UNCOVERING THE HIDDEN COMPLEXITY OF STATISTICAL MODELS

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Model complexity is the ability of a statistical model to fit a wide range of data patterns. Complexity is routinely assessed by simply counting the number of freely estimated parameters in a given model. However, complexity is also affected by configural form, that is, by the particular arrangement of the variables in the model. Recent considerations of configural complexity have found that certain models have an inherent tendency to fit well to any possible data (sometimes achieving superior goodness-of-fit when compared to alternative models that contain a greater number of free parameters!). In this talk, Dr. Bonifay will present a method for evaluating configural complexity and demonstrate how more sophisticated considerations of complexity can improve applied research in the social sciences.

Dr. Wes Bonifay is an Associate Professor of Statistics, Measurement, & Evaluation in Education at the University of Missouri. His research interests are in the area of statistical model evaluation, with particular foci in item response theory, factor analysis, and other psychological measurement models. He has published a number of quantitative research articles on frequentist, Bayesian, and information-theoretic methods of statistical model evaluation, alongside studies of psychometric topics such as alternative item response functions, dimensionality assessment, and subscale analysis. He has also collaborated with substantive psychological and educational researchers, applying item response theory and structural equation models to investigate important issues related to psychopathological assessment, patient-reported outcomes, and socio-emotional and behavioral risk. Dr. Bonifay earned his PhD in Quantitative Psychology from the University of California, Los Angeles.

Colloquium Access Information:

Friday, 10/13/2023, 11am ET
https://tinyurl.com/rmme-Bonifay
Meeting # 2621 125 2319
Password: RMMESTAT

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