

Supplementary Table 1. Effect sizes for the analyses of syllable structure, timing, and sequencing. Given the repeated-measures nature of the experimental design, we use a variant of Cohen's *d* ("dr"), which uses the standard deviation of the residuals as the denominator (Rouder et al., 2012).

<i>SONG FEATURE</i>	<i>median</i>		<i>variability</i>	
	<i>MUSC</i>	<i>BMI</i>	<i>MUSC</i>	<i>BMI</i>
<i>Duration</i>	0.017	0.904	0.499	0.063
<i>Mean frequency</i>	0.700	0.545	0.559	0.562
<i>Amplitude</i>	0.597	0.788	0.423	0.662
<i>Spectral entropy</i>	0.295	0.310	0.429	0.032
<i>Spectrotemporal entropy</i>	0.463	0.226	0.393	0.156
<i>Entropy of the amplitude envelope</i>	0.587	0.339	0.177	0.312
<i>FF of syllables with flat harmonic structure</i>	0.088	1.003	0.614	0.667
<i>Sequence duration of motifs</i>	0.854	0.568	0.970	0.355
<i>Syllable durations within motifs</i>	0.428	1.192	0.231	0.392
<i>Gap durations within motifs</i>	0.455	0.370	0.261	0.095
<i>Song durations</i>	0.345	2.102	0.400	1.810
<i>Introductory note repetitions</i>	0.134	1.109	1.106	1.901
<i>Sequence variability at branch points</i>			0.823	1.045

Rouder, J.N., Morey, R.D., Speckman, P.L. and Province, J.M., 2012. Default Bayes factors for ANOVA designs. *Journal of Mathematical Psychology*, 56(5), pp.356-374.