

Department of Biological Sciences Faculty of Science

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Hosted by A/P Li Daiqin



Introduction to meta-analysis: The good, the bad, and the future

By Yong Zhi Foo University of Western Australia

Dr Foo obtained his PhD in Biological Sciences and Psychology in 2017 at the Australian Research Council Centre of Excellence in Cognition and its Disorders, University of Western Australia (UWA), under the supervision of Prof. Leigh W. Simmons and Prof. Gillian Rhodes. His research crosses the boundaries of evolutionary biology and psychology to study person perception. In particular, he researches the physical traits that lead us to perceive some individuals as more attractive, trustworthy, and dominant, whether such perceptions are accurate, and the biological basis for such perceptions (e.g. are attractive physical features signals of good health and diet). More broadly, Dr Foo examines the mechanisms driving trade-offs between different life-history traits, including attractiveness, competitiveness, fertility, and health, using both human and cross-species comparative datasets. He relies on a number of paradigms, including large-scale cohort studies, laboratory facial perception experiments, experimental diet studies, and meta-analysis. Currently, he is an adjunct research associate at the University of Western Australia and provides research consultancy services to a number of academic, industry, and government partners.

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The number of scientific publications, including those in Biology, has been growing at an exponential rate. This sheer number of publications can present confusion, especially since different publications on the same topic present conflicting results. often Metaanalysis provides a powerful quantitative method to not only summarize findings, but also discover potential causes of variation that may explain conflicting results. In this lecture, I will present an overview of meta-analytic methods. First, I will present what metaanalysis can do in terms of summarizing literature findings, uncovering sources of variation in results, and detecting publication biases. Second, I will talk about some of the potential pitfalls associated with the misuse of meta-analysis and suggest some solutions to address these pitfalls. Third, I will talk about the future of meta-analysis in the rapidly growing world of scientific literature.

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