

Supplementary material S1.

Symbolic representation of the GLMM.

Left / Right ~ differences in vocal parameters +
differences in vocal parameters*age +
differences in vocal parameters*ancestry +
differences in vocal parameters*sexual orientation +
Random effect of the judge +
Random effect of the vocal stimuli

The response variable ('Left / Right') corresponds to whether the judge chose the voice on the left or the one on the right.

The differences in vocal parameters correspond to the difference between F0, F0-SD, Df, Pf, HNR, jitter and intensity between the voice on the left and the one on the right. Thus, if one of those differences is negative for a given pair of voices, it means that the voice on the left has lower values than the one on the right. If it is positive, the voice on the left has higher values.

Now for each judge, she chose one of these two voices for each of her choices, and we know whether she clicked on the left or the right. Thus, we know if she preferred for each vocal parameter, the voice with the lower F0 (negative difference, clicked left) or the highest F0 (positive difference, clicked right) for each single pair of voices. Overall, if the estimate of the GLMM for the difference in mean F0 is negative, judges chose on average voices with the lower F0; if the estimate is positive, it means that the judges chose on average voices with the higher F0.

Lastly, implementing control variables as main factors would not make any sense as it would mean that age, ancestry and sexual orientation have an influence on whether a judge just preferred to click on the left or the right. Thus, they need to be put in interaction with the differences in vocal parameters to know whether it influenced the judge's choice.

Supplementary material S2.

Below are presented all the models without the control variables (sexual orientation and ancestry) and the model without female judges with hearing impairment.

1. GLMM without ‘sexual orientation’

	Estimate	SE	χ^2	<i>p value</i>
Intercept	0.08	0.06	/	/
Difference in mean F0	-0.47	0.09	25.92	<0.001
Difference in F0-SD	0.46	0.08	25.29	<0.001
Difference in Df	0.16	0.09	2.99	0.083
Difference in Pf	-0.08	0.07	1.37	0.241
Difference in HNR	-0.12	0.10	1.43	0.231
Difference in jitter	-0.02	0.08	0.09	0.761
Difference in intensity	0.22	0.06	12.40	<0.001
<u>Interactions with age</u>				
Difference in F0	0.14	0.09	2.44	0.117
Difference in F0-SD	0.07	0.09	0.52	0.468
Difference in Df	0.11	0.08	1.75	0.185
Difference in Pf	-0.05	0.07	0.52	0.469
Difference in HNR	-0.10	0.10	1.07	0.300
Difference in jitter	0.10	0.08	1.42	0.232
Difference in intensity	0.15	0.06	5.77	0.016
<u>Interactions with ancestry</u>				
Difference in F0	-0.005	0.22	0.00	0.981
Difference in F0-SD	-0.38	0.20	3.58	0.058
Difference in Df	0.05	0.23	0.05	0.815
Difference in Pf	-0.17	0.18	0.87	0.349
Difference in HNR	0.01	0.25	0.002	0.961
Difference in jitter	0.04	0.21	0.04	0.829
Difference in intensity	-0.14	0.17	0.66	0.414

2. GLMM without ‘ancestry’

	Estimate	SE	χ^2	<i>p value</i>
Intercept	0.09	0.06	/	/
Difference in mean F0	-0.50	0.09	30.88	<0.001
Difference in F0-SD	0.46	0.08	31.33	<0.001
Difference in Df	0.16	0.09	3.03	0.081
Difference in Pf	-0.06	0.07	0.74	0.388
Difference in HNR	-0.09	0.10	0.86	0.352
Difference in jitter	-0.01	0.08	0.01	0.900
Difference in intensity	0.17	0.06	7.87	0.004
<u>Interactions with age</u>				
Difference in F0	0.15	0.09	2.78	0.097
Difference in F0-SD	0.03	0.09	0.11	0.736
Difference in Df	0.12	0.09	2.08	0.148
Difference in Pf	-0.07	0.07	0.81	0.368
Difference in HNR	-0.12	0.10	1.56	0.210
Difference in jitter	0.10	0.08	1.61	0.204
Difference in intensity	0.15	0.06	5/77	0.016
<u>Interactions with sexual orientation</u>				
Difference in F0	0.16	0.24	0.46	0.497
Difference in F0-SD	-0.54	0.22	5.71	0.016
Difference in Df	-0.10	0.23	0.20	0.652
Difference in Pf	-0.12	0.18	0.43	0.511
Difference in HNR	-0.15	0.28	0.30	0.581
Difference in jitter	0.14	0.24	0.35	0.553
Difference in intensity	0.25	0.17	2.04	0.153

3. GLMM without ‘age’

	Estimate	SE	χ^2	<i>p value</i>
Intercept	0.08	0.06	/	/
Difference in mean F0	-0.50	0.10	26.54	<0.001
Difference in F0-SD	0.50	0.10	32.47	<0.001
Difference in Df	0.15	0.10	2.39	0.121
Difference in Pf	-0.04	0.07	0.23	0.629
Difference in HNR	-0.11	0.10	1.12	0.289
Difference in jitter	-0.04	0.09	0.18	0.667
Difference in intensity	0.17	0.06	6.90	0.008
<u>Interactions with ancestry</u>				
Difference in F0	0.10	0.24	0.17	0.67
Difference in F0-SD	-0.50	0.22	4.98	0.025
Difference in Df	-0.11	0.24	0.24	0.625
Difference in Pf	-0.13	0.18	0.53	0.465
Difference in HNR	-0.09	0.28	0.11	0.738
Difference in jitter	0.14	0.24	0.36	0.548
Difference in intensity	-0.22	0.17	1.61	0.20
<u>Interactions with sexual orientation</u>				
Difference in F0	0.06	0.21	0.09	0.765
Difference in F0-SD	-0.40	0.20	4.02	0.044
Difference in Df	0.03	0.23	0.02	0.886
Difference in Pf	-0.16	0.18	0.79	0.372
Difference in HNR	0.07	0.25	0.08	0.778
Difference in jitter	0.08	0.21	0.16	0.687
Difference in intensity	-0.12	0.17	0.575	0.448

4. GLMM without judges with hearing impairment (n = 4)

	Estimate	SE	χ^2	<i>p</i> value
Intercept	0.10	0.06	/	/
Difference in mean F0	-0.49	0.10	23.66	<0.001
Difference in F0-SD	0.54	0.09	34.44	<0.001
Difference in Df	0.18	0.10	3.19	0.074
Difference in Pf	-0.06	0.08	0.54	0.461
Difference in HNR	-0.12	0.10	1.19	0.274
Difference in jitter	-0.04	0.09	0.21	0.643
Difference in intensity	0.17	0.07	6.94	0.008
<u>Interactions with age</u>				
Difference in F0	0.23	0.11	4.35	0.036
Difference in F0-SD	0.02	0.10	0.02	0.871
Difference in Df	0.19	0.12	2.70	0.100
Difference in Pf	-0.05	0.09	0.35	0.562
Difference in HNR	-0.15	0.12	1.73	0.188
Difference in jitter	0.10	0.10	1.04	0.308
Difference in intensity	0.15	0.07	4.32	0.037
<u>Interactions with ancestry</u>				
Difference in F0	0.04	0.22	0.03	0.861
Difference in F0-SD	-0.45	0.20	4.79	0.028
Difference in Df	0.09	0.24	0.14	0.708
Difference in Pf	-0.18	0.19	0.87	0.349
Difference in HNR	0.03	0.21	0.02	0.875
Difference in jitter	0.01	0.20	0.03	0.869
Difference in intensity	-0.07	0.17	0.17	0.677
<u>Interactions with sexual orientation</u>				
Difference in F0	0.22	0.24	0.82	0.363
Difference in F0-SD	-0.63	0.23	7.18	0.007
Difference in Df	-0.09	0.25	0.12	0.720
Difference in Pf	-0.07	0.19	0.15	0.692
Difference in HNR	-0.14	0.29	0.25	0.617
Difference in jitter	0.17	0.25	0.46	0.494
Difference in intensity	0.26	0.18	2.00	0.156

5. GLMM without judges who did not report sexual orientation (n = 8)

	Estimate	SE	χ^2	<i>p</i> value
Intercept	0.10	0.06	/	/
Difference in mean F0	-0.49	0.10	24.17	<0.001
Difference in F0-SD	0.52	0.09	32.65	<0.001
Difference in Df	0.19	0.10	3.39	0.065
Difference in Pf	-0.05	0.08	0.45	0.503
Difference in HNR	-0.12	0.10	1.39	0.236
Difference in jitter	-0.06	0.09	0.39	0.532
Difference in intensity	0.17	0.07	6.93	0.008
<u>Interactions with age</u>				
Difference in F0	0.24	0.10	5.55	0.018
Difference in F0-SD	-0.05	0.10	0.24	0.624
Difference in Df	0.20	0.11	3.38	0.065
Difference in Pf	-0.05	0.08	0.31	0.577
Difference in HNR	-0.17	0.11	2.34	0.125
Difference in jitter	0.07	0.09	0.55	0.457
Difference in intensity	0.15	0.07	5.62	0.017
<u>Interactions with ancestry</u>				
Difference in F0	0.05	0.22	0.05	0.817
Difference in F0-SD	-0.42	0.21	4.13	0.042
Difference in Df	0.02	0.24	0.009	0.922
Difference in Pf	-0.15	0.19	0.63	0.427
Difference in HNR	0.04	0.26	0.02	0.875
Difference in jitter	0.11	0.22	0.25	0.618
Difference in intensity	-0.05	0.17	0.07	0.792
<u>Interactions with sexual orientation</u>				
Difference in F0	0.06	0.31	0.04	0.836
Difference in F0-SD	-0.72	0.29	6.08	0.013
Difference in Df	0.12	0.29	0.18	0.671
Difference in Pf	0.02	0.23	0.009	0.924
Difference in HNR	-0.65	0.38	2.80	0.094
Difference in jitter	-0.35	0.31	1.28	0.257
Difference in intensity	0.45	0.24	3.31	0.068