BOOK REVIEWS


The aim of this book is to bring together the important facts and ideas connected with the observation that organisms have a limited lifespan. It is intended to be read by a wide circle of readers but particularly those who wish to research into the sources of data for the measurement of lifespan.

There is a summary of data on lifespan in the form of life tables and then, on the basis of those tables, certain hypotheses are suggested. A mathematical model is constructed to provide a quantitative explanation for the data studied. A general theory of lifespan is thus created.

The topic is of importance to epidemiologists in relation to a variety of puzzles on the subject of lifespan: the difference between the aging process, and the difference in lifespan between different countries and social classes. The authors make the point that some of the increase in the numbers of elderly people is now due to increased longevity, but there is no evidence that this will increase the proportion of disabled people in the community. If people live longer because they age more slowly the proportion of ill and helpless people might even decrease.

Another myth, about the heritability of long life, is then examined. The authors suggest that there is little correlation between the lifespan of children and their parents or (and this is the more reasonable experiment as they are more likely to suffer similar environmental hazards) between siblings. This lack of correlation has even been found to be so when long lived Drosophila have been selected through many generations.

Gompertz noted that there are two parts to mortality, one which grows with age and the other which is independent of age. The authors give details of these forces of mortality and their relationships in a number of different species, most startlingly in 400 female confined flour beetles. The dependence of mortality on age appears to be similar for the overwhelming majority of human nationalities. The point is made that the decline of human mortality in developed countries in the 20th century is almost exclusively accounted for by the age independent component of mortality. Age dependent mortality has remained practically unchanged despite radical social transformations, changes in the major causes of death and advances in medicine and health care.

The authors describe epidemiology as a sub-discipline of medical geography, which will delight the heart of a number of geographers. They show that a reduction in mortality may be compensated for by a growth in mortality from another, so that there is no overall change. It is suggested that the reason for this is that organisms are unreliable mechanisms with a high degree of redundancy, so that they are usually back up mechanisms available. There is always a certain probability that failure in different elements of the organism will coincide in time and the organism will therefore be "non-specifically vulnerable". At this point almost any disease, and some multiple diseases, may cause death. There is a tendency for this stage to become commoner with increasing age and the authors suggest that the date of non-specific vulnerability can be described as "having one foot in the grave". The large number of defects is part of what makes each person, or amoeba, an individual. We all have a unique set of defects--our friends more than most.

It is suggested therefore that the best strategy is to look at non-specific markers which show that individual humans may be becoming vulnerable to a number of causes of death. It is suggested that there is an underlying unitary mechanism in the origin of many diseases. It is possible that such an approach may be related to changes in the immune mechanisms.

This is altogether an interesting, if slightly technical book.

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This book is aimed primarily at research workers and postgraduate students in the social and behavioural sciences and gives emphasis to the exploratory phase of data analysis leading to the generation of hypothesis and speculation. On the whole, it does this admirably in a well written text containing numerous examples, extensive reviews of graphical and tabular methods, as well as nearly 300 references to source material.

The book is divided into four parts, entitled "Approaches to analysing data" (part I), "Exploring multivariate data" (part II), "Regression models" (part III) and "Latent variable models" (part IV). Part I briefly sets out the authors' own recipe for approaching the analysis of complex data, emphasising model building in particular, while part II gives a comprehensive treatment of graphical and table based multivariate methods. Comparison of parts I and II with the equivalent section of the more mathematically inclined Introduction to multivariate analysis by Chatfield and Collins finds the present book somewhat less clear at a first read. In their favour, Everett and Dunn are more comprehensive more often. Part III gives a clear account of (mainly univariate) regression methods, illustrated with many examples analysed using GLIM. While surprised to see such an extensive account of univariate methods in what is after all a multivariate book, I imagine this will be well received by readers less well grounded in the concepts of generalised linear models around whilst the bulk of this long section (over 100 pages) is based. I found the rendition lucid and accurate though perhaps a little too concise in parts for some readers.

Part IV covers factor analysis and covariance structure models, methods not normally covered in such detail in similar but more mathematical texts. Both methods are clearly and carefully explained. The well rehearsed arguments against and all use of factor analysis are considered here also; as might be expected, the authors give their support to the critical and careful use of this method. At 35 pages, this section is considerably shorter than I had expected, although of course much of the more general multivariate material is covered in part II.

Overall this is a good book marred by the kind of flaws associated with many first editions. Numerous typographical errors, particularly early on, and the need to skip forward several pages to find the graph or table associated with the text were enough to discourage me initially. On the other hand, excellent internal cross referencing to other relevant sections, summaries at the end of each chapter, and a good deal of critical evaluation of presented methods are extremely useful. I look forward to the second edition.

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The main concern of this book is with how general practice can maintain and increase the quality of patient care in the context of a more market orientated system. It splits into three sections. In the first chapter a comparison is made between two articles (by Martin Roland and Rosalind Eve) attempt to resolve the power to direct care which fundholding brings with the effects on non-fundholding practices, and the need to retain a central coordination of service priorities. Nick Bosanquet then puts a controversial but convincing argument that a substantial element of locally negotiated remuneration might paradoxically protect against a "supermarket versus corner shop" drive for economies of scale. David Taylor analyses primary health care according to the economic and managerial logic of the "new NHS".

In the second set of articles, dealing with the need to reconsider how medical manpower is deployed, Duncan Keeley puts the case for a professional hierarchy, as in hospital medicine, with a reduced number of principals who would manage associated teams of "junior" doctors and other health care workers. Steve Illiffe and Ursula Haug argue convincingly that present arrangements for 24 h care are a costly waste of resource and Geoffrey Marsh reiterates his well known view that by "sticking to their last" and maximising the skills of other professionals, general practitioners could increase their average list sizes to around 4000 patients per doctor.