

Appendix B: Results of linear mixed-effects models predicting F1 and F2 for individual speakers in the alveolar context. In each case, the intercept is the epenthetic vowel, and each other lexical vowel is compared to that epenthetic vowel to identify similarities. The label under each speaker’s identifier indicates which epenthetic vowel(s) they seem to have used based on these results. For discussion of the ‘other’ cases, see the main text (Section 3.4.1).

Speaker	Alveolar									
	F1					F2				
		Estimate	SE	t value	Pr(> t)		Estimate	SE	t value	Pr(> t)
F1	(Intercept)	-0.4553	0.1388	-3.281	0.00783 *		0.06668	0.15213	0.438	0.66991
[ʊ]	Vowel[a]	2.3593	0.2038	11.576	7.15E-08 ***		-0.50527	0.22294	-2.266	0.04238 *
	Vowel[e]	0.6193	0.1997	3.101	0.00986 **		0.86397	0.21868	3.951	0.00211 **
	Vowel[i]	-0.1315	0.1997	-0.659	0.52347		1.62751	0.21868	7.443	1.03E-05 ***
	Vowel[o]	0.4966	0.1997	2.487	0.02983 *		-1.29223	0.21868	-5.909	8.68E-05 ***
	Vowel[ʊ]	0.19	0.2085	0.911	0.37882		0.17166	0.22782	0.753	0.46436
F4	(Intercept)	-0.3769	0.14742	-2.557	0.0165 *		-0.12728	0.08679	-1.467	0.188
[ʊ]	Vowel[a]	2.60647	0.22838	11.413	7.75E-12 ***		-0.19196	0.13199	-1.454	0.18
	Vowel[e]	0.3116	0.217	1.436	0.1625		1.23227	0.12635	9.753	1.18E-05 ***
	Vowel[i]	-0.62216	0.22838	-2.724	0.0112 *		1.86968	0.13199	14.165	2.00E-07 ***
	Vowel[o]	0.12962	0.217	0.597	0.5553		-0.97901	0.12635	-7.748	6.16E-05 ***
	Vowel[ʊ]	-0.02749	0.24447	-0.112	0.9113		0.14289	0.13959	1.024	0.328
F5	(Intercept)	-0.09422	0.15514	-0.607	0.55999		-0.7533	0.1692	-4.451	0.00121 **
‘other’	Vowel[a]	2.0949	0.23445	8.935	2.53E-06 ***		0.2451	0.2485	0.986	0.34391
	Vowel[e]	-0.11416	0.23445	-0.487	0.63602		1.8823	0.2485	7.574	7.67E-06 ***

	Vowel[i]	-0.98196	0.23445	-4.188	0.00157	**	2.3509	0.2485	9.46	8.02E-07	***
	Vowel[o]	0.24469	0.23445	1.044	0.31937		-0.3845	0.2485	-1.547	0.14843	
	Vowel[ʊ]	-0.15342	0.2572	-0.597	0.56007		0.5566	0.2639	2.109	0.05308	.
F7	(Intercept)	-0.01338	0.22421	-0.06	0.953764		-1.04073	0.12569	-8.28	5.36E-05	***
'other'	Vowel[a]	1.78218	0.3438	5.184	0.000272	***	0.98814	0.19128	5.166	0.000473	***
	Vowel[e]	0.01242	0.39789	0.031	0.975444		2.08976	0.21833	9.571	5.14E-08	***
	Vowel[i]	-1.19248	0.3438	-3.469	0.005014	**	2.9663	0.19128	15.507	3.84E-08	***
	Vowel[o]	0.58952	0.3438	1.715	0.113502		-0.01674	0.19128	-0.088	0.932061	
	Vowel[ʊ]	-0.93501	0.36563	-2.557	0.023318	*	0.79546	0.20239	3.93	0.002106	**
F9	(Intercept)	-0.55144	0.06642	-8.302	7.96E-05	***	-0.3178	0.1078	-2.946	0.01518	*
[ʊ]	Vowel[a]	2.6232	0.0992	26.444	9.91E-10	***	-0.1349	0.1564	-0.863	0.407204	
	Vowel[e]	0.47953	0.10981	4.367	0.000872	***	1.2099	0.1658	7.296	5.87E-06	***
	Vowel[i]	-0.23116	0.10373	-2.228	0.049854	*	2.1833	0.1607	13.587	1.66E-08	***
	Vowel[o]	0.23477	0.10981	2.138	0.053303	.	-0.8774	0.1658	-5.291	0.000144	***
	Vowel[ʊ]	-0.05449	0.0992	-0.549	0.5964		0.1596	0.1564	1.02	0.330045	
F10	(Intercept)	-0.274277	0.175704	-1.561	0.1584		-0.236993	0.202979	-1.168	0.266755	
[ʊ]	Vowel[a]	2.048214	0.265978	7.701	1.32E-05	***	0.004453	0.288707	0.015	0.987954	
	Vowel[e]	0.258454	0.265978	0.972	0.3533		1.339713	0.288707	4.64	0.000607	***
	Vowel[i]	-0.758447	0.253247	-2.995	0.0124	*	1.614507	0.270782	5.962	6.97E-05	***
	Vowel[o]	0.173516	0.265978	0.652	0.5283		-0.899908	0.288707	-3.117	0.009142	**
	Vowel[ʊ]	0.009365	0.277391	0.034	0.9736		-0.020729	0.290278	-0.071	0.944249	
F12	(Intercept)	-0.37425	0.13663	-2.739	0.0214	*	-0.64639	0.1074	-6.019	1.74E-06	***
'other'	Vowel[a]	2.42558	0.19911	12.182	1.13E-07	***	0.06528	0.17317	0.377	0.709029	
	Vowel[e]	0.14456	0.19584	0.738	0.477		1.80891	0.16405	11.026	1.07E-11	***
	Vowel[i]	-0.23416	0.19584	-1.196	0.2587		2.32545	0.16405	14.175	2.66E-14	***

	Vowel[o]	0.06687	0.19584	0.341	0.7396		-0.3924	0.16405	-2.392	0.023719	*
	Vowel[ʊ]	-0.28916	0.22627	-1.278	0.2264		0.7929	0.20565	3.856	0.000618	***
F13	(Intercept)	-0.567057	0.134148	-4.227	0.00297	**	-0.03131	0.109	-0.287	0.78	
[ʊ]	Vowel[a]	2.611141	0.199067	13.117	1.44E-07	***	-0.25265	0.16099	-1.569	0.142	
	Vowel[e]	0.437048	0.199067	2.195	0.05318	.	1.0554	0.16099	6.556	2.53E-05	***
	Vowel[i]	0.007729	0.207514	0.037	0.97095		1.76655	0.1674	10.553	6.78E-08	***
	Vowel[o]	0.519089	0.199067	2.608	0.02641	*	-1.22314	0.16099	-7.597	5.85E-06	***
	Vowel[ʊ]	-0.044614	0.199067	-0.224	0.82724		0.09105	0.16099	0.566	0.582	
F15	(Intercept)	-0.76444	0.07425	-10.296	5.04E-11	***	0.001105	0.042589	0.026	0.979	
[ʊ]	Vowel[a]	2.77015	0.11502	24.084	< 2e-16	***	-0.424934	0.065979	-6.44	5.64E-07	***
	Vowel[e]	0.88886	0.11502	7.728	2.03E-08	***	0.799568	0.065979	12.119	1.18E-12	***
	Vowel[i]	-0.27419	0.10929	-2.509	0.0182	*	1.789042	0.062689	28.538	< 2e-16	***
	Vowel[o]	0.78183	0.10929	7.154	8.74E-08	***	-1.363417	0.062689	-21.749	< 2e-16	***
	Vowel[ʊ]	0.11384	0.11502	0.99	0.3308		-0.096606	0.065979	-1.464	0.154	
F16	(Intercept)	-0.5565	0.1378	-4.04	0.00181	**	-0.5128	0.14	-3.663	0.00423	**
‘other’	Vowel[a]	2.113	0.1978	10.685	1.53E-07	***	0.1922	0.2054	0.936	0.36765	
	Vowel[e]	0.3779	0.2037	1.856	0.08588	.	1.3421	0.2157	6.223	2.56E-05	***
	Vowel[i]	-0.4464	0.1978	-2.257	0.04312	*	2.056	0.2054	10.012	3.27E-07	***
	Vowel[o]	0.5766	0.1948	2.96	0.01252	*	-0.7106	0.198	-3.589	0.00479	**
	Vowel[ʊ]	-0.4322	0.2037	-2.122	0.05322	.	0.4633	0.2157	2.148	0.0503	.
M1	(Intercept)	0.17658	0.09931	1.778	0.0863	.	-1.0157	0.0774	-13.122	1.76E-13	***
[o]	Vowel[a]	1.86397	0.17904	10.411	3.93E-11	***	0.5321	0.1395	3.814	0.000691	***
	Vowel[e]	-0.06924	0.16618	-0.417	0.6801		1.8977	0.1295	14.652	1.17E-14	***
	Vowel[i]	-1.12346	0.15703	-7.154	8.72E-08	***	2.5442	0.1224	20.788	< 2e-16	***

	Vowel[o]	0.20023	0.16618	1.205	0.2383		0.1184	0.1295	0.914	0.36836	
	Vowel[ʊ]	-0.91615	0.16618	-5.513	6.84E-06	***	0.9456	0.1295	7.301	5.99E-08	***
M2	(Intercept)	-0.47015	0.15626	-3.009	0.01198	*	-0.11312	0.18343	-0.617	0.5498	
[ʊ]	Vowel[a]	2.26797	0.22408	10.121	4.34E-07	***	-0.16155	0.26102	-0.619	0.54808	
	Vowel[e]	0.46235	0.22685	2.038	0.06405	.	1.13857	0.26254	4.337	0.00102	**
	Vowel[i]	-0.82867	0.22408	-3.698	0.00324	**	1.64454	0.26102	6.301	4.88E-05	***
	Vowel[o]	0.63737	0.22408	2.844	0.01527	*	-1.04855	0.26102	-4.017	0.00187	**
	Vowel[ʊ]	0.03822	0.22685	0.168	0.869		-0.08856	0.26254	-0.337	0.74184	
M3	(Intercept)	0.22267	0.10478	2.125	0.0425	*	-1.08515	0.10457	-10.377	1.10E-06	***
[o]	Vowel[a]	1.38602	0.17533	7.905	1.31E-08	***	0.70202	0.1523	4.609	0.000708	***
	Vowel[e]	-0.16002	0.17533	-0.913	0.3692		1.90098	0.1523	12.482	6.06E-08	***
	Vowel[i]	-1.40177	0.1889	-7.421	4.41E-08	***	2.49071	0.15457	16.114	1.81E-09	***
	Vowel[o]	0.01733	0.16568	0.105	0.9175		-0.01964	0.15024	-0.131	0.898433	
	Vowel[ʊ]	-0.91603	0.17533	-5.225	1.50E-05	***	1.02346	0.1523	6.72	2.92E-05	***
M4	(Intercept)	0.3132	0.2293	1.366	0.20016		-0.68257	0.15791	-4.323	0.001269	**
‘other’	Vowel[a]	1.3598	0.3236	4.202	0.000962	***	0.07238	0.22056	0.328	0.747954	
	Vowel[e]	-0.5437	0.3356	-1.62	0.130771		1.76566	0.22974	7.686	5.42E-06	***
	Vowel[i]	-1.5456	0.3444	-4.488	0.000583	***	2.29686	0.23492	9.777	2.33E-07	***
	Vowel[o]	0.1324	0.3356	0.394	0.700132		-0.06371	0.22974	-0.277	0.786232	
	Vowel[ʊ]	-0.9424	0.3356	-2.808	0.01557	*	1.17212	0.22974	5.102	0.000255	***