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The flexible listener: exploring zebra finch sensitivity to spectral and temporal sound features

Ning, Z.

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Acknowledgments

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Curriculum Vitae

Zhi-Yuan Ning was born in Canton province, People's Republic of China, on August 21st, 1986. He earned a Bachelor's degree in Biological Sciences, with a major in Biochemistry & Molecular Biology and a specialization in Secondary Metabolites and Structural Anatomy of Medicinal Plants, from South China Agricultural University in 2010. After completing his bachelor's degree, he worked for almost four years at the Guangdong Entomological Institute (CAS) as a Research Assistant. During this period, he collaborated with other members of the research program, conducting biological experiments on the biological control of citrus insect pests. He also independently undertook the technical development and finalization of a crop protection product—an environmental-friendly insecticide spraying glue. During this time, he was granted a National Invention Patent of China for an ecological control method for citrus pests based on the utilization of predatory mites.

In 2014, he started a master's project on animal ecology and ethology at the Chinese Academy of Sciences. For his master's thesis, he worked together with Prof. dr. Huijian Hu and Dr. Daoying Lan on the PAE behaviour Coding System on Semi-captive *Hamadryas* baboon. During this period, Zhi-Yuan developed a keen interest in animal behaviour and cognition. His master's study on *Hamadryas* baboon behaviour led to the publication of a peer-reviewed scientific article.

After completing his master's at the Chinese Academy of Sciences in 2017, he was awarded a grant from the Chinese Scholarship Council to pursue his PhD study abroad in animal behaviour and cognition. In 2018, he moved to Leiden to embark on his PhD project, investigating diverse cues involved in zebra finches' auditory perception under the supervision of Prof. dr. Carel ten Cate (Leiden University) and Prof. dr. Henkjan Honing (University of Amsterdam). Throughout his PhD, he conducted several empirical studies using both natural songs and artificial stimuli, addressing questions ranging from song discrimination and preferences to the perceptual interplay of specific acoustic features/patterns. Over the years, Zhi-Yuan has developed a growing interest in comparative cognition studies on non-human animals, and his academic journey in this scientific field is still unfolding.

Publications

Peer-reviewed articles

Ning, Z., Honing, H., & ten Cate, C. (2023). Zebra finches (*Taeniopygia guttata*) demonstrate cognitive flexibility in using phonology and sequence of syllables in auditory discrimination. *Animal Cognition*, 26(4), 1161–1175.

Ning, Z., Dong, G., Tang, H., Lan, D., & Hu, H. (2017). Behavioral diversity of semi-captive hamadryas baboons (*Papio hamadryas*) on the basis of the PAE coding system. *Biodiversity Science*, 25(9), 1008–1018.

Ning, Z., Honing, H., van Mil, H., & ten Cate, C. (in press) The role of spectral features and song duration in zebra finch (*Taeniopygia guttata*) song recognition. *Animal Behaviour*.

Manuscripts for publication

Ning, Z., Honing, H., Snelderwaard, P., & ten Cate, C. (in preparation) Female and male zebra finches (*Taeniopygia guttata*) preferences for normal and modified songs.

Ning, Z., Honing, H., & ten Cate, C. (in preparation) Perceptual interplay of pitch and formant contours in melody recognition by zebra finch (*Taeniopygia guttata*).