

Statistics Seminar

UTRGVTM

School of Mathematical
& Statistical Sciences

From Artificial to Natural Intelligence: Quantifying Vocal Diversity in a Wild Parrot

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Abstract:

Parrots rely heavily on vocal signals to maintain their social and mobile lifestyles. We studied vocal ontogeny in nests of wild green-rumped parrotlets (*Forpus passerinus*) in Venezuela. We identified three successive phases of vocal signaling that corresponded closely to three independently derived phases of physiological development. For each ontogenetic phase, we characterized the relative importance of anatomical constraints, motor skills necessary for responding to specific contexts of the immediate environment, and the learning of signals that are necessary for adult forms of communication. We observed shifts in the relative importance of these three factors as individuals progressed from one stage to the next; there was no single fixed ratio of factors that applied across the entire ontogenetic sequence. The earliest vocalizations were short in duration, as predicted from physical constraints and under-developed motor control. Calls became longer and frequency modulated during intermediate nestling ages in line with motor skills required for competitive begging. In the week before fledging, calls drastically shortened in accordance with the flight-constrained short durations of adult contact calls. The latter constraints were made evident by the demonstrated links between wing-assisted incline running, a widespread prelude to avian flight, just before the shift from long- duration begging calls to short-duration contact calls. At least in this species, the shifting emphases of factors at different ontogenetic stages precluded the morphing of intermediate-stage begging calls into adult contact calls; as shown previously, the latter are influenced by sample templates provided by parents.

Wednesday April 17, 2019

11:00 AM—12:00 PM

Brownsville: BLHSB 2.312 (Live)

Edinburg: Streamed to EMAGC 1.302

Zoom Link: <https://utrgv.zoom.us/j/301840838>

For more information or special accommodations, please contact

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