Table 1: PhylANOVA results for all song traits when birds are divided into species with adult song stability or adult song plasticity. Song traits are sorted from most to least significant. Song-Stable and Song-Plastic columns show means. Corrected α indicates the threshold for significance with the Holm-Bonferroni correction. * denotes traits with significantly different groups.

Song Trait	Song-Stable	Song-Plastic	F-Value	Corrected α	p-Value
Syllable Rep	1.8807	3.946	41.5064	0.0071	<0.001*
Song Rep	1.1055	3.8688	33.8334	0.0083	<0.001*
Syll Song	1.2556	2.2962	9.2658	0.01	0.094
Duration	0.7736	1.2927	2.0783	0.0125	0.42
Continuity	-1.3453	-1.0286	2.1537	0.0167	0.474
Interval	1.6075	1.218	1.3879	0.025	0.567
Song Rate	1.8969	2.0971	0.6079	0.05	0.713

Table 2: PhylANOVA results for all song traits when birds are divided into early song stablility, delayed song stablility, and song plasticity. Song traits are sorted from most to least significant. Early, Delayed, and Plastic columns show means. Corrected α indicates the threshold for significance with the Holm-Bonferroni correction. * denotes traits with significantly different groups.

Song Trait	Early	Delayed	Plastic	F-Value	Corrected α	p-Value
Syllable Rep	1.6436	2.0062	3.946	17.1099	0.0071	0.003*
Song Rep	0.6788	1.4819	3.8688	12.88	0.0083	0.011*
Syll Song	1.2852	1.2467	2.2962	3.6877	0.01	0.252

Table 3: Post-hoc pairwise phylANOVA tests for significant song traits when birds are divided into early song stablility, delayed song stablility, and song plasticity. * denotes traits with significantly different groups.

Song Trait	State 1	State 2	T-Value	p-Value
Syllable Rep	Plastic	Delayed	4.8995	0.012*
Syllable Rep	Early	Plastic	4.6091	0.003*
Syllable Rep	Early	Delayed	0.6872	0.659
Song Rep	Plastic	Delayed	4.0268	0.044*
Song Rep	Early	Plastic	4.3074	0.015*
Song Rep	Early	Delayed	1.0444	0.55

Table 4: Results of PGLS analysis between song characteristics and continuous song stability. Test performed on the natural log scale values of song characteristics. λ is the value by which off-diagonal elements in the Brownian motion model are multiplied to make the correlation structure. Corrected α indicates the threshold for significance with the Holm-Bonferroni correction. Song traits are sorted from most to least significant. * denotes significant slopes.

Song Trait	Slope	Std Error	λ	T-Value	Corrected α	p-Value
Syllable Rep	0.9067	0.2449	0.8913	3.7021	0.0071	<0.001*
Song Rep	1.1013	0.3123	0.8316	3.5263	0.0083	<0.001*
Syll Song	0.3701	0.2224	0.4699	1.6642	0.01	0.1029
Interval	0.4221	0.2646	0.8823	1.5953	0.0125	0.1215
Continuity	-0.2135	0.1439	0.8832	-1.4838	0.0167	0.1486
Duration	0.3702	0.2569	1.0163	1.441	0.025	0.1578
Song Rate	-0.2113	0.25	0.7307	-0.8453	0.05	0.4048

Table 5: Brownie results for song traits when birds are divided into species with adult song stability or adult song plasticity. For Tables 5-9, rate columns show mean log likelihood. Song traits are sorted from most to least significant. * denotes traits where themore complex model fit the data significantly better than the simplier model.

Song Trait	One Rate	Two Rates	p-Value
Syll Song	-110.6482	-100.7673	<0.001*
Song Rate	-43.4397	-38.4938	0.002*
Interval	-45.2842	-40.5004	0.002*
Duration	-71.2042	-66.3122	0.002*
Continuity	-25.6471	-24.7285	0.175
Syllable Rep	-120.2983	-120.0695	0.499
Song Rep	-113.5829	-113.3706	0.515

Table 6: Brownie results for song traits when birds are divided into early song stablility, delayed song stablility, and song plasticity.

Song Trait	One Rate	Three Rates	p-Value
Syll Song	-97.8349	-86.3206	<0.001*
Song Rep	-100.812	-97.7647	0.014*
Syllable Rep	-107.3206	-105.5895	0.063

Table 7: Brownie results for song traits when birds are divided into either song stability (early and delayed) and song plasticity (Two Rates) or early song stablility, delayed song stablility, and song plasticity (Three Rates).

Song Trait	Two Rates	Three Rates	p-Value
Song Rep	-100.691	-97.7148	0.015*
Syllable Rep	-107.1332	-105.5532	0.075
Syll Song	-86.3125	-86.3447	1

Table 8: Brownie results for song traits when birds are divided into shorter learning (early song stability) and longer learning (delayed song stability and song plasticity).

Song Trait	One Rate	Two Rates	p-Value
Song Rep	-100.812	-97.9918	0.018*
Syllable Rep	-107.3206	-105.8488	0.086

Table 9: Brownie results for song traits when birds are divided into either shorter learning (early song stability) and longer learning (delayed song stability and song plasticity) (Two Rates) or early song stablility, delayed song stablility, and song plasticity (Three Rates).

Song Trait	Two Rates	Three Rates	p-Value
Syllable Rep	-105.8156	-105.5532	0.469
Song Rep	-97.9372	-97.7148	0.505