

Supplementary Table S1. Principal component analysis of 26 acoustic features measured from 5,349 syllables of the songs of 43 zebra finches (Z) used for syllable type identification. Table shows variance explained, cumulative variance explained and loadings of each acoustic feature for principal components one through six. Descriptions of acoustic features are provided in references cited in the Methods. (Q25: 25th quartile; Q75: 75th quartile; IQR: inter-quartile range; DF: dominant frequency)

	<i>Principal Component</i>					
	1	2	3	4	5	6
<i>Variance explained</i>	30.82%	17.72%	15.90%	8.24%	6.39%	5.06%
<i>Cumulative var. explained</i>	30.82%	48.54%	64.43%	72.67%	79.06%	84.12%
duration	0.7133	-0.5047	-0.4298	0.0072	-0.0156	0.0510
mean frequency	0.6345	0.6763	-0.2353	-0.0664	0.1171	-0.0796
standard deviation	0.5323	0.2176	0.5401	-0.3726	0.2366	0.3343
median frequency	0.5650	0.6862	-0.2436	-0.0608	0.0867	-0.1298
frequency Q25	0.3098	0.5278	-0.5971	0.2246	-0.0569	-0.2764
frequency Q75	0.6826	0.6026	0.0625	-0.2241	0.2084	0.0999
frequency IQR	0.5107	0.2636	0.5075	-0.4080	0.2675	0.3117
time median	0.6393	-0.5465	-0.4387	0.0230	0.0667	0.0560
time Q25	0.5508	-0.5376	-0.3625	0.0014	0.1333	-0.0251
time Q75	0.6891	-0.5472	-0.4393	0.0412	0.0062	0.0859
time IQR	0.6575	-0.4546	-0.4115	0.0606	-0.0803	0.1450
skew	-0.5354	-0.0716	-0.5786	-0.3826	0.2937	0.1930
kurtosis	-0.4694	-0.0984	-0.5085	-0.4009	0.3151	0.2482
spectral entropy	0.7254	-0.1337	0.4996	0.2971	-0.1784	0.0334
time entropy	-0.5652	0.4358	0.2010	-0.0368	0.0575	0.0808
entropy	0.5210	0.0594	0.6401	0.3084	-0.1693	0.0710
spectral flatness	0.6719	-0.1207	0.5759	0.1858	-0.0763	0.1101
mean DF	0.3625	0.6982	-0.4609	0.1776	-0.0818	-0.0567
minimum DF	-0.3410	0.4160	-0.2631	0.4757	-0.0201	0.5088
maximum DF	0.7630	0.3360	-0.0976	-0.2058	0.0822	0.0187
DF range	0.7603	0.0107	0.0783	-0.4247	0.0724	-0.2774
modulation index	0.7069	-0.2710	-0.1010	0.1273	-0.0203	0.2146
start DF	0.0592	0.3437	-0.3697	-0.0521	-0.5846	0.5061
end DF	0.0047	0.2208	-0.1588	0.6388	0.4539	0.3263
DF slope	0.0137	-0.1455	0.1632	0.5105	0.7812	-0.1566
mean peak frequency	0.2665	0.5432	-0.3415	0.1643	-0.0721	-0.2576