

Scientific Reproducibility Series

By Leverhulme-Bridges and Behavioural Science GRP



The Leverhulme Trust



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“Biases and other challenges in meta-analysis”

Meta-analysis, the pooling of information from separate studies that relate to the same outcome of interest, is now widely used in application. However practical and methodological challenges remain. This talk will focus on these issues and will comprise of two main sections. Firstly, I will discuss issues relating to bias, both within studies and across the entire evidence base. The first of these types of biases relates to "known unknowns" because it refers to studies that have been included in the meta-analysis. However the second of these types of biases is perhaps even more challenging, as it refers to studies that have not been found, and so refers to "unknown unknowns". In the second part of the talk I will discuss some of the main themes of current methodological interest, including multivariate, network and individual patient meta-analysis. As we will see, issues relating to bias can become even more subtle as more sophisticated statistical methods are used. A theme running through the talk will be scientific reproducibility, which we will see also becomes more challenging when using more advanced statistical techniques.