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Assessing Vocal Flexibility in a Female Songbird: Does social stress modify the vocal behavior of female zebra finches?

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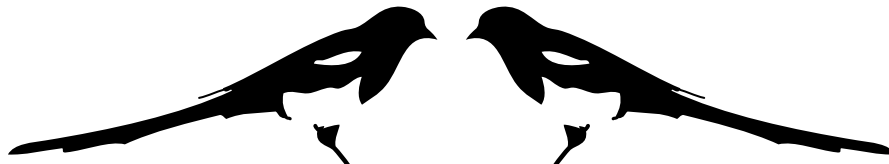
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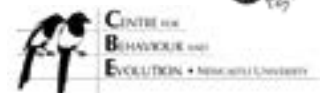
Joint meeting of the 33rd International Ethological Conference (IEC) & the Association for the Study of Animal Behaviour (ASAB)



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P229 Assessing Vocal Flexibility in a Female Songbird: Does social stress modify the vocal behavior of female zebra finches?

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One important problematic regarding animal vocal signals is to know how much they are shaped by individual experience (plasticity) and whether they can be momentarily modified in response to the context of emission (flexibility). Birdsong has been a primary model on these questions. Songbirds emit two types of vocal signals: songs -complex successions of notes generally emitted during reproduction or territorial defense- and calls -single notes used in a variety of social interactions. Knowledge about vocal flexibility in birds has developed on songs and barely anything is known about the degree of flexibility in calls, representing the large majority of birds' vocalizations. Moreover, as song has been studied in songbird species whose females do not sing, there is a serious gap of knowledge on vocal communication in females. We focused on domestic female zebra finches to study flexibility in calls. Using playback experiments, we investigated the impact of a powerful stressor – social isolation- on both the female vocal behaviour and the acoustic structure of the evoked distance calls. Results show that calls' acoustic structure is modified by social isolation compared to control (females were accompanied by conspecifics). Specifically, calls recorded during isolation were longer, higher pitched and more broadband.

P230 Gestural signalling in wild chimpanzees (*Pan troglodytes*): development and underlying cognitive complexity

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Advancing gestural and neural research on non-human primates over the past decades has led many theorists to emphasize the role gesture might have played in the evolution of language. Although the flexible and intentional use of gestural signals in great apes is well established, the development and underlying cognitive complexity of these communicative means are to date poorly understood. By conducting the first longitudinal study on gestural development and complexity in two subspecies of free-living chimpanzees (*Pan troglodytes*) we will expand upon the pioneering

study conducted by Plooij (1978). Apart from systematically retesting his results on intentional signalling in infant chimpanzees we will use newly developed methods to also include features crucial for human language such as communicative meaning, referentiality and learning. To do so, the communicative behaviour (i.e., gestures as well as co-occurring vocalisations and facial expressions) of chimpanzee infants between the ages of 9–42 months and their mothers were observed in the communities of Kanyawara, Kibale National Park, Uganda, and Tayÿ, Tayÿ National Park, CÔte d'Ivoire. Here we will present preliminary data on gestural and socio-cognitive development after the first field seasons at Tayÿ and Kanyawara and discuss them with regard to infant age and social environment.

Plooij, F. X. (1978). Some basic traits of language in wild chimpanzees? In A. Lock (Ed.), *Action, gesture and symbol* (pp. 111–131). London: Academic Press.

P231 Relationship between song traits and long-term life history in the Java sparrow (*Lonchura oryzivora*)

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Birdsong is a sexually selected acoustic ornament, which is assumed to serve as an indicator of male quality. Recent studies on the developmental stress hypothesis revealed that early rearing conditions affected neural development of song control systems, and determined learning-based song traits, such as repertoire size. Especially in age-limited song learners, song features crystallized early in life are less subject to changes in adulthood, in sharp contrast with age-dependent repertoire increase in open-ended learners. However, less attention has been paid to and little is known of age-related lifelong song changes in closed-ended learners. We investigated among-individual song variations and within-individual song changes in a closed-ended songbird, the Java sparrow (*Lonchura oryzivora*), with the aim of shedding light on the relationship between song phenotype and long-term life history. We found that song performance related to motor skills (i.e., song duration and tempo) increased with age, while syllable repertoire and song complexity not. Female preference for older male is a common phenomenon among animals. Therefore, our results suggest that song performance reflects male quality with aging.
