

Appendix 8

Principal Component Analysis factor loadings for each of the four components with eigenvalues >1. Loadings greater than 0.60 were considered salient to a factor, resulting in four variables with high factor loadings in PC1 (bolded): full song duration, number of syllables, and bandwidth. PC1 was the only component that was significantly different between males and females (t-test p-value < 0.001). Duration and number of syllables are clearly correlated, and longer songs with greater numbers of syllables are also stochastically more likely to span a broader bandwidth. The results of this PCA provide further support for the removal of number of syllables from the final analysis in order to avoid redundancy. Furthermore, given that PC1 only explained 34.8% of the between-sex variation, it may be that some acoustic differences between sexes may be subtle and distributed across numerous variables. The remaining PCs are not easily interpretable based on the factor loadings for each variable. It is possible that other dimensions of song analysis would reveal other differences.

Song Characteristics	PC1	PC2	PC3	PC4
Full song duration (s)	0.919	<0.100	0.185	<0.100
Syllable duration (ms)	-0.249	0.743	0.420	<0.100
Syllable rate (syl/sec)	-0.265	<0.100	-0.905	<0.100
Number of syllables	0.934	-0.140	<0.100	<0.100
Minimum frequency (Hz)	<0.100	-0.107	<0.100	0.954
Maximum frequency (Hz)	0.526	0.278	0.274	0.677
Bandwidth (Hz)	0.648	0.386	0.331	<0.100
Peak freq. contour – number of inflection points	0.139	0.865	0.190	<0.100

% Pause	<0.100	-0.829	0.422	<0.100
Percent variance explained	34.82	24.45	14.27	11.35
