pean Association of Editors of Biological Periodicals. The group is also known as ELSE (European Life Science Editors). ELSE acknowledges that English has replaced Latin as the language of knowledge. Specific problems inherent in writing in English for Russian or Scandinavian authors are not treated in this manual: booklets addressing specific problems for special groups will be published as supplements to the "core" manual. The ELSE manual being reviewed is similar to many style manuals but is more encompassing in scope. After all, it is concerned with the clarity of international information.

Writing Scientific Papers in English is a worthwhile investment: readable without cuteness; specificity with room left for the style requirements of other manuals (*Publication Manual of the American Psychological Association,* 2nd Ed., 1974); and references to some of the manuals in the different disciplines and journals that now exist. In effect, the "core" manual is a good overview and reference book. Strunk & White (*The Elements of Style,* 1972, MacMillan) is included in the reference section as is the University of Chicago Press's, *A Manual of Style.* I think that Roget's *Thesaurus* (Signet, 1968) would have been complimentary to Appendix 5 (Expressions to Avoid). With or without Appendix 5, a thesaurus is helpful.

The book is inexpensive—it can be used in undergraduate as well as graduate courses or as a text for most scientific or non-scientific courses that hope to train students to write acceptably. The language used is close to journalistic style, so a researcher wanting to prepare a paper in English should not have difficulty with idioms or convoluted grammar.

Fourier Analysis of Time Series: An Introduction

Peter Bloomfield
New York: John Wiley & Sons, 1976. 258 pp., $23.50

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According to the title, the book is an introduction to Fourier Analysis. It is not. According to the overview on the back cover, only mathematics up to the level of calculus is required. Not so. After a brief introductory chapter, the author delves into least squares amplitude and phase estimation using partial differentiation (p. 11). The text as a whole attempts to

explain the theory of frequency and time series analyses at an introductory level but, to me, falls short because of poor organization, stilted writing, and the bane of all introductory texts—too few graphical representations of the major points of the different steps of the analyses. The figures that are used tend to be restricted to only a few examples where many different concrete examples are needed.

The text is also somewhat confusing in the repeated use of terminology that is dated, e.g., "periodogram." The inclusion, as appendices in almost every chapter, of routines and subroutines for the reader's use are also dated. Most computing facilities have long had the *BMDX* (Dixon, W.J., 1972), *BMDP* (Dixon, W.J. and Brown, M.B., 1979) and *SAS* (SAS Institute, 1979) "canned" programs that are readily available to the new user. In addition, collections of routines such as *IMSL* (International Mathematical Statistical Library Inc., Release 8/1980) are inexpensive and also available at most computing installations.

Prior to reading this book, which I cannot recommend, I would suggest that the article by C. I. Bliss on Periodic Regression in Biology and Climatology (*Connecticut Agricultural Experimental Station Bulletin 615,* 1958) be read thoroughly. The next book to read, an inexpensive paperback well worth the price, is a collection of papers by E. Parzen (*Time Series Analysis Papers,* Holden-Day, San Francisco, 1967). The articles range from the readable to the sweatable. Upon completion of selected papers by Parzen, I strongly recommend the classic by R. Blackman and J. W. Tukey (*The Measurement of Power Spectra, from the Point of View of Communications Engineering;* 1959, Dover Press, New York).

After completing the above readings, one would be well advised to read some of the older, as well as more recent, literature on missing values in time series and spectral analyses. I. Jurkevich has written an excellent paper on *Non-Linear Regression Analysis and Analysis of Variance of Periods Defined by Irregular Observations* (NASA, CR465, 1966). C. L. Morbey's *Brief Note on Searching for Periodicities in Data Obtained at Irregular Intervals* (*Dominion Astrophysical Observatory, XIV* (9), Victoria, B.C., 1973) is brief, but contains a fast subroutine for computing and plotting. D. D. Meisel's "Fourier Transforms of Data Sampled in Unequally Spaced Segments" (*The Astronomical Journal, 84,* (1), 1979, 116-126) is not only the most recent article but one of the few to hint at the importance of Hilbert space definitions as a unifying conceptual basis for past and future research.

Lest the reader think that the frequency domain is for engineers and astronauts, it is only necessary to note the quality of behavioral research being conducted by John M. Gottman ("Detecting Cyclicity in Social Interactions," *Psychological Bulletin, 86,* (2), 1979, 338-348). The work of

S. Porges, et al., on using time-series analyses to investigate respiratory sinus carrythmia and methylphenidate has revealed some intriguing relationships between respiration and cardiac activity using cross-spectrum analyses (*Unpublished manuscript,* 1980, Department of Psychology, University of Illinois; and in *Child Development, 46,* 1975, 727-733). G.C. Galbraith ("Cross-spectral coherence analysis of central nervous system coupling patterns," *Proceedings of the Symposium on Biomedical Engineering, 1,* 1966, 341-344) has contributed very basic information that can be used by biologists, psychologists, internists, as well as chemists.

The above articles serve as a much better introduction to the time and frequency domains than the Bloomfield book. As I point out in a different review, the tables have been turned on psychologists in one of their speciality areas: the chemists have taken factor analysis and greatly improved upon the technique. We *need* these type of interactions between disciplines of study.

Introduction to Bivariate and Multivariate Analysis

R.H. Lindeman, P.F. Merenda, and R.Z. Gold
Glenview, IL: Scott, Foresman and Company, 1980. 444 pp., $15.95

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Multivariate analyses have become the rising star in psychological and sociological research. Multivariate courses are now being required as part of graduate training. Computer programs, simple and complex, have been developed specifically to meet, or perhaps encourage, the increased use of multivariate analyses.

The major drawbacks in the use of multivariate statistics have been twofold: (1) the need for a text that is more advanced in depth and breadth of coverage than some quik-texts (e.g., M. Tatsuoka, I.P.A.T., *Selected Topics in Advanced Statistics,* 1970; and *Data Analysis Strategies and Designs for Substance Abuse Research,* 1976, National Institute of Drug Abuse, Research Issues #13), yet, at the same time, introducing the basis of theory and application in a more readable and understandable format than the classics (e.g., Finn, *Multivariate Statistics,* 1971); and (2) the conceptual problem of understanding the