

023

Acoustic Variation Among Hybrid And Purebred Black And Mantled Howler Monkeys (*Alouatta* Spp.) Within And Outside A Mexican Hybrid Zone □

D.M. Kitchen^{1,2}, T.J. Bergman³, L. Cortes-Ortiz³

¹The Ohio State University, Columbus, Ohio, United States, ²The Ohio State University, Mansfield, Ohio, United States, ³University of Michigan, Ann Arbor, Michigan, United States.

Presenter's Email: kitchen.79@osu.edu

In stark contrast to humans, primate vocalizations appear relatively inflexible. However, because cross-fostering experiments are difficult and have ethical considerations, there is little data on vocal flexibility. Because hybrid zones are natural laboratories, we take advantage of a genetically characterized hybrid zone of *A. palliata* x *A. pigra* in central Mexico for differentiating genetic and social sources of acoustic variation. We analyzed the acoustic properties of adult male howler monkey vocalizations from purebred (n = 4 calls from each of 6 males/species) and hybrid (n = 3 calls from each of 5 males) individuals and compared these to calls from allopatric purebreds (n = 4 calls/8 males/species). If vocalizations follow ancestry regardless of location, this suggests a strong role of genetics in shaping vocalizations. However, if vocalizations vary depending on social companions and neighbors, this suggests either character displacement (if purebred species are more divergent in contact zone) or learning and flexibility (if purebreds are more similar in contact zone). We found that the 'roars' of *A. pigra* are a single, sustained exhale, whereas *A. palliata* males audibly inhale in the midst of this call, creating alternating inhaled and exhaled 'syllables.' Peak frequency and duration of roars were the acoustic features that best differentiated the two species. Hybrids were intermediate and highly variable in both features and purebred species within the contact zone overall resembled their allopatric counterparts, suggesting a genetic component. However, we present preliminary data suggesting that social learning and/or character displacement may still be operating.

Keywords: howler monkeys, hybrid zone, acoustic variation, loud calls