

Supplementary Material

Cultural divergence and morphological variation of isolated remnant populations of the endangered Floreana mockingbird

Enzo M. R. Reyes^{A,}, Michelle M. Roper^{A,E}, Christian Sevilla^B, Danny Rueda^B, Dianne H. Brunton^{A,E}, Adam N. H. Smith^C, and Luis Ortiz-Catedral^D*

^ASchool of Natural Sciences, Massey University, North Shore Mail Centre, Private Bag 102904, Auckland, New Zealand.

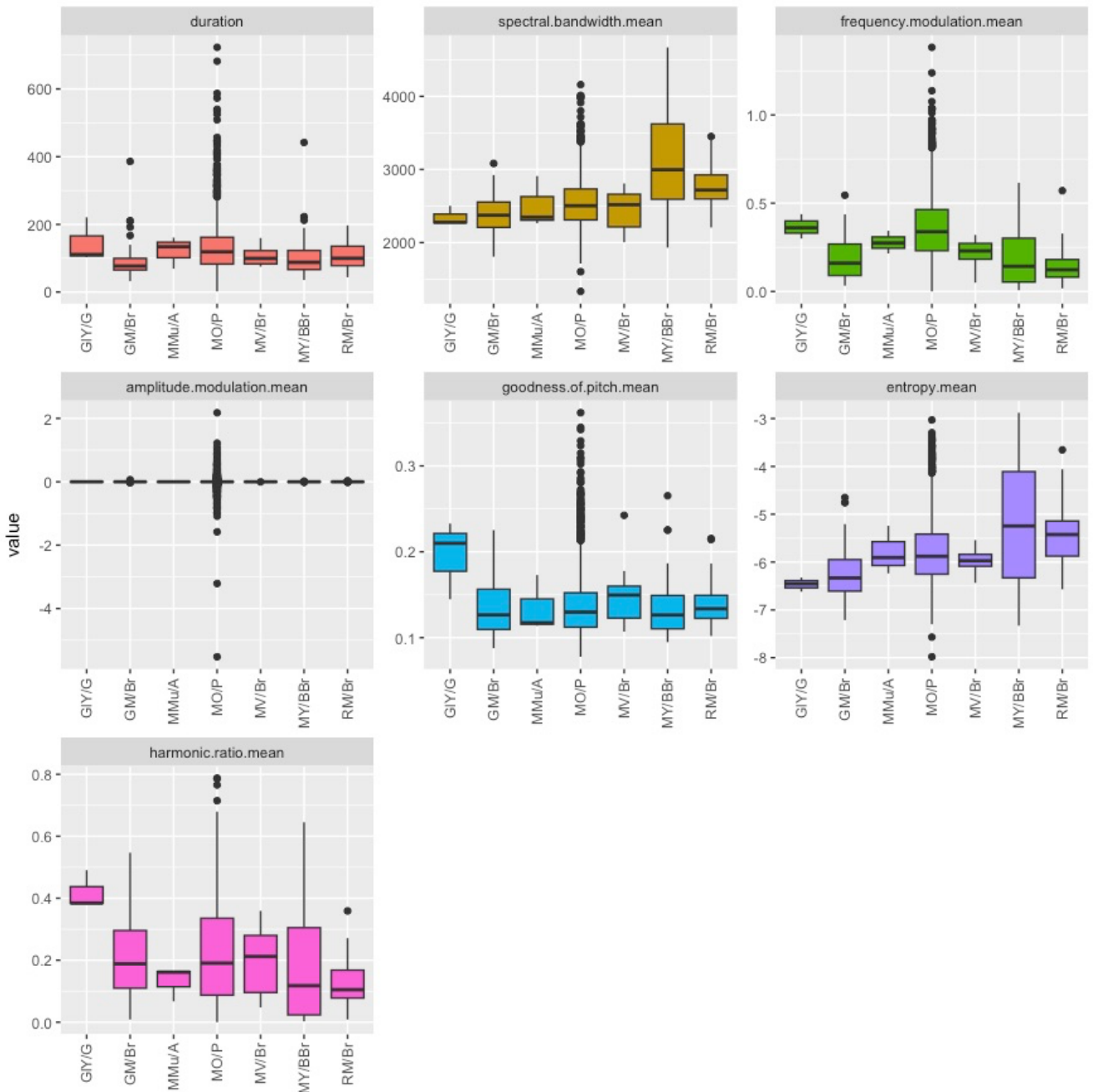
^BDirección de Ecosistemas, Dirección del Parque Nacional Galápagos, Av. Charles Darwin, S/N Puerto Ayora, Santa Cruz, Islas Galápagos, Ecuador.

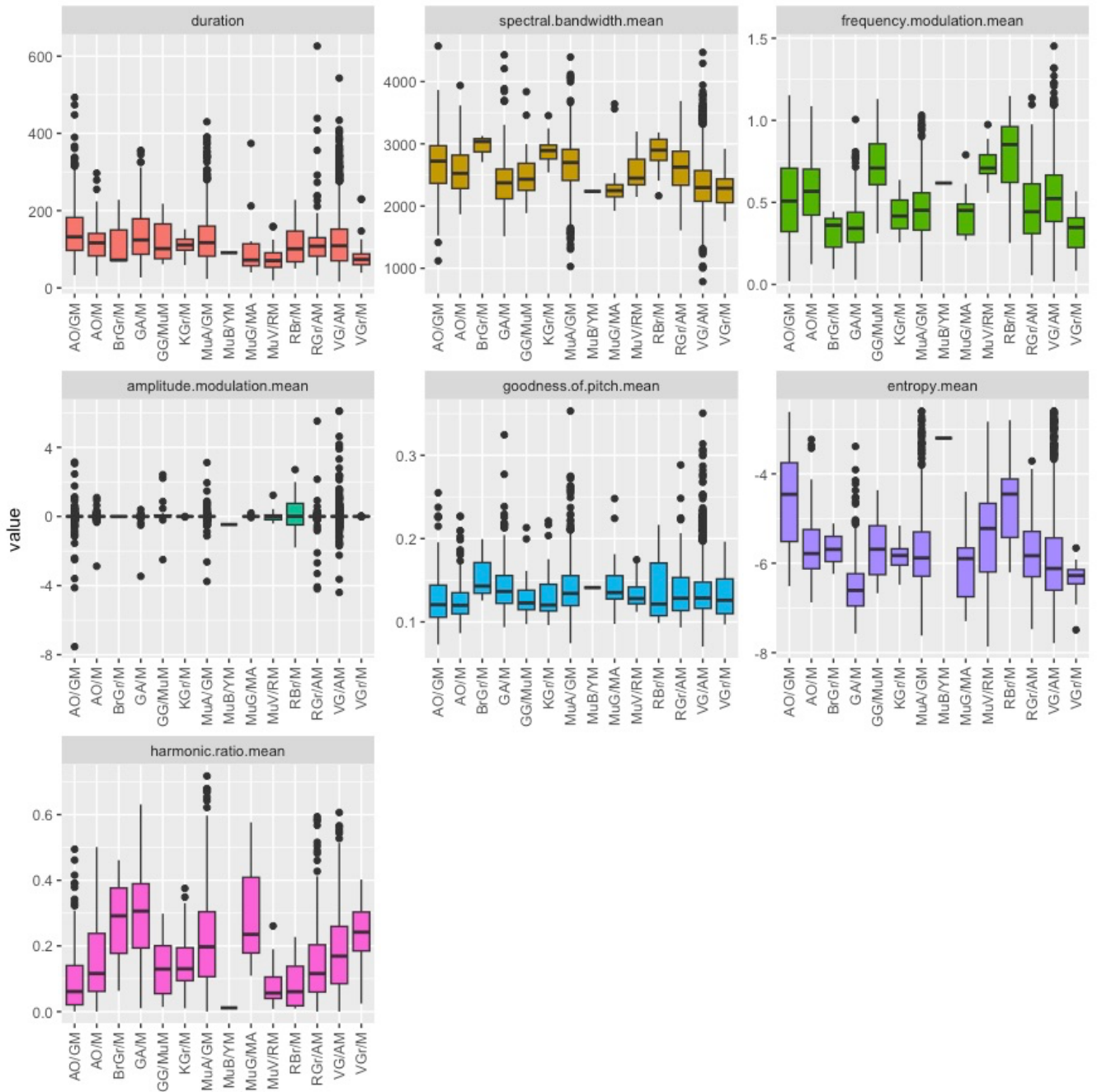
^CSchool of Mathematical and Computational Sciences, Massey University, North Shore Mail Centre, Private Bag 102904, Auckland, New Zealand.

^DWorld Parrot Trust, Oceania Conservation Program, Hayle TR27 4HB, UK.

^EPresent Address: School of Biological Sciences, University of Auckland, Auckland 1010, New Zealand.

*Correspondence to: Enzo M. R. Reyes School of Natural Sciences, Massey University, North Shore Mail Centre, Private Bag 102904, Auckland, New Zealand Email: enzorreyesb@gmail.com

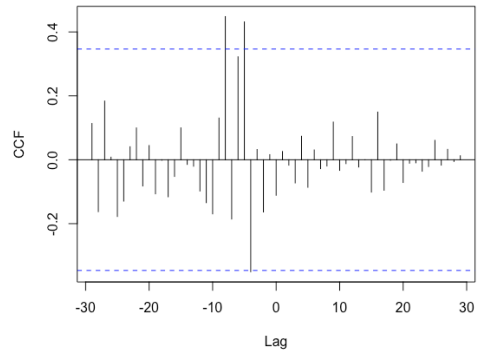
a

b

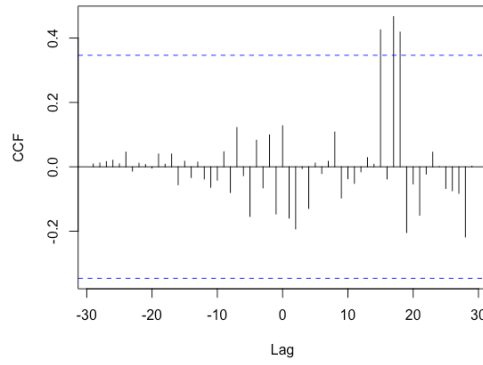
Variation between individuals sampled for a) Champion population and b) Gardner population. Each boxplot represent an individual sampled.

1

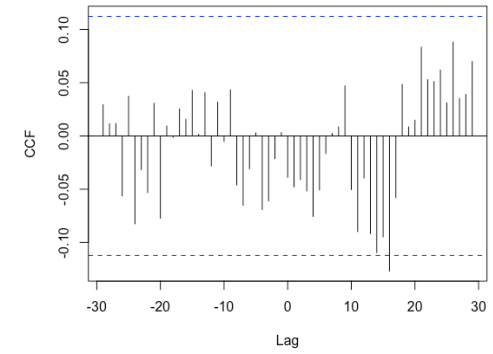
Cross-Correlation between Sample A and Sample B



Cross-Correlation between Sample B and Sample C

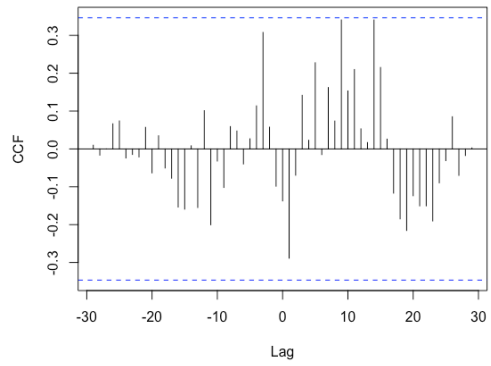


Cross-Correlation between Sample A and Sample C

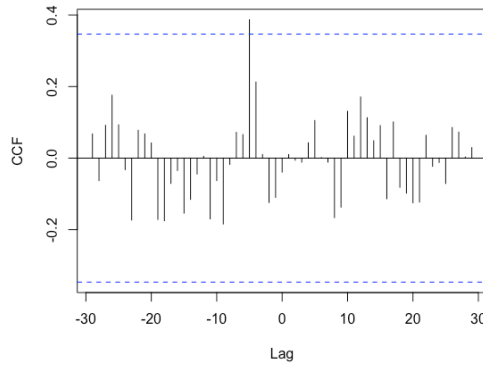


2

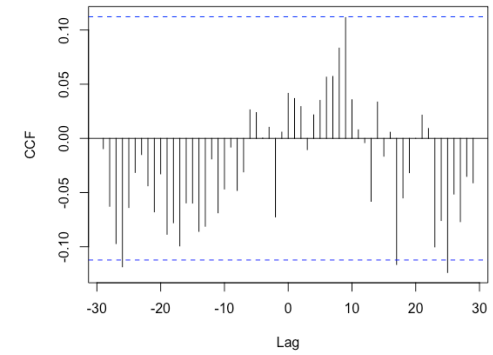
Cross-Correlation between Sample A2 and Sample B2



Cross-Correlation between Sample B2 and Sample C2

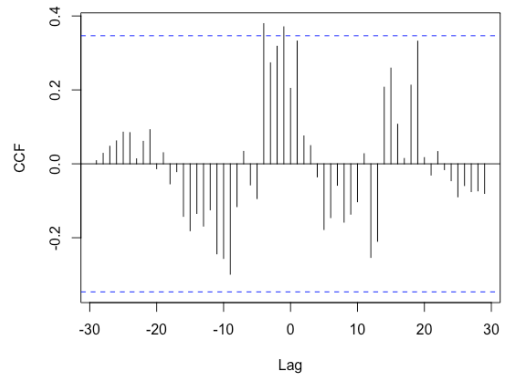


Cross-Correlation between Sample A2 and Sample C2

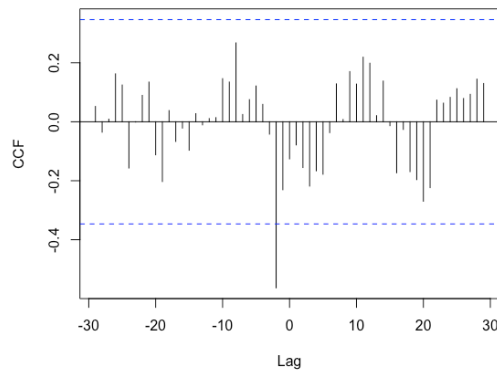


3

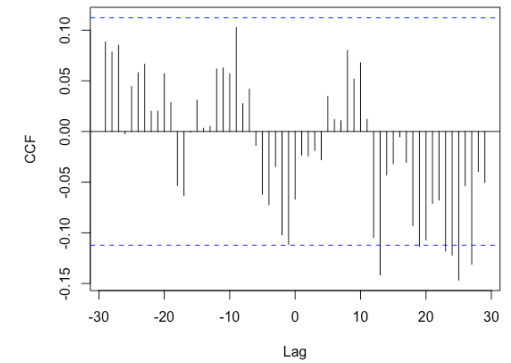
Cross-Correlation between Sample A3 and Sample B3



Cross-Correlation between Sample B3 and Sample C3

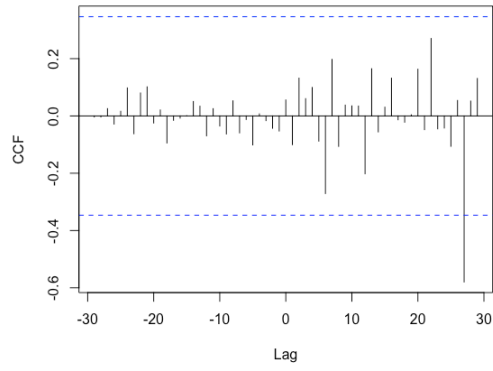


Cross-Correlation between Sample A3 and Sample C3

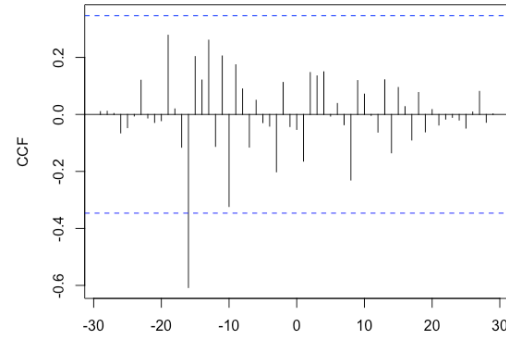


4

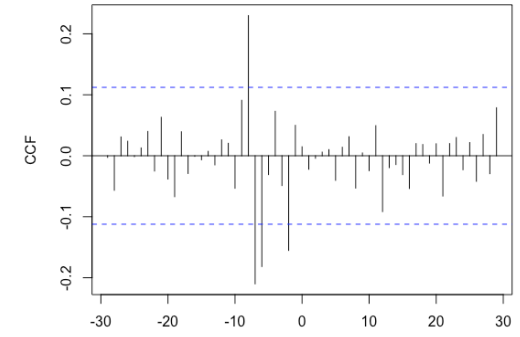
Cross-Correlation between Sample A4 and Sample B4



Cross-Correlation between Sample B4 and Sample C4

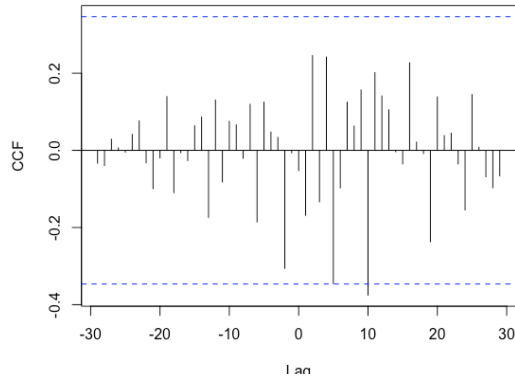


Cross-Correlation between Sample A4 and Sample C4

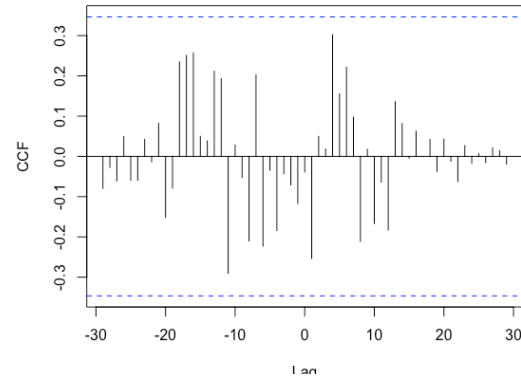


5

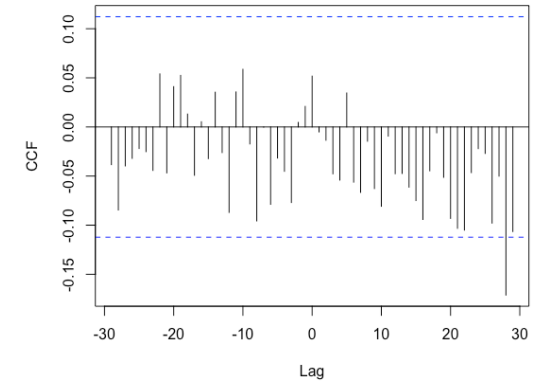
Cross-Correlation between Sample A5 and Sample B5



Cross-Correlation between Sample B5 and Sample C5

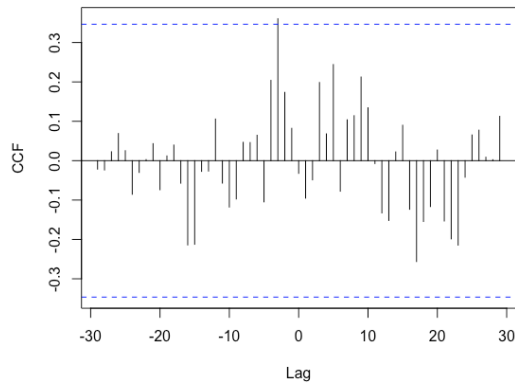


Cross-Correlation between Sample A5 and Sample C5

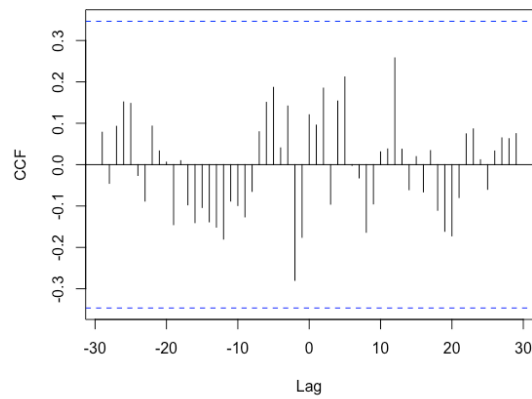


6

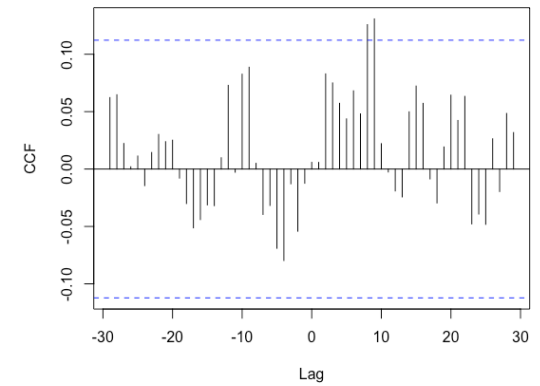
Cross-Correlation between Sample A6 and Sample B6



Cross-Correlation between Sample B6 and Sample C6

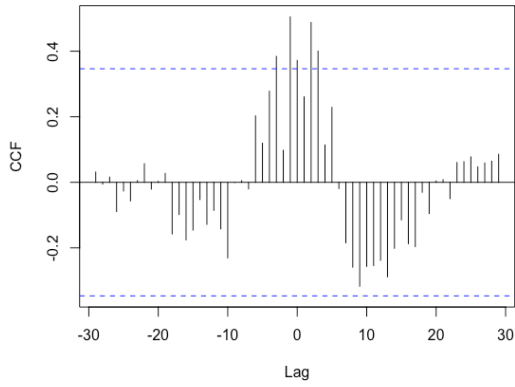


Cross-Correlation between Sample A6 and Sample C6

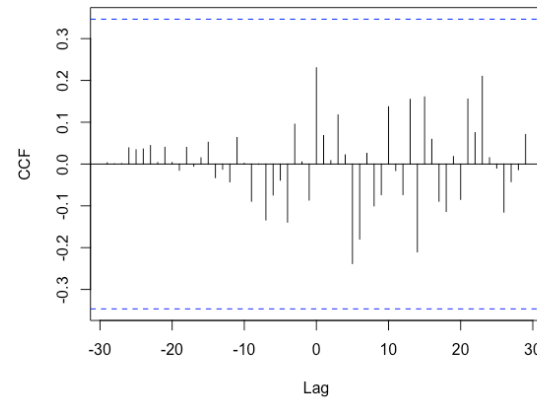


7

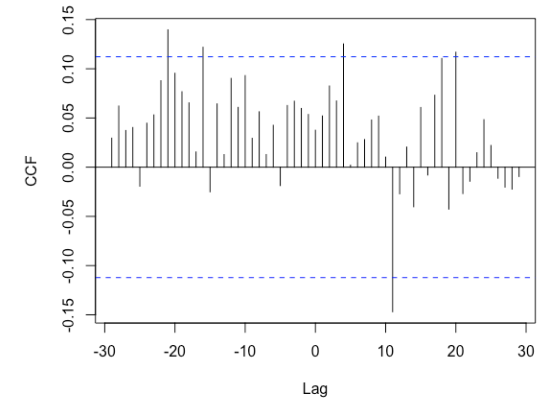
Cross-Correlation between Sample A7 and Sample B7



Cross-Correlation between Sample B7 and Sample C7



Cross-Correlation between Sample A7 and Sample C7



Cross-correlation plots between historical samples from the Floreana mockingbird. Letters A, B and C represent samples and numbers represent vocal parameters: 1= Duration; 2= Spectral bandwidth; 3= Frequency modulation; 4= Amplitude modulation; 5= Goodness of pitch; 6= Entropy; 7= Harmonic ratio.

	Individual	Duration	Spectral bandwidth	Frequency modulation	Amplitude modulation	Goodness of pitch	Entropy	Harmonic ratio mean
Average	a	100.43	4674.84	0.28	0.01	0.12	-4.29	0.63
SD		48.30	768.50	0.14	0.23	0.02	0.89	0.18
Coefficient of variation		48.10	16.44	51.43	2257.15	19.14	-20.83	27.93
Average	b	85.47	5597.96	0.48	-0.11	0.11	-3.65	0.73
SD		48.48	626.67	0.21	0.85	0.01	0.89	0.16
Coefficient of variation		56.72	11.19	43.39	-796.62	11.57	-24.37	22.49
Average	c	92.81	4560.10	0.25	0.01	0.12	-4.40	0.67
SD		50.01	753.94	0.14	0.19	0.02	0.90	0.18
Coefficient of variation		53.88	16.53	57.04	3521.05	20.26	-20.34	26.03

Coefficient of variation between all the vocal parameters of historical samples.