

Supplemental Material S2. Full model outputs.

Full model output for the effect of phonation, gender, and anchor term on listener ratings.

Table S2.1. Contrast coding for the effect of anchor term, gender, and phonation condition.

Variable	[,1]	[,2]	[,3]	[,4]
<i>Condition</i>				
Phonated	1			
Whispered	–1			
<i>Gender</i>				
Cismen	1	0		
Ciswomen	0	1		
Transfeminine	–1	–1		
<i>Anchor Term</i>				
Very Female/Very Male	–1	–1	–1	–1
Feminine/Masculine	1	0	0	0
Feminine Female/Masculine Male	0	1	0	0
Very Feminine/Not at all Feminine	0	0	1	0
Not at all Masculine/Very Masculine	0	0	0	1
<i>Vowel</i>				
Had	1	0	0	
Hid	0	1	0	
Hod	0	0	1	
Who’d	–1	–1	–1	
<i>Listener Gender</i>				
Female	1	0	0	
Male	0	1	0	
Gender Diverse	0	0	1	
Prefer not to answer	–1	–1	–1	

Table S2.2. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for the effect of anchor term, gender, and phonation condition.

Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Condition	3803	3803	1	28	13.15	.001	0.32
Gender	66007	33003	2	23	114.12	< .001	0.91
Anchor term	3984	996	4	104.3	3.44	.011	0.12
Vowel	40895	13632	3	18948.8	47.14	< .001	0.01
Condition: Gender	9135	4567	2	23	15.79	< .001	0.58
Gender: Anchor term	98890	12361	8	18945.1	42.74	< .001	0.02

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom.

Table S2.3. Summary output of linear mixed-effects model for the effects of anchor term, gender, and phonation condition.

Fixed Effects	Estimate	SE	DF	t-value	p-value
(Intercept)	55.700	1.728	25	32.232	< .001
Condition1	3.363	0.927	28	3.626	.001
Gender1	21.381	2.357	23	9.070	< .001
Gender2	-36.648	2.438	23	-15.031	< .001
Anchor term1	-1.234	0.722	104	-1.710	.090
Anchor term2	0.105	0.709	104	0.148	.883
Anchor term3	1.802	0.709	104	2.540	.013
Anchor term4	-1.752	0.735	104	-2.384	.019
Vowel1	-1.429	0.214	18957	-6.669	< .001
Vowel2	-1.346	0.212	18946	-6.343	< .001
Vowel3	2.030	0.212	18946	9.564	< .001
Condition1:Gender1	4.008	1.234	23	3.249	.004
Condition1:Gender2	-7.152	1.276	23	-5.605	< .001
Gender1:Anchor term1	-2.511	0.343	18945	-7.310	< .001
Gender2:Anchor term1	4.892	0.355	18945	13.770	< .001
Gender1:Anchor term2	2.976	0.338	18945	8.813	< .001
Gender2:Anchor term2	-4.792	0.349	18945	-13.722	< .001
Gender1:Anchor term3	0.574	0.337	18945	1.701	.089
Gender2:Anchor term3	-1.681	0.349	18945	-4.815	< .001
Gender1:Anchor term4	0.217	0.350	18945	0.620	.536
Gender2:Anchor term4	0.312	0.362	18945	0.862	.389
Random Effects	Type	Variance	SD		
	Listener (Intercept)	15.02	3.876		
	Condition1 (by-listener slope)	8.55	2.924		
	Speaker (Intercept)	64.78	8.049		
	Condition1 (by-talker slope)	17.49	4.182		

Abbreviations: SE = standard error; DF = degrees of freedom; SD = standard deviation.

Table S2.4. Summary output of the post-hoc pairwise comparisons for the main effects of vowel.

Contrast	Estimate	SE	DF	z-ratio	p-value
had - hid	-0.083	0.349	Inf	-0.237	.995
had - hod	-3.459	0.349	Inf	-9.921	< .001
had - who'd	-2.174	0.349	Inf	-6.236	< .001
hid - hod	-3.377	0.346	Inf	-9.753	< .001
hid - who'd	-2.092	0.346	Inf	-6.041	< .001
hod - who'd	1.285	0.346	Inf	3.711	.001

Abbreviations: SE = standard error; DF = degrees of freedom.

Table S2.5. Summary output of the post-hoc pairwise comparisons for the two-way interaction effects of condition by gender and gender by anchor term.

Contrast: Phonated - Whispered	Estimate	SE	DF	z-ratio	p-value
Cis men	14.740	3.040	Inf	4.849	< .001
Cis women	-7.580	3.240	Inf	-2.336	.020
Trans women	13.020	3.040	Inf	4.280	< .001

Abbreviations: SE = standard error; DF = degrees of freedom.

Table S2.6. Summary output of the post-hoc pairwise comparisons for the two-way interaction effects of gender by anchor term.

Contrast: Cis men	Estimate	SE	DF	z-ratio	p-value
Very Female/Very Male – Feminine/Masculine	–3.57	1.27	Inf	–2.804	.040
Very Female/Very Male – Feminine Female/Masculine Male	3.26	1.26	Inf	2.588	.073
Very Female/Very Male – Very Feminine/Not at all Feminine	2.55	1.26	Inf	2.028	.252
Very Female/Very Male – Not at all Masculine/Very Masculine	–1.36	1.29	Inf	–1.055	.829
Feminine/Masculine – Feminine Female/Masculine Male	–6.83	1.24	Inf	–5.492	< .001
Feminine/Masculine – Very Feminine/Not at all Feminine	–6.12	1.24	Inf	–4.925	< .001
Feminine/Masculine – Not at all Masculine/Very Masculine	–2.21	1.27	Inf	–1.736	.412
Feminine Female/Masculine Male – Very Feminine/ Not at all Feminine	0.71	1.23	Inf	0.574	.979
Feminine Female/Masculine Male – Not at all Masculine – Very Masculine	4.62	1.26	Inf	3.668	.002
Very Feminine/Not at all Feminine – Not at all Masculine/Very Masculine	3.91	1.26	Inf	3.108	.016
Contrast: Cis women	Estimate	SE	DF	z-ratio	p-value
Very Female/Very Male – Feminine/Masculine	1.31	1.30	Inf	1.010	.851
Very Female/Very Male – Feminine Female/Masculine Male	–7.04	1.28	Inf	–5.483	< .001
Very Female/Very Male – Very Feminine/Not at all Feminine	–2.23	1.28	Inf	–1.736	.412
Very Female/Very Male – Not at all Masculine/Very Masculine	–3.79	1.31	Inf	–2.885	.032
Feminine/Masculine – Feminine Female/Masculine Male	8.35	1.27	Inf	6.588	< .001
Feminine/Masculine – Very Feminine/Not at all Feminine	3.54	1.27	Inf	2.793	.042
Feminine/Masculine – Not at all Masculine/Very Masculine	5.10	1.30	Inf	3.931	.001
Feminine Female/Masculine Male – Very Feminine/ Not at all Feminine	–4.81	1.25	Inf	–3.841	.001
Feminine Female/Masculine Male – Not at all Masculine – Very Masculine	–3.25	1.28	Inf	–2.531	.084
Very Feminine/Not at all Feminine – Not at all Masculine/Very Masculine	1.56	1.28	Inf	1.217	.741
Contrast: Trans women	Estimate	SE	DF	z-ratio	p-value
Very Female/Very Male – Feminine/Masculine	–4.68	1.28	Inf	–3.668	.002
Very Female/Very Male – Feminine Female/ Masculine Male	0.86	1.26	Inf	0.677	.961
Very Female/Very Male – Very Feminine/Not at all Feminine	1.84	1.26	Inf	1.459	.589
Very Female/Very Male – Not at all Masculine/Very Masculine	–3.35	1.29	Inf	–2.591	.072
Feminine/Masculine – Feminine Female/Masculine Male	–5.54	1.25	Inf	–4.442	< .001
Feminine/Masculine – Very Feminine/Not at all Feminine	–6.52	1.25	Inf	–5.235	< .001
Feminine/Masculine – Not at all Masculine/Very Masculine	–1.34	1.28	Inf	–1.046	.834
Feminine Female/Masculine Male – Very Feminine/ Not at all Feminine	–0.99	1.23	Inf	–0.801	.930
Feminine Female/Masculine Male – Not at all Masculine – Very Masculine	4.20	1.26	Inf	3.329	.008
Very Feminine/Not at all Feminine – Not at all Masculine/Very Masculine	5.19	1.26	Inf	4.111	< .001

Abbreviations: SE = standard error; DF = degrees of freedom.

All full model outputs for the effect of token and speaker cues on listener ratings within condition, gender and anchor term.

Table S2.7. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for speaker and token effects on ratings of cis men in phonated speech.

Very Female/Very Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	1422	1422	1	20	13.102	.002	0.40
F2	458	458	1	269	4.223	.041	0.02
Duration	285	285	1	67	2.630	.110	0.04
CPPs	113	113	1	108	1.042	.310	0.00
Age	92	92	1	8	0.845	.384	0.09
Height	1317	1317	1	7	12.132	.011	0.64
Feminine/Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	1029	1029	1	75	9.699	.003	0.11
F2	235	235	1	465	2.218	.137	0.00
Duration	260	260	1	243	2.448	.119	0.00
CPPs	779	779	1	373	7.344	.007	0.02
Age	3	3	1	8	0.029	.870	0.00
Height	211	211	1	7	1.988	.200	0.22
Feminine Female/Masculine Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	1375	1375	1	142	14.178	< .001	0.09
F2	1087	1087	1	570	11.211	.001	0.02
Duration	440	440	1	378	4.532	.034	0.01
CPPs	496	496	1	514	5.114	.024	0.00
Age	7	7	1	8	0.067	.802	0.00
Height	692	692	1	8	7.132	.030	0.48
Very Feminine/Not at all Feminine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	524	524	1	244	5.026	.026	0.05
F2	1291	1291	1	939	12.374	< .001	0.00
Duration	429	429	1	634	4.113	.043	0.00
CPPs	286	286	1	862	2.740	.098	0.00
Age	1	1	1	7	0.006	.941	0.00
Height	217	217	1	7	2.078	.192	0.26
Not at all Masculine/Very Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	148	148	1	153	1.053	.306	0.00
F2	183	183	1	540	1.303	.254	0.00
Duration	0	0	1	382	0.000	.993	0.00
CPPs	807	807	1	499	5.752	.017	0.01
Age	5	5	1	7	0.032	.863	0.00
Height	105	105	1	7	0.751	.417	0.10

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom; Duration = h + vowel duration.

Table S2.8. Summary output of linear mixed-effects model for speaker and token effects on ratings of cis men in phonated speech.

Very Female/Very Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	85.059	2.105	22.892	40.418	< .001
Mean f_0	-2.437	0.673	19.703	-3.620	.002
F2	-1.132	0.551	269.044	-2.055	.041
Duration	-1.079	0.665	66.903	-1.622	.110
CPPs	-0.612	0.600	107.995	-1.021	.310
Age	0.873	0.950	8.197	0.919	.384
Height	3.100	0.890	6.684	3.483	.011
Random Effects	Type	Variance	SD		
	Listener (Intercept)	76.258	8.733		
	Speaker (Intercept)	3.571	1.890		
Feminine/Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	81.390	2.206	23.055	36.903	< .001
Mean f_0	-2.658	0.853	75.053	-3.114	.003
F2	-0.845	0.567	465.284	-1.489	.137
Duration	-1.152	0.737	242.615	-1.565	.119
CPPs	-1.733	0.640	373.309	-2.710	.007
Age	0.276	1.636	7.821	0.169	.870
Height	2.253	1.598	7.178	1.410	.200
Random Effects	Type	Variance	SD		
	Listener (Intercept)	59.930	7.741		
	Speaker (Intercept)	14.820	3.850		
Feminine Female/Masculine Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	86.557	1.825	10.651	47.423	< .001
Mean f_0	-3.182	0.845	142.123	-3.765	< .001
F2	-1.802	0.538	570.179	-3.348	.001
Duration	-1.507	0.708	378.397	-2.129	.034
CPPs	-1.378	0.609	513.999	-2.261	.024
Age	0.492	1.902	8.071	0.259	.802
Height	5.000	1.872	7.613	2.671	.030
Random Effects	Type	Variance	SD		
	Listener (Intercept)	12.400	3.522		
	Speaker (Intercept)	21.04	4.587		
Very Feminine/Not at all Feminine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	86.987	2.025	16.304	42.968	< .001
Mean f_0	-1.571	0.701	244.099	-2.242	.026
F2	-1.529	0.435	939.213	-3.518	< .001
Duration	-1.168	0.576	634.315	-2.028	.043
CPPs	-0.816	0.493	861.731	-1.655	.098
Age	0.141	1.837	7.491	0.077	.941
Height	2.619	1.817	7.188	1.441	.192
Random Effects	Type	Variance	SD		
	Listener (Intercept)	55.000	7.416		
	Speaker (Intercept)	20.19	4.493		
Not at all Masculine/Very Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	81.823	2.860	14.269	28.610	< .001
Mean f_0	-1.112	1.084	153.336	-1.026	.306
F2	-0.779	0.682	540.071	-1.142	.254

Duration	0.008	0.900	381.676	0.009	.993
CPPs	-1.854	0.773	498.781	-2.398	.017
Age	-0.465	2.592	6.918	-0.179	.863
Height	2.216	2.558	6.576	0.867	.417
Random Effects	Type	Variance	SD		
	Listener (Intercept)	60.240	7.762		
	Speaker (Intercept)	39.580	6.292		

Abbreviations: *SE* = standard error; *DF* = degrees of freedom; Duration = *h* + vowel duration.

Table S2.9. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for speaker and token effects on ratings of cis men in whispered speech.

Very Female/Very Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	<i>F</i> -value	<i>p</i> -value	η^2_p
F2	19	19	1	602	0.050	.823	0.00
Duration	1236	1236	1	259	3.337	.069	0.01
Age	655	655	1	7	1.769	.226	0.20
Height	7320	7320	1	8	19.760	.002	0.72
Feminine/Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	<i>F</i> -value	<i>p</i> -value	η^2_p
F2	6	6	1	649	0.020	.887	0.00
Duration	1886	1886	1	486	6.630	.010	0.01
Age	0	0	1	7	0.001	.977	0.00
Height	3824	3824	1	8	13.442	.007	0.63
Feminine Female/Masculine Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	<i>F</i> -value	<i>p</i> -value	η^2_p
F2	493	493	1	681	1.412	.235	0.00
Duration	1625	1625	1	613	4.649	.031	0.00
Age	145	145	1	8	0.415	.538	0.05
Height	4476	4476	1	8	12.808	.007	0.62
Very Feminine/Not at all Feminine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	<i>F</i> -value	<i>p</i> -value	η^2_p
F2	851	851	1	1146	2.317	.128	0.00
Duration	3828	3828	1	970	10.417	.001	0.02
Age	30	30	1	8	0.081	.783	0.04
Height	5262	5262	1	8	14.322	.005	0.74
Not at all Masculine/Very Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	<i>F</i> -value	<i>p</i> -value	η^2_p
F2	59	59	1	621	0.191	.663	0.00
Duration	1666	1666	1	568	5.377	.021	0.00
Age	30	30	1	8	0.097	.763	0.01
Height	3926	3926	1	8	12.668	.007	0.61

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom; Duration = *h* + vowel duration.

Table S2.10. Summary output of linear mixed-effects model for speaker and token effects on ratings of cis men in whispered speech.

Very Female/Very Male					
Fixed Effects	Estimate	<i>SE</i>	<i>DF</i>	<i>t</i> -value	<i>p</i> -value
Intercept	68.594	3.459	23.698	19.830	< .001
F2	-0.208	0.929	602.242	-0.223	.823
Duration	2.541	1.391	259.236	1.827	.069
Age	2.794	2.101	6.901	1.330	.226
Height	68.594	3.459	23.698	19.830	< .001

Random Effects	Type	Variance	SD		
	Listener (Intercept)	170.840	13.070		
	Speaker (Intercept)	22.760	4.771		
Feminine/Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	63.865	3.079	18.875	20.740	< .001
F2	−0.114	0.802	649.285	−0.143	.887
Duration	3.174	1.233	486.388	2.575	.010
Age	0.077	2.520	7.236	0.030	.977
Height	9.400	2.564	7.734	3.666	.007
Random Effects	Type	Variance	SD		
	Listener (Intercept)	94.570	9.725		
	Speaker (Intercept)	36.440	6.036		
Feminine Female/Masculine Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	74.362	3.282	9.976	22.661	< .001
F2	−1.034	0.870	681.014	−1.188	.235
Duration	2.913	1.351	613.113	2.156	.031
Age	2.209	3.430	7.651	0.644	.538
Height	12.433	3.474	7.996	3.579	.007
Random Effects	Type	Variance	SD		
	Listener (Intercept)	33.010	5.745		
	Speaker (Intercept)	70.160	8.376		
Very Feminine/Not at all Feminine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	69.871	3.001	13.710	23.284	< .001
F2	−1.047	0.688	1146.383	−1.522	.128
Duration	3.457	1.071	969.677	3.228	.001
Age	0.820	2.881	7.639	0.285	.783
Height	11.016	2.911	7.951	3.784	.005
Random Effects	Type	Variance	SD		
	Listener (Intercept)	91.220	9.551		
	Speaker (Intercept)	49.830	7.059		
Not at all Masculine/Very Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	69.633	3.139	8.757	22.186	< .001
F2	−0.375	0.859	620.784	−0.437	.663
Duration	3.096	1.335	567.766	2.319	.021
Age	1.061	3.398	7.631	0.312	.763
Height	12.237	3.438	7.978	3.559	.007
Random Effects	Type	Variance	SD		
	Listener (Intercept)	15.290	3.911		
	Speaker (Intercept)	68.820	8.296		

Abbreviations: SE = standard error; DF = degrees of freedom; Duration = *h* + vowel duration.

Table S2.11. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for speaker and token effects on ratings of cis women in phonated speech.

Very Female/Very Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	185	185	1	538	0.954	.329	0.00
F2	36	36	1	538	0.186	.667	0.00
Duration	238	238	1	538	1.226	.269	0.00
CPPs	3403	3403	1	538	17.557	< .001	0.03
Age	3427	3427	1	538	17.682	< .001	0.03
Height	561	561	1	538	2.896	.089	0.00
Feminine/Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	639	639	1	566	5.311	.022	0.00
F2	337	337	1	566	2.796	.095	0.00
Duration	345	345	1	566	2.866	.091	0.00
CPPs	1099	1099	1	566	9.128	.003	0.02
Age	2675	2675	1	566	22.220	< .001	0.04
Height	579	579	1	566	4.808	.029	0.00
Feminine Female/Masculine Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	1010	1010	1	593	6.907	.009	0.01
F2	1599	1599	1	593	10.934	.001	0.02
Duration	557	557	1	593	3.810	.051	0.00
CPPs	3409	3409	1	593	23.306	< .001	0.04
Age	5852	5852	1	593	40.012	< .001	0.06
Height	1114	1114	1	593	7.620	.006	0.01
Very Feminine/Not at all Feminine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	1200	1200	1	594	10.753	.001	0.02
F2	965	965	1	594	8.644	.003	0.01
Duration	501	501	1	594	4.488	.035	0.00
CPPs	927	927	1	594	8.307	.004	0.01
Age	1954	1954	1	594	17.500	< .001	0.03
Height	170	170	1	594	1.524	.218	0.00
Not at all Masculine/Very Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	847	847	1	24	8.120	.009	0.25
F2	1797	1797	1	192	17.216	< .001	0.08
Duration	2192	2192	1	37	21.004	< .001	0.36
CPPs	130	130	1	33	1.247	.272	0.04
Age	189	189	1	6	1.808	.227	0.23
Height	175	175	1	4	1.679	.262	0.29

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom; Duration = h + vowel duration.

Table S2.12. Summary output of linear mixed-effects model for speaker and token effects on ratings of cis women in phonated speech.

Very Female/Very Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	16.372	2.351	19.973	6.965	< .001
Mean f_0	-0.724	0.742	537.973	-0.977	.329
F2	-0.309	0.718	537.978	-0.431	.667
Duration	-0.914	0.825	537.977	-1.107	.269
CPPs	-3.768	0.899	537.991	-4.190	< .001
Age	4.087	0.972	537.974	4.205	< .001
Height	1.201	0.706	537.987	1.702	.089
Random Effects	Type	Variance	SD		
	Listener (Intercept)	13.600	10.180		
	Speaker (Intercept)	0.000	0.000		
Feminine/Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	19.262	2.222	20.9996	8.669	< .001
Mean f_0	-1.312	0.569	566.0004	-2.304	.022
F2	-0.923	0.552	566.0129	-1.672	.095
Duration	-1.074	0.634	566.0014	-1.693	.091
CPPs	-2.090	0.692	566.0012	-3.021	.003
Age	3.519	0.747	565.9996	4.714	< .001
Height	1.187	0.541	566.0004	2.193	.029
Random Effects	Type	Variance	SD		
	Listener (Intercept)	99.373	9.969		
	Speaker (Intercept)	0.000	0.000		
Feminine Female/Masculine Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	11.324	1.210	21.957	9.363	< .001
Mean f_0	-1.613	0.614	592.960	-2.628	.009
F2	-1.965	0.594	592.959	-3.307	.001
Duration	-1.332	0.683	592.957	-1.952	.051
CPPs	-3.596	0.745	592.958	-4.828	< .001
Age	5.088	0.804	592.959	6.325	< .001
Height	1.611	0.584	592.970	2.760	.006
Random Effects	Type	Variance	SD		
	Listener (Intercept)	26.950	5.191		
	Speaker (Intercept)	0.000	0.000		
Very Feminine/Not at all Feminine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	14.231	2.274	22.000	6.258	< .001
Mean f_0	-1.757	0.536	594.000	-3.279	.001
F2	-1.525	0.519	594.000	-2.940	.003
Duration	-1.262	0.596	594.000	-2.118	.035
CPPs	-1.874	0.650	594.000	-2.882	.004
Age	2.937	0.702	594.000	4.183	< .001
Height	-0.629	0.509	594.000	-1.234	.218
Random Effects	Type	Variance	SD		
	Listener (Intercept)	109.800	10.48		
	Speaker (Intercept)	0.000	0.000		
Not at all Masculine/Very Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	15.220	2.611	21.191	5.830	< .001
Mean f_0	-2.725	0.956	24.185	-2.849	.009
F2	-2.613	0.630	191.574	-4.149	< .001

Duration	−4.825	1.053	37.237	−4.583	< .001
CPPs	−1.232	1.103	32.895	−1.117	.272
Age	2.008	1.493	6.071	1.345	.227
Height	1.705	1.316	4.190	1.296	.262
Random Effects		Type	Variance	SD	
		Listener (Intercept)	105.092	3.101	
		Speaker (Intercept)	9.614	3.101	

Abbreviations: *SE* = standard error; *DF* = degrees of freedom.

Table S2.13. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for speaker and token effects on ratings of cis women in whispered speech.

Very Female/Very Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	920	920	1	537	2.573	.109	0.00
Duration	59	59	1	461	0.165	.685	0.00
Age	342	342	1	7	0.957	.360	0.08
Height	209	209	1	7	0.584	.471	0.12
Feminine/Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	887	887	1	566	4.972	.026	0.00
Duration	239	239	1	528	1.337	.248	0.00
Age	97	97	1	7	0.541	.486	0.07
Height	187	187	1	7	1.046	.343	0.14
Feminine Female/Masculine Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	901	901	1	593	2.692	.101	0.00
Duration	2167	2167	1	535	6.479	.011	0.01
Age	157	157	1	7	0.470	.514	0.06
Height	147	147	1	7	0.439	.529	0.06
Very Feminine/Not at all Feminine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	2165	2165	1	594	8.207	.004	0.01
Duration	168	168	1	563	0.636	.426	0.00
Age	52	52	1	7	0.198	.670	0.03
Height	266	266	1	7	1.009	.351	0.13
Not at all Masculine/Very Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	1073	1073	1	540	6.742	.010	0.01
Duration	55	55	1	530	0.346	.557	0.00
Age	51	51	1	7	0.321	.589	0.01
Height	13	13	1	7	0.083	.782	0.05

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom; Duration = *h* + vowel duration.

Table S2.14. Summary output of linear mixed-effects model for speaker and token effects on ratings of cis women in whispered speech.

Very Female/Very Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	26.365	3.381	23.229	7.798	< .001
F2	−1.589	0.991	537.112	−1.604	.109
Duration	−0.452	1.115	460.739	−0.406	.685
Age	−1.813	1.854	7.155	−0.978	.360
Height	−1.385	1.812	6.610	−0.764	.471

Random Effects	Type	Variance	SD		
	Listener (Intercept)	165.460	12.863		
	Speaker (Intercept)	357.650	18.912		
Feminine/Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	24.833	2.909	25.003	8.538	< .001
F2	-1.528	0.685	566.285	-2.230	.026
Duration	0.897	0.775	528.441	1.156	.248
Age	-1.121	1.524	6.896	-0.735	.486
Height	-1.536	1.502	6.506	-1.023	.343
Random Effects	Type	Variance	SD		
	Listener (Intercept)	132.070	11.492		
	Speaker (Intercept)	13.070	3.615		
Feminine Female/Masculine Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	18.027	2.467	17.114	7.307	< .001
F2	-1.504	0.916	593.185	-1.641	.101
Duration	2.634	1.035	534.709	2.545	.011
Age	-1.294	1.888	7.387	-0.685	.514
Height	-1.228	1.853	6.906	-0.662	.529
Random Effects	Type	Variance	SD		
	Listener (Intercept)	61.210	7.824		
	Speaker (Intercept)	19.330	4.396		
Very Feminine/Not at all Feminine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	24.645	3.533	25.775	6.976	< .001
F2	-2.330	0.813	594.424	-2.865	.004
Duration	0.735	0.922	563.380	0.797	.426
Age	-0.857	1.925	6.843	-0.445	.670
Height	-1.909	1.900	6.498	-1.005	.351
Random Effects	Type	Variance	SD		
	Listener (Intercept)	197.960	14.070		
	Speaker (Intercept)	21.370	4.623		
Not at all Masculine/Very Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	20.368	2.772	22.322	7.348	< .001
F2	-1.723	0.663	540.037	-2.597	.010
Duration	0.443	0.754	530.221	0.588	.557
Age	-0.508	1.770	6.966	-0.287	.782
Height	-0.992	1.751	6.685	-0.567	.589
Random Effects	Type	Variance	SD		
	Listener (Intercept)	94.45	9.719		
	Speaker (Intercept)	18.740	4.329		

Abbreviations: SE = standard error; DF = degrees of freedom; Duration = *h* + vowel duration.

Table S2.15. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for speaker and token effects on ratings of transfeminine speakers in phonated speech.

Very Female/Very Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	1333	1333	1	363	6.852	.009	0.02
F2	83	83	1	375	0.427	.514	0.00
Duration	293	293	1	107	1.509	.222	0.01
CPPs	0	0	1	15	0.000	.999	0.00
Age	878	878	1	10	4.514	.059	0.31
Height	3134	3134	1	11	16.115	.002	0.60
Feminine/Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	2541	2541	1	415	18.106	< .001	0.04
F2	472	472	1	518	3.362	.067	0.00
Duration	765	765	1	227	5.452	.020	0.02
CPPs	8	8	1	21	0.060	.809	0.00
Age	92	92	1	9	0.658	.438	0.07
Height	1738	1738	1	9	12.381	.006	0.58
Feminine Female/Masculine Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	4277	4277	1	495	31.857	< .001	0.06
F2	629	629	1	634	4.683	.031	0.00
Duration	205	205	1	440	1.527	.217	0.00
CPPs	76	76	1	37	0.569	.456	0.02
Age	174	174	1	7	1.294	.292	0.15
Height	1832	1832	1	7	13.648	.008	0.67
Very Feminine/Not at all Feminine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	2714	2714	1	749	16.106	< .001	0.07
F2	2873	2873	1	1057	17.047	< .001	0.02
Duration	1880	1880	1	738	11.157	.001	0.04
CPPs	158	158	1	54	0.939	.337	0.14
Age	222	222	1	7	1.320	.291	0.42
Height	1682	1682	1	6	9.981	.019	0.73
Not at all Masculine/Very Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
Mean f_0	3421	3421	1	313	18.514	< .001	0.06
F2	327	327	1	486	1.769	.184	0.00
Duration	536	536	1	188	2.901	.090	0.02
CPPs	185	185	1	12	1.000	.338	0.08
Age	307	307	1	4	1.663	.271	0.31
Height	1951	1951	1	4	10.558	.036	0.74

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom; Duration = h + vowel duration.

Table S2.16. Summary output of linear mixed-effects model for speaker and token effects on ratings of trans feminine speakers in phonated speech.

Very Female/Very Male					
Fixed Effects	Estimate	<i>SE</i>	<i>DF</i>	<i>t</i> -value	<i>p</i> -value
Intercept	79.081	2.005	20.993	39.435	< .001
Mean <i>f</i> ₀	−1.621	0.619	362.746	−2.618	.009
F2	−0.474	0.725	375.191	−0.653	.514
Duration	−1.054	0.858	106.975	−1.228	.222
CPPs	−0.002	0.849	14.652	−0.002	.999
Age	−2.262	1.065	10.257	−2.125	.059
Height	4.121	1.027	10.726	4.014	.002
Random Effects	Type	Variance	<i>SD</i>		
	Listener (Intercept)	69.838	8.357		
	Speaker (Intercept)	1.709	1.311		
Feminine/Masculine					
Fixed Effects	Estimate	<i>SE</i>	<i>DF</i>	<i>t</i> -value	<i>p</i> -value
Intercept	74.599	1.831	23.770	40.733	< .001
Mean <i>f</i> ₀	−2.250	0.529	414.759	−4.255	< .001
F2	−1.130	0.616	518.021	−1.834	.067
Duration	−1.767	0.757	226.924	−2.335	.020
CPPs	−0.211	0.861	20.659	−0.245	.809
Age	−0.937	1.154	9.157	−0.811	.438
Height	3.903	1.109	9.145	3.519	.006
Random Effects	Type	Variance	<i>SD</i>		
	Listener (Intercept)	55.807	7.470		
	Speaker (Intercept)	3.835	1.958		
Feminine Female/Masculine Male					
Fixed Effects	Estimate	<i>SE</i>	<i>DF</i>	<i>t</i> -value	<i>p</i> -value
Intercept	78.965	1.392	9.661	56.726	< .001
Mean <i>f</i> ₀	−2.938	0.521	495.176	−5.644	< .001
F2	−1.296	0.599	633.882	−2.164	.031
Duration	−0.933	0.755	439.815	−1.236	.217
CPPs	0.747	0.991	36.513	0.754	.456
Age	−1.762	1.549	7.128	−1.138	.292
Height	5.533	1.498	6.670	3.694	.008
Random Effects	Type	Variance	<i>SD</i>		
	Listener (Intercept)	11.84	3.441		
	Speaker (Intercept)	9.60	3.098		
Very Feminine/Not at all Feminine					
Fixed Effects	Estimate	<i>SE</i>	<i>DF</i>	<i>t</i> -value	<i>p</i> -value
Intercept	80.044	2.032	26.605	39.399	< .001
Mean <i>f</i> ₀	−1.823	0.454	748.909	−4.013	< .001
F2	−2.145	0.520	1056.877	−4.129	< .001
Duration	−2.201	0.659	737.855	−3.340	.001
CPPs	0.881	0.910	53.690	0.969	.337
Age	−1.792	1.559	6.590	−1.149	.291
Height	4.791	1.517	6.098	3.159	.019
Random Effects	Type	Variance	<i>SD</i>		
	Listener (Intercept)	98.000	9.899		
	Speaker (Intercept)	10.640	3.262		
Not at all Masculine/Very Masculine					
Fixed Effects	Estimate	<i>SE</i>	<i>DF</i>	<i>t</i> -value	<i>p</i> -value
Intercept	74.605	2.243	16.928	33.258	< .001
Mean <i>f</i> ₀	−2.712	0.630	312.931	−4.303	< .001
F2	−0.972	0.731	486.089	−1.330	.184

Duration	-1.548	0.909	188.466	-1.703	.090
CPPs	1.104	1.105	11.690	1.000	.338
Age	-2.017	1.564	3.757	-1.289	.271
Height	4.889	1.505	3.632	3.249	.036
Random Effects	Type	Variance	SD		
	Listener (Intercept)	73.766	8.589		
	Speaker (Intercept)	8.343	2.883		

Abbreviations: *SE* = standard error; *DF* = degrees of freedom; Duration = *h* + vowel duration.

Table S2.17. ANOVA table for linear mixed-effects model (with Satterthwaite approximation for degrees of freedom) for speaker and token effects on ratings of transfeminine speakers in whispered speech.

Very Female/Very Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	1734	1734	1	615	4.127	.043	0.00
Duration	1701	1701	1	341	4.048	.045	0.01
Age	976	976	1	8	2.323	.168	0.24
Height	3709	3709	1	8	8.830	.019	0.54
Feminine/Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	1333	1333	1	652	4.421	.036	0.00
Duration	2607	2607	1	578	8.650	.003	0.01
Age	641	641	1	8	2.125	.184	0.22
Height	2160	2160	1	8	7.166	.029	0.48
Feminine Female/Masculine Male							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	1373	1373	1	680	3.212	.074	0.00
Duration	1557	1557	1	592	3.641	.057	0.00
Age	1470	1470	1	8	3.439	.101	0.30
Height	4752	4752	1	8	11.114	.011	0.59
Very Feminine/Not at all Feminine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	7363	7363	1	1145	17.199	< .001	0.01
Duration	1831	1831	1	879	4.276	.039	0.00
Age	1262	1262	1	8	2.947	.125	0.27
Height	4394	4394	1	8	10.263	.013	0.56
Not at all Masculine/Very Masculine							
Variable	Sum Sq	Mean Sq	NumDF	DenDF	F-value	p-value	η^2_p
F2	2865	2865	1	620	8.116	.005	0.01
Duration	4689	4689	1	571	13.285	< .001	0.02
Age	698	698	1	8	1.979	.198	0.20
Height	2987	2987	1	8	8.463	.020	0.52

Abbreviations: Sq = squared; NumDF = numerator, degrees of freedom; DenDF = denominator, degrees of freedom; Duration = *h* + vowel duration.

Table S2.18. Summary output of linear mixed-effects model for speaker and token effects on ratings of transfeminine speakers in whispered speech.

Very Female/Very Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	64.846	3.906	17.444	16.603	< .001
F2	-1.980	0.975	615.097	-2.031	.043
Duration	-2.832	1.408	341.025	-2.012	.045
Age	-5.369	3.522	7.528	-1.524	.168
Height	10.472	3.524	7.554	2.971	.019

Random Effects	Type	Variance	SD		
	Listener (Intercept)	127.400	11.288		
	Speaker (Intercept)	65.800	8.112		
Feminine/Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	58.741	4.142	10.959	14.184	< .001
F2	-1.703	0.810	651.800	-2.103	.036
Duration	-3.535	1.202	578.391	-2.941	.003
Age	-6.478	4.444	7.749	-1.458	.184
Height	11.900	4.445	7.761	2.677	.029
Random Effects	Type	Variance	SD		
	Listener (Intercept)	61.900	7.867		
	Speaker (Intercept)	110.000	10.490		
Feminine Female/Masculine Male					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	67.403	4.484	9.247	15.031	< .001
F2	-1.694	0.945	680.138	-1.792	.074
Duration	-2.666	1.397	591.901	-1.908	.057
Age	-9.384	5.060	7.864	-1.854	.101
Height	16.891	5.067	7.876	3.334	.011
Random Effects	Type	Variance	SD		
	Listener (Intercept)	36.950	6.079		
	Speaker (Intercept)	142.550	11.393		
Very Feminine/Not at all Feminine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	65.058	3.635	10.939	17.897	< .001
F2	-3.015	0.727	1145.356	-4.147	< .001
Duration	-2.229	1.078	878.995	-2.068	.039
Age	-6.736	3.924	7.835	-1.717	.125
Height	12.576	3.925	7.848	3.204	.013
Random Effects	Type	Variance	SD		
	Listener (Intercept)	78.870	8.881		
	Speaker (Intercept)	85.770	9.261		
Not at all Masculine/Very Masculine					
Fixed Effects	Estimate	SE	DF	t-value	p-value
Intercept	63.114	4.511	8.390	13.993	< .001
F2	-2.561	0.899	620.416	-2.849	.005
Duration	-4.870	1.336	571.134	-3.645	< .001
Age	-7.326	5.208	7.777	-1.407	.198
Height	15.156	5.210	7.788	2.909	.020
Random Effects	Type	Variance	SD		
	Listener (Intercept)	16.560	4.069		
	Speaker (Intercept)	151.72	12.318		

Abbreviations: SE = standard error; DF = degrees of freedom; Duration = *h* + vowel duration.