M04     | 3.502048  | <b>0.03439152</b> |
| M05     | 2.980917  | -0.14248935       |
| M06     | 3.192344  | -0.35723713       |
| M07     | 3.830105  | -0.50393054       |
| M08     | 4.040855  | -0.32733330       |
| M09     | 3.951669  | -0.20595903       |
| M10     | 3.368764  | -0.30501635       |
| M11     | 3.283438  | -0.14831562       |

**F2 (lateral)**

| Speaker | Intercept | Consonant_ ʌ |
|---------|-----------|--------------|
| F01     | 10.588821 | -0.070051213 |
| F02     | 11.541935 | 0.080919601  |
| F03     | 11.721157 | -0.033624568 |
| F04     | 11.752454 | 0.068189916  |
| F05     | 11.558111 | -0.044386058 |
| F06     | 11.408746 | -0.185942051 |
| F07     | 11.570172 | 0.080382075  |
| F08     | 12.328877 | 0.089236786  |
| F09     | 12.313944 | -0.257190116 |
| F10     | 11.570091 | 0.056108866  |
| F11     | 12.211391 | 0.225361558  |
| M01     | 9.828647  | 0.050938200  |
| M02     | 11.170419 | -0.022684528 |
| M03     | 10.995428 | 0.035286031  |
| M04     | 10.565710 | 0.028710595  |

|     |           |              |
|-----|-----------|--------------|
| M05 | 10.620397 | 0.077332426  |
| M06 | 10.927178 | 0.103260701  |
| M07 | 10.108176 | 0.397077809  |
| M08 | 10.532074 | -0.198586389 |
| M09 | 10.176199 | 0.262237332  |
| M10 | 10.992533 | -0.085844004 |
| M11 | 11.397289 | -0.005232969 |

### **F3 (lateral)**

| Speaker | Intercept | Consonant_ [ |
|---------|-----------|--------------|
| F01     | 16.03605  | -0.30224976  |
| F02     | 15.43343  | -0.15741557  |
| F03     | 15.76401  | -0.01366724  |
| F04     | 15.41211  | 0.16595999   |
| F05     | 15.93453  | 0.03274175   |
| F06     | 15.20894  | -0.22747011  |
| F07     | 15.92498  | -0.07078021  |
| F08     | 16.24475  | -0.18337233  |
| F09     | 16.09457  | -0.10966002  |
| F10     | 15.14216  | 0.04352614   |
| F11     | 15.68618  | 0.08861304   |
| M01     | 14.83865  | -0.12566903  |
| M02     | 14.84063  | -0.24951024  |
| M03     | 14.91662  | 0.01553056   |
| M04     | 14.06961  | 0.17160920   |
| M05     | 14.83487  | 0.02550956   |
| M06     | 14.89361  | -0.47238293  |
| M07     | 14.28970  | -0.09645435  |
| M08     | 15.01598  | 0.06047781   |
| M09     | 15.11526  | 0.16828109   |
| M10     | 14.79813  | -0.33179628  |
| M11     | 14.21721  | -0.04207108  |

### **DR (lateral)**

| Speaker | Intercept | Consonant_ [ |
|---------|-----------|--------------|
| F01     | 1.0438693 | 0.7386988    |
| F02     | 1.2869883 | 0.9302635    |
| F03     | 2.4460739 | 1.7529033    |
| F04     | 1.6754202 | 1.8356219    |
| F05     | 1.1867377 | 0.9740176    |
| F06     | 1.3609788 | 0.8325226    |
| F07     | 1.3522985 | 1.2428590    |
| F08     | 1.3042331 | 1.4258402    |
| F09     | 1.2578947 | 0.4648055    |
| F10     | 0.9913929 | 0.8877242    |

|     |           |           |
|-----|-----------|-----------|
| F11 | 1.2520580 | 0.9938633 |
| M01 | 1.7838755 | 1.4105362 |
| M02 | 2.0165174 | 1.1049565 |
| M03 | 1.2112922 | 2.0625202 |
| M04 | 1.2397347 | 1.5289860 |
| M05 | 1.1329187 | 0.2960575 |
| M06 | 1.9118131 | 1.3337549 |
| M07 | 1.4280071 | 0.7698513 |
| M08 | 1.5025058 | 0.7168552 |
| M09 | 0.9720522 | 1.0176678 |
| M10 | 1.9896625 | 0.9682256 |
| M11 | 1.4911753 | 0.4989690 |

### **F1 (schwa)**

| Speaker | Intercept | Vowel_schwa() |
|---------|-----------|---------------|
| F01     | 7.945520  | -1.3547209    |
| F02     | 7.572883  | -1.0467034    |
| F03     | 7.486583  | -1.2682629    |
| F04     | 7.697245  | -1.4698578    |
| F05     | 7.454286  | -1.1301236    |
| F06     | 7.374782  | -1.6384882    |
| F07     | 7.508920  | -1.0756882    |
| F08     | 6.984373  | -1.2142343    |
| F09     | 7.773394  | -1.3860914    |
| F10     | 7.345976  | -1.3599787    |
| F11     | 7.382492  | -1.3948405    |
| M01     | 6.234717  | -1.1433028    |
| M02     | 5.788079  | -1.0258068    |
| M03     | 6.229783  | -1.2718955    |
| M04     | 5.729554  | -1.0566738    |
| M05     | 5.546658  | -0.8054819    |
| M06     | 6.067847  | -1.1333652    |
| M07     | 6.575600  | -1.1714144    |
| M08     | 6.718743  | -0.7817135    |
| M09     | 6.452629  | -1.2152056    |
| M10     | 5.954408  | -0.8017083    |
| M11     | 5.875279  | -1.1456926    |

### **F2 (schwa)**

| Speaker | Intercept | Vowel_schwa() |
|---------|-----------|---------------|
| F01     | 11.180921 | -0.1409090798 |
| F02     | 11.078625 | 0.1840327461  |
| F03     | 11.324923 | 0.1238835571  |
| F04     | 10.912696 | 0.0266758352  |
| F05     | 11.487929 | -0.0707830829 |

|     |           |               |
|-----|-----------|---------------|
| F06 | 10.938281 | -0.0885497615 |
| F07 | 11.491060 | -0.0008783694 |
| F08 | 11.696097 | -0.1574228162 |
| F09 | 11.315308 | -0.0236760500 |
| F10 | 11.207335 | 0.1682510458  |
| F11 | 11.940149 | -0.5555177893 |
| M01 | 9.755125  | -0.0051284740 |
| M02 | 10.661936 | 0.1897916819  |
| M03 | 9.979064  | 0.7646924642  |
| M04 | 10.047960 | 0.2915973885  |
| M05 | 10.100645 | 0.4007956147  |
| M06 | 10.544312 | 0.1317035662  |
| M07 | 9.425700  | 0.2521483943  |
| M08 | 10.454371 | -0.2530888756 |
| M09 | 10.087799 | 0.2549538183  |
| M10 | 10.492969 | 0.0895067481  |
| M11 | 10.366046 | 0.7651714381  |

### **F3 (schwa)**

| Speaker | Intercept | Vowel_schwa(l) |
|---------|-----------|----------------|
| F01     | 16.38071  | -0.280549857   |
| F02     | 15.69995  | -0.226657455   |
| F03     | 16.03591  | 0.061720424    |
| F04     | 14.98474  | 0.487604681    |
| F05     | 15.44992  | 0.606174662    |
| F06     | 14.99803  | 0.012671105    |
| F07     | 15.54050  | 0.441228771    |
| F08     | 16.24813  | -0.120246597   |
| F09     | 15.05945  | 0.291949989    |
| F10     | 14.87959  | 0.585533438    |
| F11     | 15.33344  | 0.137294045    |
| M01     | 14.84029  | -0.221311824   |
| M02     | 14.54852  | 0.009124081    |
| M03     | 14.70450  | 0.162203823    |
| M04     | 13.75424  | 0.151439095    |
| M05     | 14.99010  | 0.057750016    |
| M06     | 15.01182  | 0.237107028    |
| M07     | 14.20641  | -0.211999227   |
| M08     | 14.89611  | 0.148859018    |
| M09     | 14.90004  | 0.243652773    |
| M10     | 14.74763  | 0.276747691    |
| M11     | 14.03845  | 0.134954321    |