

Karl Pearson Lecture: Statistical issues in modern scientific research

Peter McCullagh
University of Chicago, USA petermccullagh52@gmail.com

Abstract

I will discuss three recent instances of high-profile published scientific research in which statistics plays a prominent role. These include (i) the 'Out of Africa' linguistic hypothesis, (ii) allergy prevalence, species diversity and modern lifestyles, (iii) the role of commensal bacteria in *Drosophila* mating activity. Issues that arise include experimental design, how and what to count, data availability, reproducibility of the computations, appropriateness of the analyses, under- and over-dispersion, over-statement of the strength of evidence, and data anomalies.