On reading Bernoulli's *Ars conjectandi* 1713

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Abstract: James Bernoulli's posthumous book is famous among statisticians for the binomial distribution in Part I, the Bernoulli numbers in Part II and the limit theorem in Part IV, but it contains much else of interest besides. It is full of Pascal triangles, and Bernoulli's treatment of the polynomials for the sums of the powers of the integers leads to the discovery that the Bernoulli numbers had already been published by Johann Faulhaber in 1631. We can now see how Bernoulli derived the polynomials; the simple algorithm reveals an error in his table of the coefficients. An alternative and elegant procedure involves the inversion of Pascal matrices of binomial coefficients.

Speaker: Anthony retired as Professor of Biometry in 2003. His interest in *Ars conjectandi* stems from his writing of *Pascal's Arithmetical Triangle* in 1979-81. A geneticist who was the last undergraduate taught by R.A.Fisher, he worked with L.L.Cavalli-Sforza in Italy for three years, establishing the field of the statistical estimation of evolutionary trees. Three years as a Senior Lecturer in D.J.Finney's Department of Statistics in Aberdeen were followed by a Bye-Fellowship of Gonville and Caius College devoted to the writing of *Likelihood* (1972). From 1970 he held appointments in the Postgraduate Medical School and its successor, the Clinical School, becoming Reader in 1978 and Professor in 2000. *Foundations of Mathematical Genetics* appeared in 1977 and *Cogwheels of the Mind, The Story of Venn Diagrams* in 2004. Other books include *Annotated Readings in the History of Statistics* (2001) with H.A.David.

Directions: The main entrance is reached from Clarkson Road by going along the footpath to the right of the Newton Institute, and turning left through the gatehouse towards the main building (Pavilion A), which has a glass front and a curved grassed roof. The main entrance is in the middle of the glass front. Coffee before the talk will be in the common room in Pavilion D, and the talk will be in Meeting Room 4 in Pavilion A. Free parking is available after 5pm on Clarkson and Wilberforce Roads.

Provisional Next Meetings:
5th March – Tom Bramley (Cambridge Assessment) on 'Statistics and examinations'.
26th March – Richard Steward (Blyth Estuary Group) on 'Blyth abandoned: sound science or flawed policy?'
7th May – Donal McCarthy (RSPB).
13th October – Chris Rogers (Statistical Laboratory).
November – Yoryos Lyratzopoulos (Department of Public Health and Primary Care).

Supper: Some members eat before a talk at the University Centre meeting in the Granta Lounge at 6pm. All welcome !
Subscriptions: of 1 pound are now due for attending the 2014-2015 session.
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Slides and .mp3 files of old talks: http://www.mrc-cbu.cam.ac.uk/people/peter.watson/csdg.html