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

Ning, Z.

Citation

Ning, Z. (2024, May 2). *The flexible listener: exploring zebra finch sensitivity to spectral and temporal sound features*. Retrieved from <https://hdl.handle.net/1887/3750255>

Version: Publisher's Version

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Note: To cite this publication please use the final published version (if applicable).

Acknowledgments

Acknowledgments

This thesis signifies more than two decades of collaborative work involving researchers from both the music cognition and animal behaviour fields in the Netherlands. Since my arrival on September 13th, 2018, I have felt at home. Numerous individuals have generously offered their help and guidance throughout my PhD journey, providing me with unique opportunities that I have embraced with gratitude, enabling me to present such in-depth, interdisciplinary studies in this thesis. Below, I express my immense gratitude to a few of those who played a pivotal role in supporting me on this journey.

Foremost, I extend my sincere thanks to my two supervisors. Carel ten Cate deserves my gratitude for his enlightened and generous support to the younger generation in academia. Two years before his retirement, he took the risk of considering an unfamiliar foreigner's PhD application, and I am thankful for his excellent supervision and commitment to my research project. Most importantly, I am grateful for his patience in addressing my “naive” questions and providing swift feedback, significantly aiding in advancing my research skills. I also want to express my appreciation to Henkjan Honing for his creativity, inspiration, and enthusiasm as a supervisor, making academic discussions feel comfortable. I vividly recall asking him about the potential usage of research on animal musicality, and he responded, “The motivation to spend time focusing on useless topics is human curiosity; that's why we're human beings”. This reminder helped clarify my purpose in pursuing a PhD in the Netherlands. Throughout the years, both Carel and Henkjan have provided unwavering support, not only by offering the opportunity to focus on this project systematically over five years but also academically and emotionally during the challenging journey to complete this thesis and to overcome the difficulties caused by the COVID-19 pandemic.

I've been a part of Leiden's Behavioural Biology research group, a place that has always felt like home. This sentiment is thanks to my wonderful colleagues, including Annebelle, Christian, Danielle, Eira, Errol, Fabian, Fien, Gabrielle, Inge, James, Jeroen, Jiangnan, Jing, Judith, Kees, Meike, Merel, Michelle Spierings, Michelle Geers, Nick, Peter, Quanxiao, Ralph, and Roy. Our inspiring coffee break conversations covered science, birds, fishes, mussels, and intriguing “Weird Fun Facts”, showcasing the diverse scientific and non-scientific interests that still amaze me. Special thanks to Jeroen for his invaluable advice on tackling statistical issues in R. I express gratitude to Peter Snelderwaard for technical support and Michelle Geers and Roy van Swetselaar for their assistance with animal care. They've been an invaluable support pillar in our research group, always ready to answer questions on bird welfare, lab

administration, and equipment operation. Peter's dedicated help for over three months on the preference test, starting early in the morning, deserves special mention.

Acknowledgments extend to our senior staff in the Behavioural Biology group, Hans and Katharina, for inspiring science discussions and career advice. Their guidance kept me grounded and reminded me of the essence of our work. I am deeply grateful to the dedicated students, Emmie and Leda, for their crucial assistance with experiments. Much appreciation to our collaborator Harald van Mil for his crucial contributions to designing and clarifying the statistical analyses in my projects, as well as to Yizhen Dai for his assistance with statistical analyses.

A separate acknowledgment goes to the Music Cognition group from the University of Amsterdam. Special thanks to Jiaxin for her dedicated work on the project and the enjoyable collaboration. I express gratitude to the other members of the Music Cognition group—Atser, Ashley, Bas, Berit, David, Evert, Fleur, Makiko, Marcel, Mariëlle, and Xuan—for their relaxed and helpful demeanour, engaging brainstorming sessions, strong ideas, and insightful discussions about the project. A particular shoutout to Berit and Evert for their programming contributions to the project.

I also engaged in activities beyond the lab, where I had the pleasure of meeting amazing individuals. I extend my heartfelt thanks to my friends - Bradley, Chengjian, Roberta, Ruochen, Thomas, Thijs, and Xiangyu. I am grateful for the dedication and energy each of them contributed to the happy time we had in the Netherlands. Their reminders that this work can be both enjoyable and captivating, along with their convincing encouragement that I possessed the qualities for an academic path, meant a lot.

Lastly, and most importantly, I am fortunate to have unwavering support from my typical and unique Chinese family, conforming to the stereotype of an ideal family in some aspects. I express gratitude to my parents, brother, and other family members for their steadfast support and encouragement. They celebrated every significant moment with me and stood by me whenever I needed assistance, including my brother's professional drawing for the thesis cover and the support of my uncle and cousin.

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*).