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PROJECT

Use and Costs of Song Amplitude in Birds

The two main functions of song in male birds are mate attraction and territory defense against other males. Since loud songs are better suited to fulfill this task, it has been suspected that territorial songbirds always sing as loudly as possible. Recent studies, however, show that birds do not maximize song amplitude per se; rather, vocal amplitude appeared to be individually regulated depending on environmental factors, such as the degree of acoustical masking by background noise or the presence of intended receivers. These findings suggest that the production of loud songs is subject to some constraint. However, little is known about the use and costs of signal amplitude in animal acoustic communication. The aim of the project is a comprehensive analysis of the use, the information content, and the energetic costs of singing loudly. To achieve this goal, bioacoustic, morphometric and respirometric methods will be combined. The results will extend our knowledge about how animals use the amplitude of their signals to transmit information and help elucidate which selective forces drive the design of vocal signals.

Recommended Reading

Brumm, H. and D. Todt. "Male-Male Vocal Interactions and the Adjustment of Song Amplitude in a Territorial Bird." *Animal Behaviour* 67 (2004): 281-286.

Brumm, H., K. Voß, I. Köllmer, and D. Todt. "Acoustic Communication in Noise: Regulation of Call Characteristics in a New World Monkey." *Journal of Experimental Biology* 207 (2004): 443-448.

Brumm, H. "The Impact of Environmental Noise on Song Amplitude in a Territorial Bird." *Journal of Animal Ecology* 73 (2004): 434-440.

TUESDAY COLLOQUIUM, 28.02.2005

Animal Communication in the Noisy World

Brumm, Henrik (Leiden,2011)

The evolution of the Lombard effect : 100 years of psychoacoustic research

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=1726128210>

Brumm, Henrik (Berlin,2006)

Ambient noise, motor fatigue, and serial redundancy in chaffinch song

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=1047225824>

Brumm, Henrik (2005)

Acoustic communication in noise

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=895085917>

Brumm, Henrik (Düsseldorf,2005)

Wer die Nachtigall stört ... : Dr. Henrik Brumm über den Kampf von Tieren mit dem Lärm : Alexander Kluge im Gespräch mit Henrik Brumm

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=669195774>

News & Stories

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=669195774>

Brumm, Henrik (Cambridge,2004)

Acoustic communication in noise : regulation of call characteristics in a New World monkey

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=895086700>

Brumm, Henrik (2004)

The impact of environmental noise on song amplitude in a territorial bird

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=770388779>

Brumm, Henrik (Amsterdam [u.a.],2003)

Male-male vocal interactions and the adjustment of song amplitude in a territorial bird

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=895086301>

Brumm, Henrik (2003)

Facing the rival : directional singing behaviour in nightingales

<https://kxp.k1oplus.de/DB=9.663/PPNSET?PPN=770388477>