Dr P.M.E. ALTHAM, 2011

Retired Director of Studies for the M.Phil. in Statistical Science, Statistical Laboratory, University of Cambridge.

1. Exact Bayesian analysis of a 2×2 contingency table and Fisher's 'exact' significance test. *J. Roy. Statist. Soc. B* **31**, (1969), 261–269.
2. The measurement of association of rows and columns for an $r \times s$ contingency table. *J. Roy. Statist. Soc. B* **32**, (1970), 63–73.
3. The measurement of association in a contingency table: three extensions of the cross-ratios and metrics methods. *J. Roy. Statist. Soc. B* **32**, (1970), 395–407.
4. The estimation of $\mathrm{I}(x = 1 : 2; y)$. Appendix to Robson, B. and Pain, R.H. Analysis of the code relating sequence to conformation in proteins: possible implications for the mechanism of formation in helical regions. *J. Molecular Biology* **58**, (1970).
5. The analysis of matched proportions. *Biometrika* **58**, (1971), 561–576.
6. Exact Bayesian analysis of an intraclass 2×2 table. *Biometrika* **58**, (1971), 679–680.

(This is actually about the test for Hardy-Weinberg equilibrium, and so complements my first paper (1969). I would dearly like to know why there is an identity between the Bayes posterior probability and the classical p-value in the test for independence in **both** cases. Someone must surely be able to show that these two are special cases of a general result, for conditional tests in exponential families?)

7. A non-parametric alternative to d' (with Hammerton, M.). *Nature* **234**, (1971), 487–488.
8. A non-parametric measure of signal discriminability. *Brit. J. of Mathematical & Statistical Psychology* **26**, (1973), 1–12.

(Papers 7, 8 relate to ROC curves.)

9. Quasi-independent triangular contingency tables. *Biometrics* **31**, (1975), 233–238.
10. Discrete variable analysis for individuals grouped into families. *Biometrika* **63**, (1976), 263–269.
11. Two generalisations of the binomial distribution. *Applied Statistics* **27**, (1978), 162–167.
12. Testing assumptions of data selection in focal animal sampling (with Shapiro, D.). *Behaviour* **67**, (1978), 115–133.
13. Detecting relationships between categorical variables observed over time: a problem of deflating a chi-squared statistic. *Applied Statistics* **28**, (1979), 115–125.
14. Some comments on Latent Structure Analysis, arising out of a paper by R.D. Gill. *Statistica Neerlandica*, (1981), 165–172.
15. Serial dependence of observations leading to contingency tables, and corrections to chi-squared statistics (with Tavare, S.). *Biometrika* **70**, (1983), 139–144.
16. Improving the precision of estimation by fitting a model. *J. Roy. Statist. Soc. B* **46**, (1984), 118–119.

This paper was used in Stanley E.Lazic's paper 'Why we should use simpler models if the data allow this: relevance for ANOVA designs in experimental biology', BMCPhysiology, 2008, 8:16 www.biomedcentral.com/bmcphysiol/

17. Markov chains: reversibility, equilibrium and GLIM (with Porteous, B.T.). *GLIM Newsletter* **11**, (1986), 45–50.

18. Non-technical description of 'Inspection for faulty components before or after assembly of manufactured items'. *Innovation*, University Ideas for Industry, Longman Cartermill (1986).

19. A matched pairs problem with discrete data: a comparison of offending rates under employment and unemployment (with Farrington, D.P.). *GLIM Newsletter* **14**, (1986), 11–14.

20. Graphical representations of multivariate binary data. *Genstat Newsletter* **18**, (1986), 42–52.

21. Inspection for faulty components before or after assembly of manufactured items. In *The Statistical Consultant in Action* (eds. D.J. Hand and B. Everitt), Cambridge University Press, (1987), Chapter 11, 153–170. (This paper is published by kind permission of Marks & Spencer plc.)

22. Maternal adversity and recent stressful life events in anxious and depressed children (with Goodyer, I.M. and Wright, C.). *Journal of Child Psychology and Psychiatry* **29**, (1988), 651–667.

23. Recent friendships in anxious and depressed children (with Goodyer, I.M. and Wright, C.). *Psychological Medicine* **19**, (1989), 165–174.

24. Recent friendships and life events in anxious and depressed school-age children (with Goodyer, I.M. and Wright, C.). *British Journal of Psychiatry*, (1989).

25. Markov chain analysis and specialisation in criminal careers (with Stander, J., Farrington, D.P. and Hill, G.). *Brit. J. of Criminology* **29**, (1989), 317–335.

26. Use of Genstat for bootstrap estimation of parameters. *Genstat Newsletter* **22**, (1989), 48–50.

27. Social adversity but not perinatal complications predicts postnatal depression (with Stein, A., Cooper, P.J., Campbell, E.A. and Day, A.). *Brit. Med. J.* **298**, (1989), 1073–1074.

28. Use of Genstat and other software in graduate students' projects. *Genstat Newsletter* **24**, (1990), 27–34.

29. Recent achievements and adversities in anxious and depressed school-age children (with Goodyer, I.M. and Wright, C.). *Journal of Child Psychology and Psychiatry* **30**, (1990), 1063–1077.

30. Lifetime exit events and recent social and family adversities in anxious and depressed school-age children and adolescents – I (with Goodyer, I.M.). *Journal of Affective Disorders* **21**, (1991). 219–228.

31. Lifetime exit events and recent social and family adversities in anxious and depressed school-age children and adolescents – II (with Goodyer, I.M.). *Journal of Affective Disorders* **21**, (1991), 229–238.

32. Social influences on the course of anxious and depressive disorders in school-age children (with Goodyer, I., Germany, E. and Gowrusankur, J.). *British Journal of Psychiatry* **158**, (1991), 676–684.

33. Cortisol hypersecretion in depressed and recovered school-age children (with Goodyer, I., Herbert J. and Moor, S.). *Psychiatry Research* **37**, (1991), 237–244.

34. Fitting graphical models to multi-way contingency tables in GLIM. *GLIM Newsletter* **21**, (1992), 4–8.

35. Temperament and major depression in 11 to 16 year olds (with Goodyer, I.M. and others). *J. Child Psychol. Psychiat.* **34**, 8, (1993), 1409–1423.

36. Improving the precision of estimation by fitting a Generalized Linear Model, and quasi-likelihood. *GLIM Newsletter* **23**, (1994), 43–45.

37. Adrenal secretion during major depression in 8–16 year olds.
I. Altered diurnal rhythms in salivary cortisol and dehydroepiandrosterone (DHEA) at presentation (with Goodyer, I.M. and others). *Psychological Medicine* **26**, (1996), 245–256.

38. Adrenal secretion during major depression in 8–16 year olds.
II. Influence of comorbidity at presentation
(with Goodyer, I.M. and others). *Psychological Medicine* **26**, (1996), 257–263.

39. Temperament and psychopathology amongst siblings of probands with depressive and anxiety disorders (with Kelvin, R.G. and Goodyer, I.M.). *J. Child Psych. Psychiat.***37**, (1996), 543–550.

40. Adrenal secretion during major depression in 8- to 16- year olds.
III. Influence of cortisol/DHEA ratio at presentation on subsequent rates of disappointing life events and persistent major depression
(with Goodyer, I.M. and others). *Psychological Medicine*, **28**, (1998), 265–273.

41. Analysis of the human sex ratio using overdispersion models
(with Lindsey, J.K.). *Applied Statistics.* **47**, (1998), 149–157.
(This paper shows how to use glm() and the Poisson distribution for a ‘painfree’ method of fitting the ‘multiplicative’ generalisation of the binomial distribution, as introduced in my 1978 paper.)

42. Contingency Table
Wiley Encyclopedia of Biostatistics, edited by P.Armitage and T.Colton, (1998), Vol 1, 917–925. Also in second edition (2005).

43. Using S-Plus for teaching generalized linear modelling. *CTI Maths & Stats.* **9**, (1998), 17–20.

44. First Episode Major Depression in Adolescents: Affective, Cognitive and Endocrine Characteristics of Risk Status and Predictors of Onset
(with Goodyer, I.M. and others). *Brit. J. of Psychiatry* **176**, (2000), 142–149.

45. Recent life events, cortisol, DHEA and the onset of major depression in high-risk adolescents
(with Goodyer, I.M. and others). *Brit. J. of Psychiatry* **177**, (2000), 499–504.

46. An aspect of discrete data analysis: fitting a beta-binomial distribution to the hospitals' data
    The Design and Analysis of Potency Assays for Biotechnology Products, edited by F.Brown and A.Mire-Sluis, *Developments in Biologicals*. Basel, Karger, (2001), vol 107, pp 77-83.
47. Review: *Stat Labs: Mathematical statistics through applications* by Deborah Nolan and Terry Speed. Springer 2000. In MSOR Connections, vol 1 no 3, August 2001, p53.

http://www.mathstore.ac.uk/newsletter/aug2001

48. Comparing Contingency Tables: Tools for analysing data from two groups cross-classified by two characteristics
    (with J.P.Ferrie) *Historical Methods* **40**, (2007), 3–16.

49. Saccadometry: a new tool for evaluating the clinical status of pre-symptomatic Huntington patients
    (with C.A.Antoniades, S.L.Mason, R.A.Barker, R.H.S.Carpenter)
    NeuroReport **18(11)**, (2007), 1133–1136.

50. Correspondence: Using recently developed software on a 2×2 table of matched pairs with incompletely classified data
    (with Robin K.S.Hankin) *Applied Statistics* **59**, (2010), 377–379.

This is actually a generalization of paper no. 5 above, from Biometrika 1971.

For further details about the computation in this paper, please see Worksheet 20 of

http://www.statslab.cam.ac.uk/∼pat/misc.ps

These worksheets also contain an introduction to multivariate analysis, based on my pre-retirement graduate teaching. For an introduction to R and generalized linear models, based on my pre-retirement undergraduate teaching, please see

http://www.statslab.cam.ac.uk/∼pat/redwsheets.ps

To appear in J. of Statistical Software

51. Multivariate generalizations of the multiplicative binomial distribution: Introducing the MM package
    (with Robin K.S.Hankin)