

Deborah G. Mayo

Statistical Science and Philosophy of Science: Where Do/Should They Meet in 2011 (and Beyond)?

1. Introduction
 - 1.1 Meeting on a Two-Way Street
 - 1.2 Inductive Evidence as ‘Evidence Transcending’
 - 1.3 Relevance for Statistical Science Practice
 - 1.4 Joyful Eclecticism or a Mixture of Conflicting Methods?
 - 1.5 Even Shallow Drilling Reveals Issues of Statistical Philosophy
 - 1.6 “An Important Task of Our Time”
 - 1.7 The Philosophical Doctor Is In
2. Induction and Error
 - 2.1 Probability and Induction
 - 2.2 Statistical Science: Learning Despite Error
 - 2.3 Twin Goals: Reliability and Informativeness
 - 2.4 Frequentist Error Statistics
 - 2.5 Error-Statistical Methods as Tools for Severe Testing
3. A Platform on Which to Meet
 - 3.1 Frequentist-Bayesian Unifications
 - 3.2 Diffident Bayesianism
 - 3.3 A Plethora of Foundational Problems
 - 3.4 Bayesian Family Feuds
 - 3.5 Disinterring Frequentist Roots?
 - 3.6 Classic Criticisms of ‘Classic’ Frequentist Methods
4. How to Scrutinize Statistical Methods Philosophically
 - 4.1 Criteria for the Philosophical Scrutiny of Methods
 - 4.2 How Might Philosophers Construe Ascertainability?
5. Bayesian Epistemology, Probability ‘Logics’, and Statistical Science
 - 5.1 Using Probability and Statistics in Philosophy of Science
 - 5.2 A Principle of Good Experimental Design
 - 5.3 Getting Beyond a Package of Superficiality (Upshot of Section 5)
6. Concluding Remarks