

Attractiveness – female vocalizers:

Supplemental Material S1. Estimated marginal means of attractiveness ratings across female vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.34	0.0657	426	3.21	3.47
Series of vowels	4.04	0.0657	426	3.91	4.17
Single word	3.48	0.0657	426	3.36	3.61
Counting	4.17	0.0657	426	4.04	4.30
Greeting	4.10	0.0657	426	3.98	4.23
Rainbow Passage	4.24	0.0657	426	4.11	4.37

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S2. Post hoc comparisons of attractiveness ratings between stimuli in female vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.6995	0.0366	–19.12	12515	< .001
Single vowel	– Single word	–0.1418	0.0366	–3.88	12515	.002
Single vowel	– Counting	–0.8296	0.0366	–22.68	12515	< .001
Single vowel	– Greeting	–0.7620	0.0366	–20.83	12515	< .001
Single vowel	– Rainbow Passage	–0.8949	0.0366	–24.46	12515	< .001
Series of vowels	– Single word	0.5577	0.0366	15.24	12515	< .001
Series of vowels	– Counting	–0.1301	0.0366	–3.55	12515	.006
Series of vowels	– Greeting	–0.0625	0.0366	–1.71	12515	1.000
Series of vowels	– Rainbow Passage	–0.1954	0.0366	–5.34	12515	< .001
Single word	– Counting	–0.6878	0.0366	–18.79	12515	< .001
Single word	– Greeting	–0.6202	0.0366	–16.94	12515	< .001
Single word	– Rainbow Passage	–0.7531	0.0366	–20.57	12515	< .001
Counting	– Greeting	0.0676	0.0366	1.85	12515	.973
Counting	– Rainbow Passage	–0.0653	0.0366	–1.78	12515	1.000
Greeting	– Rainbow Passage	–0.1329	0.0366	–3.63	12515	.004

Attractiveness – male vocalizers:

Supplemental Material S3. Estimated marginal means of attractiveness ratings across male vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.10	0.0654	472	2.97	3.23
Series of vowels	3.52	0.0654	472	3.39	3.65
Single word	3.30	0.0654	472	3.17	3.43
Counting	3.79	0.0654	472	3.66	3.92
Greeting	3.84	0.0654	472	3.71	3.97
Rainbow Passage	3.91	0.0654	472	3.78	4.04

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S4. Post hoc comparisons of attractiveness ratings between stimuli in male vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.4150	0.0354	–11.71	12260	< .001
Single vowel	– Single word	–0.1972	0.0354	–5.57	12260	< .001
Single vowel	– Counting	–0.6838	0.0354	–19.30	12260	< .001
Single vowel	– Greeting	–0.7396	0.0354	–20.87	12260	< .001
Single vowel	– Rainbow Passage	–0.8038	0.0354	–22.69	12260	< .001
Series of vowels	– Single word	0.2178	0.0354	6.15	12260	< .001
Series of vowels	– Counting	–0.2689	0.0354	–7.59	12260	< .001
Series of vowels	– Greeting	–0.3246	0.0354	–9.17	12260	< .001
Series of vowels	– Rainbow Passage	–0.3888	0.0354	–10.98	12260	< .001
Single word	– Counting	–0.4867	0.0354	–13.74	12260	< .001
Single word	– Greeting	–0.5424	0.0354	–15.32	12260	< .001
Single word	– Rainbow Passage	–0.6066	0.0354	–17.13	12260	< .001
Counting	– Greeting	–0.0557	0.0354	–1.57	12260	1.000
Counting	– Rainbow Passage	–0.1199	0.0354	–3.39	12260	.011
Greeting	– Rainbow Passage	–0.0642	0.0354	–1.81	12260	1.000

Attractiveness – male vocalizers – conditions separately:

Supplemental Material S5. Estimated fixed and random effects of the models with perceived attractiveness as an outcome variable in males – separate for **online and lab raters**.

ONLINE								
Fixed effects		Estimate	SE	95% CI		df	t	p
				Lower	Upper			
Intercept		3.63723	0.07930	3.4818	3.79265	236.3	45.87	<.001
Stimulus type	2 – 1	0.47114	0.05237	0.3685	0.57378	4963.5	9.00	<.001
	3 – 1	0.13477	0.05237	0.0321	0.23740	4963.5	2.57	.010
	4 – 1	0.75278	0.05237	0.6501	0.85542	4963.5	14.38	<.001
	5 – 1	0.80295	0.05237	0.7003	0.90559	4963.5	15.33	<.001
	6 – 1	0.84628	0.05237	0.7436	0.94892	4963.5	16.16	<.001
Vocalizer’s age (0 – F, 1 – M)		–0.00525	0.00353	–0.0122	0.00167	100.0	–1.49	.140
Listener’s sex		–0.32580	0.14484	–0.6097	–0.04193	176.8	–2.25	.026
Random effects		SD	Variance	ICC				
Listener’s ID		0.936	0.876	0.383				
Vocalizer’s ID		0.453	0.205	0.127				
Residuals		1.188	1.412					
<i>n</i> _{observations} = 5,257; <i>n</i> _{listeners} = 179; <i>n</i> _{vocalizers} = 106								
LAB								
Fixed effects		Estimate	SE	95% CI		df	t	p
				Lower	Upper			
Intercept		3.45492	0.07462	3.3087	3.60117	318	46.30	<.001
Stimulus type	2 – 1	0.37599	0.04738	0.2831	0.46885	7183	7.94	<.001
	3 – 1	0.24086	0.04738	0.1480	0.33372	7183	5.08	<.001
	4 – 1	0.63593	0.04738	0.5431	0.72879	7183	13.42	<.001
	5 – 1	0.69555	0.04738	0.6027	0.78841	7183	14.68	<.001
	6 – 1	0.77424	0.04738	0.6814	0.86710	7183	16.34	<.001
Vocalizer’s age		–0.00962	0.00407	–0.0176	–0.00165	104	–2.37	.020
Listener’s sex		–0.63086	0.12058	–0.8672	–0.39454	254	–5.23	<.001
Random effects		SD	Variance	ICC				
Listener’s ID		0.931	0.857	0.390				
Vocalizer’s ID		0.406	0.165	0.110				
Residuals		1.157	1.338					
<i>n</i> _{observations} = 7,548; <i>n</i> _{listeners} = 256; <i>n</i> _{vocalizers} = 106								

Supplemental Material S6. Estimated marginal means of attractiveness ratings across male vocalizers in **online** condition.

Type of voice stimulus	M	SE	df	95% confidence interval	
				Lower	Upper
Single vowel	3.17	0.0878	324	3.00	3.34
Series of vowels	3.64	0.0877	323	3.47	3.82
Single word	3.31	0.0877	323	3.13	3.48
Counting	3.92	0.0877	323	3.75	4.10
Greeting	3.97	0.0877	323	3.80	4.15
Rainbow Passage	4.02	0.0877	323	3.85	4.19

Supplemental Material S7. Post hoc comparisons of attractiveness ratings between stimuli in male vocalizers in **online** condition.

Comparison							
Type of voice stimulus	Type of voice stimulus	Difference	SE	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}	
Single vowel	– Series of vowels	–0.4711	0.0524	–8.997	4964	< .001	
Single vowel	– Single word	–0.1348	0.0524	–2.573	4964	.151	
Single vowel	– Counting	–0.7528	0.0524	–14.375	4964	< .001	
Single vowel	– Greeting	–0.8030	0.0524	–15.333	4964	< .001	
Single vowel	– Rainbow Passage	–0.8463	0.0524	–16.161	4964	< .001	
Series of vowels	– Single word	0.3364	0.0523	6.434	4963	< .001	
Series of vowels	– Counting	–0.2816	0.0523	–5.387	4963	< .001	
Series of vowels	– Greeting	–0.3318	0.0523	–6.347	4963	< .001	
Series of vowels	– Rainbow Passage	–0.3751	0.0523	–7.176	4963	< .001	
Single word	– Counting	–0.6180	0.0523	–11.822	4963	< .001	
Single word	– Greeting	–0.6682	0.0523	–12.781	4963	< .001	
Single word	– Rainbow Passage	–0.7115	0.0523	–13.610	4963	< .001	
Counting	– Greeting	–0.0502	0.0523	–0.960	4963	1.000	
Counting	– Rainbow Passage	–0.0935	0.0523	–1.789	4963	1.000	
Greeting	– Rainbow Passage	–0.0433	0.0523	–0.829		1.000	

Attractiveness – male vocalizers – lab:

Supplemental Material S8. Estimated marginal means of attractiveness ratings across male vocalizers in lab condition.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.02	0.0807	433	2.86	3.18
Series of vowels	3.39	0.0807	433	3.23	3.55
Single word	3.26	0.0807	433	3.10	3.42
Counting	3.65	0.0807	433	3.49	3.81
Greeting	3.71	0.0807	433	3.55	3.87
Rainbow Passage	3.79	0.0807	433	3.63	3.95

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S9. Post hoc comparisons of attractiveness ratings between stimuli in male vocalizers in **online** condition.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.3760	0.0474	–7.94	7183	< .001
Single vowel	– Single word	–0.2409	0.0474	–5.08	7183	< .001
Single vowel	– Counting	–0.6359	0.0474	–13.42	7183	< .001
Single vowel	– Greeting	–0.6955	0.0474	–14.68	7183	< .001
Single vowel	– Rainbow Passage	–0.7742	0.0474	–16.34	7183	< .001
Series of vowels	– Single word	0.1351	0.0474	2.85	7183	.065
Series of vowels	– Counting	–0.2599	0.0474	–5.49	7183	< .001
Series of vowels	– Greeting	–0.3196	0.0474	–6.74	7183	< .001
Series of vowels	– Rainbow Passage	–0.3983	0.0474	–8.41	7183	< .001
Single word	– Counting	–0.3951	0.0474	–8.34	7183	< .001
Single word	– Greeting	–0.4547	0.0474	–9.60	7183	< .001
Single word	– Rainbow Passage	–0.5334	0.0474	–11.26	7183	< .001
Counting	– Greeting	–0.0596	0.0474	–1.26	7183	1.000
Counting	– Rainbow Passage	–0.1383	0.0474	–2.92	7183	.053

Supplemental Material S9. Post hoc comparisons of attractiveness ratings between stimuli in male vocalizers in **online** condition.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Greeting	– Rainbow Passage	–0.0787	0.0474	–1.66	7183	1.000

Dominance – female vocalizers:

Supplemental Material S10. Estimated marginal means of dominance ratings across female vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.04	0.0723	353	2.90	3.18
Series of vowels	3.96	0.0724	353	3.81	4.10
Single word	3.40	0.0724	353	3.26	3.55
Counting	3.80	0.0724	353	3.66	3.94
Greeting	3.81	0.0724	353	3.67	3.95
Rainbow Passage	3.70	0.0724	353	3.55	3.84

Supplemental Material S11. Post hoc comparisons of dominance ratings between stimuli in female vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.91370	0.0405	–22.542	11932	< .001
Single vowel	– Single word	–0.36286	0.0405	–8.952	11932	< .001
Single vowel	– Counting	–0.76045	0.0405	–18.761	11932	< .001
Single vowel	– Greeting	–0.76623	0.0405	–18.904	11932	< .001
Single vowel	– Rainbow Passage	–0.65394	0.0405	–16.134	11932	< .001
Series of vowels	– Single word	0.55084	0.0406	13.583	11932	< .001
Series of vowels	– Counting	0.15325	0.0406	3.779	11932	.002
Series of vowels	– Greeting	0.14747	0.0406	3.636	11932	.004
Series of vowels	– Rainbow Passage	0.25976	0.0406	6.405	11932	< .001
Single word	– Counting	–0.39759	0.0406	–9.804	11932	< .001
Single word	– Greeting	–0.40337	0.0406	–9.947	11932	< .001
Single word	– Rainbow Passage	–0.29108	0.0406	–7.178	11932	< .001
Counting	– Greeting	–0.00578	0.0406	–0.143	11932	1.000
Counting	– Rainbow Passage	0.10651	0.0406	2.626	11932	.130
Greeting	– Rainbow Passage	0.11229	0.0406	2.769	11932	.084

Dominance – male vocalizers:

Supplemental Material S12. Estimated marginal means of dominance ratings across male vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.20	0.0743	329	3.06	3.35
Series of vowels	3.80	0.0743	329	3.66	3.95
Single word	3.58	0.0743	329	3.44	3.73
Counting	3.90	0.0743	329	3.76	4.05
Greeting	3.89	0.0743	329	3.75	4.04
Rainbow Passage	3.68	0.0743	329	3.53	3.82

Supplemental Material S13. Post hoc comparisons of dominance ratings between stimuli in male vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.5992	0.0415	–14.429	11755	< .001
Single vowel	– Single word	–0.3819	0.0415	–9.197	11755	< .001
Single vowel	– Counting	–0.7003	0.0415	–16.863	11755	< .001
Single vowel	– Greeting	–0.6896	0.0415	–16.604	11755	< .001
Single vowel	– Rainbow Passage	–0.4757	0.0415	–11.454	11755	< .001
Series of vowels	– Single word	0.2173	0.0415	5.236	11754	< .001
Series of vowels	– Counting	–0.1011	0.0415	–2.436	11754	.223
Series of vowels	– Greeting	–0.0903	0.0415	–2.177	11754	.443
Series of vowels	– Rainbow Passage	0.1235	0.0415	2.977	11754	.044
Single word	– Counting	–0.3184	0.0415	–7.672	11754	< .001
Single word	– Greeting	–0.3076	0.0415	–7.413	11754	< .001
Single word	– Rainbow Passage	–0.0938	0.0415	–2.259	11754	.358
Counting	– Greeting	0.0107	0.0415	0.259	11754	1.000
Counting	– Rainbow Passage	0.2246	0.0415	5.412	11754	< .001
Greeting	– Rainbow Passage	0.2139	0.0415	5.154	11754	< .001

Likability – female vocalizers:

Supplemental Material S14. Estimated marginal means of likability ratings across female vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.73	0.0626	458	3.61	3.85
Series of vowels	4.17	0.0626	458	4.05	4.30
Single word	3.77	0.0626	458	3.64	3.89
Counting	4.32	0.0626	458	4.20	4.44
Greeting	4.52	0.0626	458	4.40	4.65
Rainbow Passage	4.45	0.0626	458	4.33	4.57

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S15. Post hoc comparisons of likability ratings between stimuli in female vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.4423	0.0365	–12.11	12364	< .001
Single vowel	– Single word	–0.0372	0.0365	–1.02	12364	1.000
Single vowel	– Counting	–0.5898	0.0365	–16.15	12364	< .001
Single vowel	– Greeting	–0.7944	0.0365	–21.75	12364	< .001
Single vowel	– Rainbow Passage	–0.7181	0.0365	–19.66	12364	< .001
Series of vowels	– Single word	0.4051	0.0365	11.09	12364	< .001
Series of vowels	– Counting	–0.1474	0.0365	–4.04	12364	< .001
Series of vowels	– Greeting	–0.3521	0.0365	–9.64	12364	< .001
Series of vowels	– Rainbow Passage	–0.2758	0.0365	–7.55	12364	< .001
Single word	– Counting	–0.5526	0.0365	–15.13	12364	< .001
Single word	– Greeting	–0.7572	0.0365	–20.73	12364	< .001
Single word	– Rainbow Passage	–0.6809	0.0365	–18.64	12364	< .001
Counting	– Greeting	–0.2047	0.0365	–5.60	12364	< .001
Counting	– Rainbow Passage	–0.1284	0.0365	–3.51	12364	.007
Greeting	– Rainbow Passage	0.0763	0.0365	2.09	12364	.552

Likability – male vocalizers:

Supplemental Material S16. Estimated marginal means of likability ratings across male vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.49	0.0588	589	3.38	3.61
Series of vowels	3.80	0.0588	589	3.68	3.91
Single word	3.67	0.0588	589	3.55	3.78
Counting	4.05	0.0588	589	3.94	4.17
Greeting	4.26	0.0588	589	4.15	4.38
Rainbow Passage	4.24	0.0588	589	4.12	4.35

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S17. Post hoc comparisons of likability ratings between stimuli in male vocalizers.

Comparison			Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	–	Type of voice stimulus					
Single vowel	–	Series of vowels	–0.3004	0.0355	–8.470	12158	< .001
Single vowel	–	Single word	–0.1724	0.0355	–4.861	12158	< .001
Single vowel	–	Counting	–0.5560	0.0355	–15.676	12158	< .001
Single vowel	–	Greeting	–0.7700	0.0355	–21.709	12158	< .001
Single vowel	–	Rainbow Passage	–0.7402	0.0355	–20.870	12158	< .001
Series of vowels	–	Single word	0.1280	0.0355	3.609	12158	.005
Series of vowels	–	Counting	–0.2556	0.0355	–7.205	12158	< .001
Series of vowels	–	Greeting	–0.4695	0.0355	–13.238	12158	< .001
Series of vowels	–	Rainbow Passage	–0.4398	0.0355	–12.399	12158	< .001
Single word	–	Counting	–0.3836	0.0355	–10.814	12158	< .001
Single word	–	Greeting	–0.5975	0.0355	–16.848	12158	< .001
Single word	–	Rainbow Passage	–0.5678	0.0355	–16.009	12158	< .001
Counting	–	Greeting	–0.2140	0.0355	–6.033	12158	< .001
Counting	–	Rainbow Passage	–0.1842	0.0355	–5.194	12158	< .001
Greeting	–	Rainbow Passage	0.0298	0.0355	0.839	12158	1.000

Trustworthiness – female vocalizers:

Supplemental Material S18. Estimated marginal means of trustworthiness ratings across female vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	3.12	0.0656	580	2.99	3.25
Series of vowels	3.97	0.0656	580	3.84	4.10
Single word	3.26	0.0656	580	3.13	3.39
Counting	4.12	0.0656	580	3.99	4.25
Greeting	4.20	0.0656	580	4.07	4.32
Rainbow Passage	4.10	0.0656	580	3.97	4.23

Note. Means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S19. Post hoc comparisons of trustworthiness ratings between stimuli in female vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.8481	0.0419	–20.265	11467	< .001
Single vowel	– Single word	–0.1383	0.0419	–3.306	11467	0.014
Single vowel	– Counting	–0.9935	0.0419	–23.738	11467	< .001
Single vowel	– Greeting	–1.0722	0.0419	–25.618	11467	< .001
Single vowel	– Rainbow Passage	–0.9754	0.0419	–23.307	11467	< .001
Series of vowels	– Single word	0.7098	0.0419	16.959	11467	< .001
Series of vowels	– Counting	–0.1454	0.0419	–3.473	11467	.008
Series of vowels	– Greeting	–0.2241	0.0419	–5.354	11467	< .001
Series of vowels	– Rainbow Passage	–0.1273	0.0419	–3.042	11467	.035
Single word	– Counting	–0.8551	0.0419	–20.432	11467	< .001
Single word	– Greeting	–0.9338	0.0419	–22.313	11467	< .001
Single word	– Rainbow Passage	–0.8371	0.0419	–20.001	11467	< .001
Counting	– Greeting	–0.0787	0.0419	–1.880	11467	.901
Counting	– Rainbow Passage	0.0180	0.0419	0.431	11467	1.000
Greeting	– Rainbow Passage	0.0967	0.0419	2.312	11467	.312

Trust – male vocalizers:

Supplemental Material S20. Estimated marginal means of trustworthiness ratings across male vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% Confidence Interval	
				Lower	Upper
Single vowel	3.05	0.0668	580	2.92	3.18
Series of vowels	3.73	0.0668	580	3.60	3.86
Single word	3.23	0.0668	580	3.10	3.36
Counting	4.00	0.0668	580	3.87	4.13
Greeting	4.01	0.0668	580	3.88	4.14
Rainbow Passage	4.05	0.0668	580	3.92	4.18

Supplemental Material S21. Post hoc comparisons of trustworthiness ratings between stimuli in male vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.6754	0.0418	–16.145	11156	< .001
Single vowel	– Single word	–0.1749	0.0418	–4.181	11156	< .001
Single vowel	– Counting	–0.9444	0.0418	–22.577	11156	< .001
Single vowel	– Greeting	–0.9594	0.0418	–22.933	11156	< .001
Single vowel	– Rainbow Passage	–0.9969	0.0418	–23.831	11156	< .001
Series of vowels	– Single word	0.5005	0.0418	11.965	11156	< .001
Series of vowels	– Counting	–0.2690	0.0418	–6.431	11156	< .001
Series of vowels	– Greeting	–0.2840	0.0418	–6.788	11156	< .001
Series of vowels	– Rainbow Passage	–0.3215	0.0418	–7.685	11156	< .001
Single word	– Counting	–0.7695	0.0418	–18.396	11156	< .001
Single word	– Greeting	–0.7845	0.0418	–18.752	11156	< .001
Single word	– Rainbow Passage	–0.8220	0.0418	–19.650	11156	< .001
Counting	– Greeting	–0.0149	0.0418	–0.357	11156	1.000
Counting	– Rainbow Passage	–0.0525	0.0418	–1.254	11156	1.000
Greeting	– Rainbow Passage	–0.0376	0.0418	–0.898	11156	1.000

Femininity–masculinity – female vocalizers:

Supplemental Material S22. Estimated marginal means of femininity–masculinity ratings across female vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	2.62	0.0573	579	2.50	2.73
Series of vowels	2.32	0.0573	580	2.21	2.43
Single word	2.51	0.0573	580	2.40	2.63
Counting	2.20	0.0573	580	2.09	2.31
Greeting	2.23	0.0573	580	2.11	2.34
Rainbow Passage	2.19	0.0573	580	2.08	2.31

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S23. Post hoc comparisons of femininity–masculinity ratings between stimuli in female vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	0.29719	0.0293	10.141	11705	< .001
Single vowel	– Single word	0.10358	0.0293	3.534	11705	.006
Single vowel	– Counting	0.41807	0.0293	14.266	11705	< .001
Single vowel	– Greeting	0.39154	0.0293	13.361	11705	< .001
Single vowel	– Rainbow Passage	0.42397	0.0293	14.467	11705	< .001
Series of vowels	– Single word	–0.19361	0.0293	–6.600	11705	< .001
Series of vowels	– Counting	0.12088	0.0293	4.121	11705	< .001
Series of vowels	– Greeting	0.09435	0.0293	3.216	11705	.020
Series of vowels	– Rainbow Passage	0.12678	0.0293	4.322	11705	< .001
Single word	– Counting	0.31450	0.0293	10.721	11705	< .001
Single word	– Greeting	0.28796	0.0293	9.816	11705	< .001
Single word	– Rainbow Passage	0.32039	0.0293	10.922	11705	< .001
Counting	– Greeting	–0.02654	0.0293	–0.905	11705	1.000
Counting	– Rainbow Passage	0.00590	0.0293	0.201	11705	1.000
Greeting	– Rainbow Passage	0.03243	0.0293	1.106	11705	1.000

Femininity–masculinity – male vocalizers:

Supplemental Material S24. Estimated marginal means of femininity–masculinity ratings across male vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	5.45	0.0594	344	5.34	5.57
Series of vowels	5.66	0.0594	343	5.54	5.78
Single word	5.56	0.0594	343	5.44	5.67
Counting	5.76	0.0594	343	5.64	5.88
Greeting	5.75	0.0594	343	5.64	5.87
Rainbow Passage	5.68	0.0594	343	5.56	5.80

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S25. Post hoc comparisons of femininity–masculinity ratings between stimuli in male vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.20407	0.0284	–7.192	11459	< .001
Single vowel	– Single word	–0.10107	0.0284	–3.562	11460	.006
Single vowel	– Counting	–0.30717	0.0284	–10.826	11459	< .001
Single vowel	– Greeting	–0.29966	0.0284	–10.561	11459	< .001
Single vowel	– Rainbow Passage	–0.22459	0.0284	–7.915	11459	< .001
Series of vowels	– Single word	0.10299	0.0283	3.635	11459	.004
Series of vowels	– Counting	–0.10310	0.0283	–3.639	11459	.004
Series of vowels	– Greeting	–0.09560	0.0283	–3.374	11459	.011
Series of vowels	– Rainbow Passage	–0.02052	0.0283	–0.724	11459	1.000
Single word	– Counting	–0.20610	0.0283	–7.274	11459	< .001
Single word	– Greeting	–0.19859	0.0283	–7.009	11459	< .001
Single word	– Rainbow Passage	–0.12352	0.0283	–4.359	11459	< .001
Counting	– Greeting	0.00751	0.0283	0.265	11459	1.000
Counting	– Rainbow Passage	0.08258	0.0283	2.915	11459	.053
greeting	– Rainbow Passage	0.07508	0.0283	2.650	11459	.121

Health – female vocalizers:

Supplemental Material S26. Estimated marginal means of health ratings across female vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	4.53	0.0635	453	4.41	4.65
Series of vowels	5.23	0.0635	453	5.11	5.36
Single word	4.74	0.0635	453	4.61	4.86
Counting	5.25	0.0635	453	5.13	5.38
Greeting	5.36	0.0635	453	5.24	5.49
Rainbow Passage	5.19	0.0635	453	5.06	5.31

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S27. Post hoc comparisons of health ratings between stimuli in male vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.7026	0.0394	–17.846	12691	< .001
Single vowel	– Single word	–0.2096	0.0394	–5.325	12691	< .001
Single vowel	– Counting	–0.7203	0.0394	–18.295	12691	< .001
Single vowel	– Greeting	–0.8305	0.0394	–21.095	12691	< .001
Single vowel	– Rainbow Passage	–0.6582	0.0394	–16.717	12691	< .001
Series of vowels	– Single word	0.4930	0.0394	12.509	12691	< .001
Series of vowels	– Counting	–0.0177	0.0394	–0.449	12691	1.000
Series of vowels	– Greeting	–0.1279	0.0394	–3.245	12691	.018
Series of vowels	– Rainbow Passage	0.0444	0.0394	1.128	12691	1.000
Single word	– Counting	–0.5107	0.0394	–12.958	12691	< .001
Single word	– Greeting	–0.6209	0.0394	–15.755	12691	< .001
Single word	– Rainbow Passage	–0.4485	0.0394	–11.382	12691	< .001
Counting	– Greeting	–0.1102	0.0394	–2.796	12691	.078
Counting	– Rainbow Passage	0.0621	0.0394	1.577	12691	1.000
Greeting	– Rainbow Passage	0.1723	0.0394	4.373	12691	< .001

Health – male vocalizers:

Supplemental Material S28. Estimated marginal means of health ratings across male vocalizers.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	4.36	0.0687	450	4.23	4.50
Series of vowels	4.78	0.0687	449	4.64	4.91
Single word	4.71	0.0687	449	4.57	4.84
Counting	5.04	0.0687	449	4.91	5.18
Greeting	5.11	0.0687	449	4.97	5.24
Rainbow Passage	4.95	0.0687	449	4.82	5.09

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S29. Post hoc comparisons of health ratings between stimuli in male vocalizers.

Comparison		Difference	<i>SE</i>	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}
Type of voice stimulus	Type of voice stimulus					
Single vowel	– Series of vowels	–0.4116	0.0396	–10.39	12355	< .001
Single vowel	– Single word	–0.3434	0.0396	–8.66	12355	< .001
Single vowel	– Counting	–0.6796	0.0396	–17.15	12355	< .001
Single vowel	– Greeting	–0.7428	0.0396	–18.74	12355	< .001
Single vowel	– Rainbow Passage	–0.5867	0.0396	–14.81	12355	< .001
Series of vowels	– Single word	0.0683	0.0396	1.73	12355	1.000
Series of vowels	– Counting	–0.2680	0.0396	–6.77	12355	< .001
Series of vowels	– Greeting	–0.3312	0.0396	–8.37	12355	< .001
Series of vowels	– Rainbow Passage	–0.1751	0.0396	–4.42	12355	< .001
Single word	– Counting	–0.3363	0.0396	–8.50	12355	< .001
Single word	– Greeting	–0.3994	0.0396	–10.09	12355	< .001
Single word	– Rainbow Passage	–0.2434	0.0396	–6.15	12355	< .001
Counting	– Greeting	–0.0632	0.0396	–1.60	12355	1.000
Counting	– Rainbow Passage	0.0929	0.0396	2.35	12355	.284
Greeting	– Rainbow Passage	0.1561	0.0396	3.94	12355	.001

Health – male vocalizers – conditions separately:

Supplemental Material S30. Estimated fixed and random effects of the models with perceived **health** as an outcome variable in males – separate for **online and lab raters**.

ONLINE								
Fixed effects		Estimate	SE	95% CI		df	t	p
				Lower	Upper			
Intercept		4.91307	0.08749	4.7416	5.08454	236	56.16	<.001
Stimulus type	2 – 1	0.44747	0.06096	0.3280	0.56694	4919	7.34	<.001
	3 – 1	0.33482	0.06096	0.2154	0.45430	4919	5.49	<.001
	4 – 1	0.66126	0.06096	0.5418	0.78073	4919	10.85	<.001
	5 – 1	0.76931	0.06096	0.6498	0.88878	4919	12.62	<.001
	6 – 1	0.61988	0.06096	0.5004	0.73935	4919	10.17	<.001
Vocalizer’s age (0 – F, 1 – M)		–0.00900	0.00404	–0.0169	–0.00109	101	–2.23	.028
Listener’s sex		–0.27141	0.15946	–0.5840	0.04114	176	–1.70	.091
Random effects		SD	Variance	ICC				
Listener’s ID		0.996	0.993	0.382				
Vocalizer’s ID		0.426	0.181	0.102				
Residuals		1.267	1.605					

*n*_{observations} = 5,210; *n*_{listeners} = 178; *n*_{vocalizers} = 106

LAB								
Fixed effects		Estimate	SE	95% CI		df	t	p
				Lower	Upper			
Intercept		4.72224	0.07432	4.5766	4.86790	300	63.540	<.001
Stimulus type	2 – 1	0.38737	0.05180	0.2858	0.48890	7323	7.478	<.001
	3 – 1	0.34918	0.05180	0.2477	0.45071	7323	6.741	<.001
	4 – 1	0.69213	0.05180	0.5906	0.79366	7323	13.361	<.001
	5 – 1	0.72486	0.05180	0.6233	0.82639	7323	13.993	<.001
	6 – 1	0.56430	0.05180	0.4628	0.66583	7323	10.893	<.001
Vocalizer’s age		–0.00670	0.00429	–0.0151	0.00170	102	–1.564	.121
Listener’s sex		0.08660	0.11799	–0.1446	0.31785	261	0.734	.464
Random effects		SD	Variance	ICC				
Listener’s ID		0.912	0.832	0.326				
Vocalizer’s ID		0.473	0.224	0.115				
Residuals		1.312	1.721					

*n*_{observations} = 7,698; *n*_{listeners} = 263; *n*_{vocalizers} = 106

Supplemental Material S31. Estimated marginal means of health ratings across male vocalizers in **online** condition.

Type of voice stimulus	M	SE	df	95% confidence interval	
				Lower	Upper
Single vowel	4.48	0.0982	335	4.28	4.67
Series of vowels	4.92	0.0981	333	4.73	5.12
Single word	4.81	0.0981	333	4.62	5.01
Counting	5.14	0.0981	333	4.95	5.33
Greeting	5.25	0.0981	333	5.05	5.44
Rainbow Passage	5.10	0.0981	333	4.90	5.29

Supplemental Material S32. Post hoc comparisons of health ratings between stimuli in male vocalizers in **online** condition.

Comparison							
Type of voice stimulus	Type of voice stimulus	Difference	SE	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}	
Single vowel	– Series of vowels	–0.4475	0.0610	–7.341	4919	< .001	
Single vowel	– Single word	–0.3348	0.0610	–5.493	4919	< .001	
Single vowel	– Counting	–0.6613	0.0610	–10.848	4919	< .001	
Single vowel	– Greeting	–0.7693	0.0610	–12.621	4919	< .001	
Single vowel	– Rainbow Passage	–0.6199	0.0610	–10.169	4919	< .001	
Series of vowels	– Single word	0.1126	0.0607	1.854	4918	.956	
Series of vowels	– Counting	–0.2138	0.0607	–3.519	4918	.007	
Series of vowels	– Greeting	–0.3218	0.0607	–5.298	4918	< .001	
Series of vowels	– Rainbow Passage	–0.1724	0.0607	–2.838	4918	.068	
Single word	– Counting	–0.3264	0.0607	–5.374	4918	< .001	
Single word	– Greeting	–0.4345	0.0607	–7.152	4918	< .001	
Single word	– Rainbow Passage	–0.2851	0.0607	–4.693	4918	< .001	
Counting	– Greeting	–0.1080	0.0607	–1.779	4918	1.000	
Counting	– Rainbow Passage	0.0414	0.0607	0.681	4918	1.000	
Greeting	– Rainbow Passage	0.1494	0.0607	2.460	4918	.209	

Male vocalizers health lab:

Supplemental Material S33. Estimated marginal means of health ratings across male vocalizers in **lab** condition.

Type of voice stimulus	<i>M</i>	<i>SE</i>	<i>df</i>	95% confidence interval	
				Lower	Upper
Single vowel	4.28	0.0819	435	4.11	4.44
Series of vowels	4.66	0.0819	435	4.50	4.82
Single word	4.62	0.0819	435	4.46	4.79
Counting	4.97	0.0819	435	4.81	5.13
Greeting	5.00	0.0819	435	4.84	5.16
Rainbow Passage	4.84	0.0819	435	4.68	5.00

Note. Estimated means are estimated keeping constant other effects in the model to the mean.

Supplemental Material S34. Post hoc comparisons of health ratings between stimuli in male vocalizers in **online** condition.

Comparison							
Type of voice stimulus	Type of voice stimulus	Difference	SE	<i>t</i>	<i>df</i>	<i>p</i> _{bonferroni}	
Single vowel	– Series of vowels	–0.3874	0.0518	–7.478	7323	< .001	
Single vowel	– Single word	–0.3492	0.0518	–6.741	7323	< .001	
Single vowel	– Counting	–0.6921	0.0518	–13.361	7323	< .001	
Single vowel	– Greeting	–0.7249	0.0518	–13.993	7323	< .001	
Single vowel	– Rainbow Passage	–0.5643	0.0518	–10.893	7323	< .001	
Series of vowels	– Single word	0.0382	0.0518	0.737	7323	1.000	
Series of vowels	– Counting	–0.3048	0.0518	–5.883	7323	< .001	
Series of vowels	– Greeting	–0.3375	0.0518	–6.515	7323	< .001	
Series of vowels	– Rainbow Passage	–0.1769	0.0518	–3.415	7323	.010	
Single word	– Counting	–0.3429	0.0518	–6.620	7323	< .001	
Single word	– Greeting	–0.3757	0.0518	–7.252	7323	< .001	
Single word	– Rainbow Passage	–0.2151	0.0518	–4.153	7323	< .001	
Counting	– Greeting	–0.0327	0.0518	–0.632	7323	1.000	
Counting	– Rainbow Passage	0.1278	0.0518	2.468	7323	.204	
greeting	– Rainbow Passage	0.1606	0.0518	3.099	7323	.029	

Supplemental Material S35. Pairs of strongest and weakest correlations among different stimulus types across all traits separately for male and female vocalizers.

Attractiveness	Weakest pair	Pearson’s <i>r</i>	Strongest pair	Pearson’s <i>r</i>
Females	Single words and Rainbow Passage	0.494	Counting and Rainbow Passage	0.857
Males	single vowels and greetings	0.319	greetings and Rainbow Passage	0.741
Dominance				
Females	single vowels and Rainbow Passage	0.355	a series of vowels and counting	0.696
Males	single vowels and greeting	0.386	counting and greeting	0.703
Likability				
Females	single vowels and counting	0.483	counting and Rainbow Passage	0.773
Males	single words and greeting	0.31	counting and Rainbow Passage	0.644
Trustworthiness				
Females	Single vowels and Rainbow Passage	0.262	single vowels and single words	0.634
Males	single words and counting	0.413	series of vowels and counting	0.664
Masculinity–Femininity				
Females	single vowels and greetings	0.33	counting and Rainbow Passage	0.749
Males	single words and Rainbow Passage	0.595	counting and Rainbow Passage	0.854
Health				
Females	single words and a series of vowels	0.355	counting and Rainbow Passage	0.671
Males	single vowels and Rainbow Passage	0.314	counting and greeting	0.742

Note. All analyses are conducted on a vocalizer–level. All *ps* < .001.