of standard statistical software, but so too do many Bayesian analyses.

To sum up, the book is well written, clearly illustrated, and covers in detail material that has not been accessible in a single source. I very highly recommend this book to anyone interested in understanding the effects of measurement error or analyzing measurement error data with Bayesian models, or to researchers in this field.

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GOTELLI, H. J. and ELLISON, A. M. **A Primer of Ecological Statistics.** Sinauer Associates, Sunderland, Massachusetts, 2004. xviii + 510 pp. US$36.95/EUR32.90, ISBN 0-87893-269-0.

There are many introductory texts on statistics or biometry on the market. And for many ecologists *Biometry* by Sokal and Rohlf (1995) may be the reference book. However, this new book by Gotelli and Ellison is a welcome addition to the ever-growing literature of basic biostatistical texts.

On one hand, the text is well written and rich in all the basic statistical methods. The presentation of the 12 chapters is well organized into three subjects: (1) fundamentals of probability and statistical thinking, (2) design of experiments, and (3) data analysis. The methods are illustrated by classical data (e.g., Fisher's iris data) as well as original real-world examples taken from the authors' own research projects (e.g., ant species density in forest, photosynthetic rates of mangrove leaves). Plenty of precise graphics and readable tables, with self-explanatory (sub-) titles, are used across the text.

On the other hand, the authors do something that is rare for this sort of basic statistical textbook. Bradley Efron (1986) asked the community: Why isn't everybody a Bayesian? He concluded that this is an effect of the way students are introduced to concepts of probability theory and statistics. Probability is an abstract concept for many people. The authors present frequentist and Bayesian ideas side by side. Gotelli and Ellison are skilled in explaining the statistics and setting them in an ecological and historical context. They often use footnotes to not interrupt the flow of the main text. Some footnotes are about personalities. For example, along with the presentation of factor analysis Charles Spearman is referenced as its inventor together with a photo. But the reader learns also that factor analysis was used for IQ testing and this led to misuse and social depression. Other footnotes point the reader to philosophical debates, for example, Popper's logic of *scientific discovery* by *falsification*—which forms the basis of statistical hypothesis testing. However, this logic is not shared without doubt among other philosophers! I believe these are important details, which can fruitfully be used to give students a break during lectures and start discussions.

Overall, there is much more to learn from this book than just the technical details of exemplary applications of the basic statistical methods for ecologists. The only critique I have is that the authors do not explicitly cite statistical codes of conduct; however, they at least discuss data storage and its scientific and legal implications. Again a footnote reminds the reader of the history of electronic storage media from paper tapes to DVDs along with estimates for their potential lifespan.

And lastly, as should be commonplace today, the publisher's web page links the interested reader to a list of data sets and software code (SPLUS and WINBUGS) as well as a list of errata.

References

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LI, W. K. **Diagnostic Checks in Time Series.** Chapman & Hall/CRC, Boca Raton, Florida, 2004. xiii + 196 pp. US$69.95/EUR66.50/£42.99, ISBN 1-58488-337-5.

There exist many monographs on time-series analysis. However, diagnostic checking usually plays a minor role in these books—despite its importance for modeling in practice. The present book fills this gap in that it is solely devoted to this topic.

A major topic in the book is a portmanteau goodness-of-fit test based on the residuals of the model. More precisely, the empirical autocorrelation function of the estimated residuals is tested under the hypotheses that the corresponding theoretical residuals are forming a white noise sequence—thus taking into account the time-series structure of the data. This typically leads to an asymptotic chi-squared distribution for the squared autocorrelations. This test is the key method in the whole book and it appears again and again in the different testing situations (e.g., with the residuals of certain nonlinear models, for multivariate models, tests for Granger causality, tests for ARCH, tests for long memory, etc.). In addition, there are variants of the method including finite-sample corrections, a robust version, and tests based on squared residuals (as a general test for nonlinearity).

The relation of the test to Lagrange multiplier tests is investigated in some detail. Furthermore, the score test is discussed