APPENDIX. Model construction details

	Added term	Baseline model	Compared model	Npar	AIC	BIC	Loglik	Deviance	χ^2	df	*p*-value	Comparison output	Retained model
Null Model with random intercept per child (M1)	Fixed effect of (log of) cumulative vocabulary (M2)	M1	M2	3	14210.86	14233.26	-7102.430	14204.86	72.87016	1	1.384658e-17	Better data fit with M2	M2
	Random slope effect of (log of) cumulative vocabulary (M3)	M2	M3	5	14147.87	14185.20	-7068.935	14137.87	66.98975	2	2.840273e-15	Better data fit with M3	M3
	Fixed effect of F1 (M4)	M3	M4	6	10376.46	10421.25	-5182.228	10364.46	3773.414	1	0	Better data fit with M4	M4
	Random slope effect of F1 (M5)	M4	M5	9	10252.98	10320.17	-5117.490	10234.98	129.4755	3	7.01617e-28	Better data fit with M5	M5
	Fixed effect of F0 (M6)	M5	M6	10	9735.323	9809.977	-4857.661	9715.323	519.6579	1	5.023185e-11	Better data fit with M6	M6
	Random slope effect of F0 (M7)	M6	M7	14	9611.730	9716.247	-4791.865	9583.730	131.5923	4	1.777648e-27	Better data fit with M7	M7
	Fixed effect of vowel place of articulation (M8)	M7	M8	5	9333.995	9445.977	-4651.997	9303.995	279.7355	1	8.575119e-63	Better data fit with M8	M8
	Random slope effect of vowel place of articulation (M9)	M8	M9	20	9188.328	9337.637	-4574.164	9148.328	155.6673	5	8.293409e	Better data fit with M9	M9
	Fixed quadratic effect of (log of) cumulative vocabulary (M10)	M9	M10	21	9189.144	9345.918	-4573.572	9147.144	1.183736	1	0.2765968	No better data fit with M10	M9
	Fixed effect of F1 interaction with F0 (M11)	M9	M11	21	9167.065	9323.840	-4562.533	9125.065	23.26224	1	1.413481e-06	Better data fit with M11	M11
	Fixed effect of F1 interaction with place of articulation (M12)	M11	M12	22	9150.388	9314.628	-4553.194	9106.388	18.6777	1	1.547822e-05	Better data fit with M12	M12
	Fixed effect of F1 interaction with (log of) cumulative vocabulary (M13)	M12	M13	23	9079.025	9250.730	-4516.512	9033.025	73.36271	1	1.078853e-17	Better data fit with M13	M13
	Fixed effect of F0 interaction with place of articulation (M14)	M13	M14	24	9041.742	9220.912	-4496.871	8993.742	39.2834	1	3.665448e-10	Better data fit with M14	M14
	Fixed effect of F0 interaction with (log of) cumulative vocabulary (M15)	M14	M15	25	9031.025	9217.661	-4490.512	8981.025	12.71658	1	0.0003624284	Better data fit with M15	M15
	Fixed effect of (log of) cumulative vocabulary interaction with F0 and F1 (M16)	M15	M16	26	9030.935	9225.037	-4489.468	8978.935	2.089669	1	0.1482982	No better data fit with M16	M15
	Fixed effect of place of articulation interaction with F0 and F1 (M17)	M15	M17	26	9029.156	9223.257	-4488.578	8977.156	3.869107	1	0.04918268	No better data fit with M17	M15
	Fixed effect of (log of) cumulative vocabulary interaction with F0 and F1 and place of articulation (M18)	M15	M18	27	9030.619	9232.186	-4488.310	8976.619	4.405878	2	0.110478	No better data fit with M18	M15