Analysis & Results: the TRAP-BATH split

School: English Literature, Language and Linguistics

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Contents

0.1. BATH vowel alone

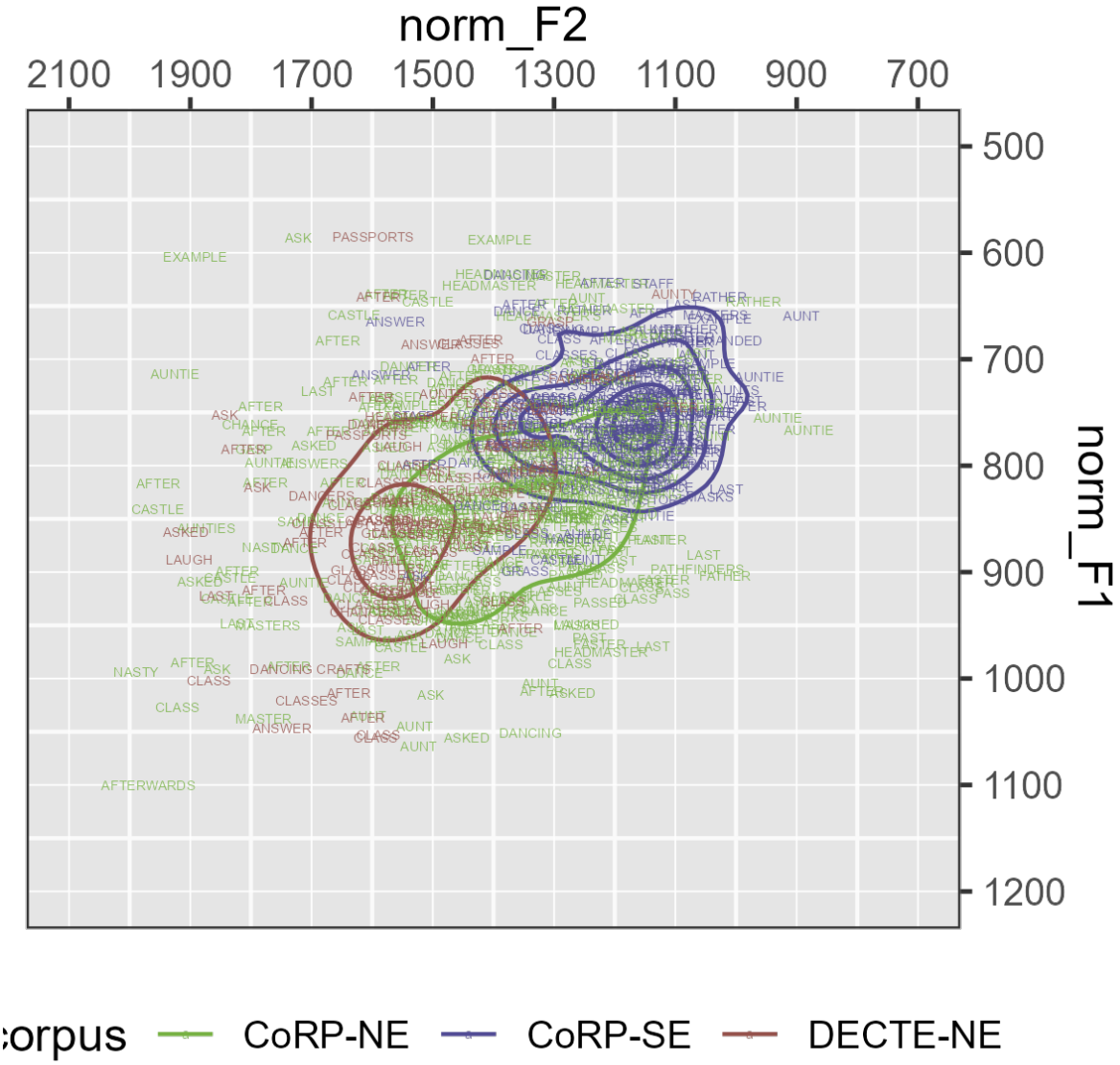

Figure 0.1.: BATH

0.1.1. F1

The best fit model of BATH in all speaker groups is shown in table 0.1. There is a three way interaction between sex, age group and corpus, shown in table 0.2. It can be seen that overall the CoRP-NE speakers have a BATH vowel at 828Hz, very similar to the height of the DECTE speakers (837Hz), whereas the CoRP-SE speakers have a higher vowel, at 762Hz. While there is variation between male and female, and old and young, none of this variation reaches overlap between the lower vowels (CoRP-NE and DECTE), and the higher vowels (CoRP-SE). Despite height not acting as the primary indicator of historical BATH movement, these values align with the predicted TRAP and PALM positions in section **??** respectively. The difference further defends that in all north-eastern speakers (DECTE and CoRP) the BATH vowel has not moved and remains in the same place as TRAP whereas in the CoRP-SE speakers it has moved to the PALM position.

fixedeffect	estimate	tvalue
(Intercept)	815.06	38.48
relevel(corpus, "CoRP-NE")DECTE-NE	61.18	2.53
relevel(corpus, "CoRP-NE")CoRP-SE	-68.19	-2.82
ageGroupYoung	40.96	1.96
sexMale	2.08	0.07
freq.zipf_z	0.78	0.12
styleSum1	-23.64	-2.19
styleSum2	1.15	0.06
has_codaSum1	-12.15	-1.69
time_z	-4.63	-1.05
relevel(corpus, "CoRP-NE")DECTE-NE:ageGroupYoung	-78.54	-2.30
relevel(corpus, "CoRP-NE")CoRP-SE:ageGroupYoung	-21.00	-0.70
relevel(corpus, "CoRP-NE")DECTE-NE:sexMale	-40.70	-1.05
relevel(corpus, "CoRP-NE")CoRP-SE:sexMale	19.85	0.52
ageGroupYoung:sexMale	-25.99	-0.78
relevel(corpus, "CoRP-NE")DECTE-NE:ageGroupYoung:sexMale	-8.42	-0.15
relevel(corpus, "CoRP-NE")CoRP-SE:ageGroupYoung:sexMale	-7.77	-0.15

Table 0.1.: Linear Mixed Effects Model of F1 of BATH

	CoRP-NE	DECTE-NE	CoRP-SE	Mean
Old Female	815.06	876.24	746.87	812.72
Old Male	817.14	837.62	768.80	807.85
Young Female	856.02	838.66	766.83	820.50
Young Male	832.11	791.62	755.00	792.91
Mean	830.08	836.04	759.38	808.50

Table 0.2.: F1 of BATH vowel for all three speaker groups

0.1.2. F2

Table 0.3 shows the best fit model for F2 of the vowel in BATH words in all three speaker groups. Modelling the BATH words alone shows that the CoRP-NE speakers have a vowel with F2 between the CoRP-SE speakers (-144Hz lower) and DECTE speakers (173Hz higher). From this model it is difficult to tell if this is truly a vowel with a mean in between or the effect of both positions existing with the set of tokens.

fixedeffect	estimate	tvalue
(Intercept)	1346.66	38.65
relevel(corpus, "CoRP-NE")DECTE-NE	173.11	3.62
relevel(corpus, "CoRP-NE")CoRP-SE	-143.53	-3.12
sexMale	40.09	0.92
ageGroupSum1	-5.17	-0.32
freq.zipf_z	26.29	1.58
has_codaSum1	-24.64	-1.27
time_z	-5.45	-0.72
relevel(corpus, "CoRP-NE")DECTE-NE:sexMale	-148.92	-2.07
relevel(corpus, "CoRP-NE")CoRP-SE:sexMale	-50.06	-0.69

Table 0.3.: Linear Mixed Effects Model of F2 of BATH

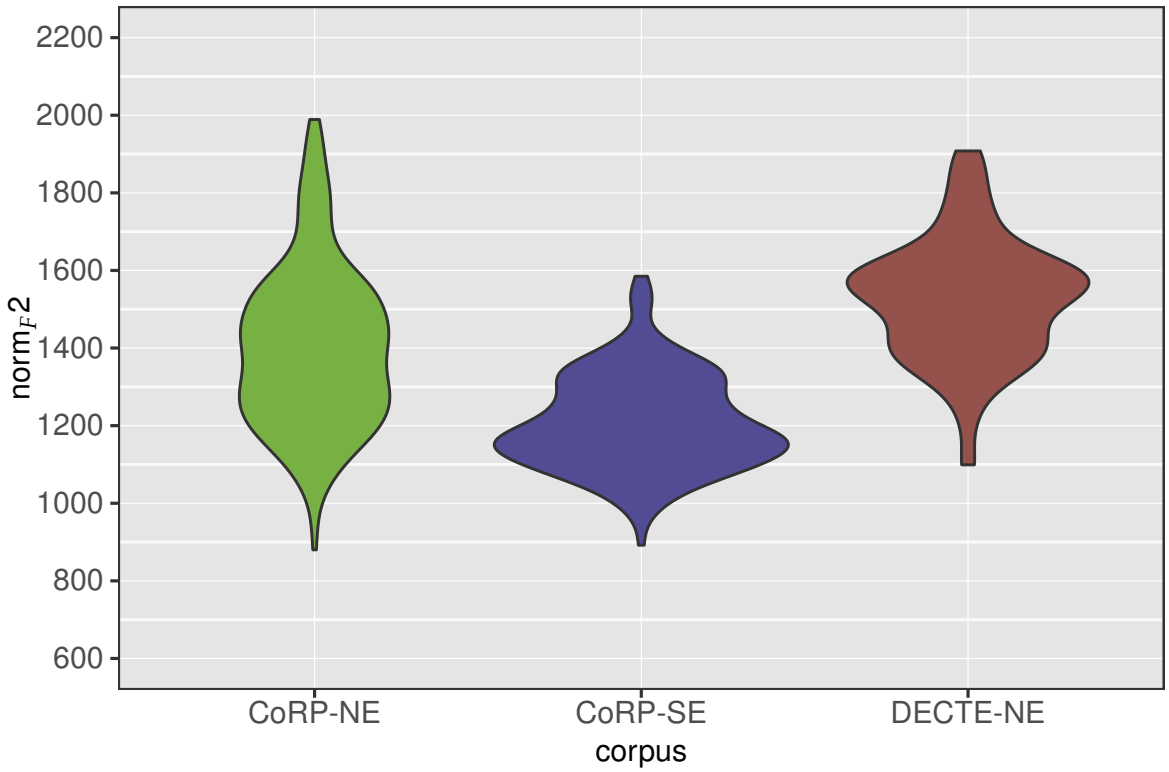

Figure 0.2.: F2 of BATH

0.1.3. Duration

fixedeffect	estimate	tvalue
(Intercept)	2.13	54.41
relevel(corpus, "CoRP-NE")DECTE-NE	-0.09	-2.63
relevel(corpus, "CoRP-NE")CoRP-SE	0.04	1.33
sexSum1	0.03	2.12
ageGroupSum1	0.01	0.44
freq.zipf_z	0.03	1.58
styleSum1	-0.12	-3.97
styleSum2	0.07	1.31
has_codaSum1	-0.00	-0.05
time_z	-0.00	-0.30
folVcSum1	-0.05	-3.08

Table 0.4.: Linear Mixed Effects Model of duration of BATH, in all three speaker groups

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