Abstract 28:

The communication distance and singing ecology of the wild zebra finch

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Birdsong is typically seen as a long-range signal functioning in mate attraction and territory defense. Among birds, the zebra finch is the prime model organism in bioacoustics, yet almost exclusively studied in the lab. In the wild, however, zebra finch song differs strikingly from songbirds commonly studied in the wild as zebra finch males sing most after mating and in the absence of territorial behavior. In this presentation, I provide an ecological framework for a wealth of laboratory studies, while using the data from the wild to obtain unprecedented insights into the communication range of avian song. By integrating calibrated sound recordings, sound transmission experiments and social ecology of zebra finches in the wild with insights from hearing physiology we show that wild zebra finch song is a very short-range signal with an audible range of about nine meter and that even the louder distance calls do not carry much farther (up to about fourteen meter). These integrated findings indicate that the vocal communication distance of the main laboratory species for avian acoustics contrasts strikingly with the classical birdsong paradigm as a long-range advertisement signal providing a novel framework for the function of birdsong and for the interpretation of laboratory studies.