criminal justice system as a means of social control, not justice, are correct. It may well be that the pessimism of so many of the book's contributors derives from the excellent way in which the system fulfills this implicit mandate.

Biofeedback for the Clinician

Edward B. Blanchard and Leonard H. Epstein

A Biofeedback Primer. Reading, Mass.: Addison-Wesley, 1978. Pp. 218. $4.95 paper.

Reviewed by RICHARD J. DAVIDSON

Edward B. Blanchard is Professor of Psychology and Director of Clinical Training at the State University of New York at Albany. A Stanford University PhD, he held previous faculty positions at the University of Georgia, the University of Mississippi Medical Center, and the University of Tennessee Center for Health Sciences. Blanchard wrote chapters in Hersen, Eisler, and Miller's Progress in Behavior Modification, Vol. 4 *and in Brady and Brodie's* Controversy in Psychiatry. *Leonard H. Epstein is Assistant Professor of Psychiatry at the University of Pittsburgh School of Medicine. An Ohio University PhD, he held previous positions at the University of Mississippi Medical Center and Auburn University. Epstein wrote chapters in Hersen, Eisler, and Miller's* Progress in Behavior Modification (*with R. Katz and S. Zlutnick*) *and in Ferguson and Taylor's* Advances in Behavioral Medicine (*with R. Wing*), *both in press.*

Richard J. Davidson is Assistant Professor of Psychology at SUNY Purchase. He was previously a Teaching Fellow at Harvard University, where he earned his PhD. Davidson has also been an NSF Fellow and was recipient of a NATO award to participate in the Conference on Event-Related Brain Potentials in Konstanz, West Germany, in August 1978. He is coeditor with J. M. Davidson of The Psychobiology of Consciousness *and with D. J. Goleman of* The Psychology of Consciousness: Readings, *both in press.*

BIOFEEDBACK is by now a term familiar to many individuals outside the mental health professions. Following some pioneering but preliminary research in the 1960s, the news media, with the help of a band of zealous investigators, began to proclaim biofeedback as a therapeutic panacea. Claims made about the effects achievable with this electronic tool ranged from the cultivation of meditative states to curing hypertension. Blanchard and Epstein provide in this volume a sober and highly readable review of research related primarily to the clinical applications of biofeedback. The book is cautiously written and will be of help to clinicians in evaluating the efficacy and utility of biofeedback in the treatment of a variety of disorders.

The major portion of the book consists of six chapters concerned with different response systems that have all been modified with the aid of biofeedback, including cardiovascular, muscular, EEG, gastrointestinal, and sexual-response systems. These chapters are preceded by a brief introduction that provides some definitions and a historical overview.

Cardiovascular biofeedback (not surprisingly, given Blanchard's contributions in this area) occupies slightly more than 40% of the text in this volume. The authors provide a brief outline of the physiological basis of various cardiovascular measures in addition to discussing measurement techniques. Major basic research studies are then presented, followed by a discussion of clinical applications. Frequent summaries and comment sections help highlight important points, and although these may result in excessive repetitiousness for the experienced investigator, they will be of value to the unacquainted clinician.

THE presentation of research findings is almost always in the absence of any theoretical context. For the scientist interested in the mechanisms of biofeedback effects, this can sometimes be frustrating. For example, a study is described that evaluated the differences between auditory versus visual analog feedback for heart rate with the not-surprising result that there were no differences between modalities. In the section on muscle responses, the issue of feedback modality is again addressed, and here it was found to be more important. Although the authors do not attempt to grapple with the theoretical significance of such findings, work on biological preparedness and learning may be relevant. For example, it would be useful to evaluate the impact of autoshaping on feedback control of certain biological processes, with feedback stimuli both reflexively eliciting the desired response as well as providing information about achieving the criterion.

A more theoretically based perspective would also have benefitted their section on muscle regulation and anxiety. Recent work suggests that anxiety may be meaningfully differentiated into underlying cognitive and somatic subcomponents. It may well be the case that training in different response systems would maximally attenuate anxiety in each of these two modes.

In their discussion of the clinical research, the authors are appropriately cautious in evaluating the various claims made about the effectiveness of biofeedback for a variety of disorders. This is particularly commendable since so much of their own work has been concerned with the application of biofeedback to clinical disorders. Blanchard and Epstein attempt to ascertain whether it is the feedback per se that might have resulted in symptom reduction, rather than the nonspecific effects associated with all treatments. In so doing, they call attention to varieties of experimental methodology, which again should be of benefit to the clinician.

OVERALL, this is a book that will be quite useful to practitioners who are not familiar with research on biofeedback. The book presents a well-written, easily understandable overview to the field.

This was the intended purpose and the authors have realized this modest goal. The authors manage to present many sets of complex data in a readable and accurate fashion. One minor historical error that deserves correction is that the EEG was first discovered by Richard Caton in 1875, not by Berger in 1929 (the latter first observed EEG in humans). One could fault the authors for omitting from their discussion work that places the findings in a broader theoretical context. However, readers wishing such a treatment have other volumes available to them (e.g., Schwartz & Beatty, 1977). Any clinician or student desiring a basic introduction to the clinical application of biofeedback would find this book to be a useful starting point.

Recent Developments in Nonverbal Communication

Aron W. Siegman and Stanley Feldstein (Eds.)
Nonverbal Behavior and Communication. Hillsdale, N.J.: Erlbaum, 1978.
Pp. xii + 400. $19.95.

Reviewed by SHIRLEY WEITZ

Both editors are Professors of Psychology at the University of Maryland Baltimore County, where Aron W. Siegman is past Chairman of the Department of Psychology and is Research Professor of Medical Psychology at the UM School of Medicine. A Columbia University PhD, he has been Professor and Chairman at Bar-Ilan University (Ramat-Gan, Israel), Director of Professional Services for the Israeli Prison Service, and Visiting Research Psychologist at the University of Zurich Psychologisches Institut. Siegman is coeditor with B. Pope of Studies in Dyadic Communication. *Stanley Feldstein, also a Columbia PhD, is past Associate Chairman at UMBC. He was previously Associate Professor of Psychiatry at New York Medical College, Project Director and Faculty Member at the William Alanson White Institute, and Research Associate in Psychiatry at Columbia University College of Physicians and Surgeons. Feldstein is coauthor of* Rhythms of Dialogue *with J. Jaffe. Siegman and Feldstein are also coeditors of* Of Speech and Time: Temporal Speech Patterns in Interpersonal Contexts *(in press).*

Shirley Weitz is Associate Professor of Psychology, the Graduate Faculty, at the New School for Social Research. A Harvard University PhD, she was previously a faculty member at Wheaton College. Weitz is author of Sex Roles: Biological, Psychological and Social Foundations *and editor of* Nonverbal Communication: Readings with Commentary (2nd ed. *forthcoming*).

THIS book is a generally successful attempt to present the current state of research in nonverbal communication. Some omissions and idiosyncratic inclusions do mar the general excellence of the collection, however.

Siegman and Feldstein have compiled 11 original papers on most aspects of the field, each written by an authority in that area. To cover completely the entire field of nonverbal communication in one book is quite difficult, and in this case, the research interests of the editors have limited the coverage in ways that should be made clear to the prospective reader. Very little is offered to the reader looking for the "body language" approach or the more scientific variants thereof. Throughout there is a de-emphasis on psychodynamic interpretations of movement and expression, although there is some coverage in the chapters by Ekman on facial expression and Siegman on paralanguage. Much more time is spent on cognitive variables, as in the chapters on conversational control functions of nonverbal behavior by Rosenfeld, on the phonemic clause by Boomer, and on conversational chronography by Feldstein and Welkowitz.

This volume will probably be most useful to those already well acquainted with the general framework of nonverbal communication research. Although the authors offer the book as a text for advanced undergraduates and graduate students, such readers are likely to be left adrift in a sea of data and miss the more general shape of the field. No indication of the overall nature of theory and research is given, except what individual authors offer in their own chapters. The editors provide a 14-page introduction, most of which is given over to brief synopses of the papers. The papers themselves are not connected to each other, but separately many do give excellent coverage of their respective fields.

Perhaps the most successful paper is that by Ralph Exline and B. J. Fehr on visual interaction. In addition to a clear presentation of the literature (to which Exline has been a prominent contributor), the authors use the framework of semiosis (the study of signs) to organize the material. The semiotic categories of syntactics, semantics, and pragmatics do provide a useful heuristic device for the field, especially in the hands of these authors. A companion paper on pupillometrics nicely complements the Exline and Fehr piece, providing a good discussion of a field not usually covered in books of this kind. Written by Eckhard Hess (one of the primary researchers in this area) and Slobodan Petrovich, this chapter is one of the worthwhile idiosyncracies of the book. Regrettably, Hess and Petrovich speculate but little on the possible relevance of pupil size changes for interaction itself, but that may well reflect the state of knowledge in the field.

MUCH more coverage of paralanguage and the structures of speech itself