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clination and residential (i.e., developmental) environment. For example, it is also important to examine behavioral characteristics of the crime event itself, namely the concept of "journey to crime," and its ecological counterpart, "attraction to opportunities." When these distinctions are made, it becomes clear that the crime and environment perspective attends to much more than simply gross statistical associations between offender characteristics and area attributes. In another example, Harries cites my own work in regard to violent crime (specifically assaults and robberies), which reveals that the ecological characteristics of an area determine the overall patterns of social activity that occur there, and hence also the kinds and nature of conflicts that arise. Differences between assaults and robberies with respect to racial composition of the offender-victim dyad and number of perpetrators were found to occur as a function of differences in social area types in which these offenses occurred.

Overall, the focus on crime-specific analysis has also mandated a renewed focus on the nature and meaning of the independent variables used in crime and environment analyses. In particular, as the focus on crime is increasingly specific with respect to type of behavior (in terms of interaction patterns, offender–victim relationships, seriousness of injury or loss, for example), more conceptual and empirical attention needs to be given to the behaviorally relevant component or meaning of the independent variables used in these analyses. A prime example of this point is discussed by Harries in regard to research on the relationship between crime and variables of the physical environment (chapter 4) measuring density and crowding. Although macro-level correlations are commonly observed, the meaning and measurement of density and crowding measures at the micro-environment level may be different from overall population density at the macro-level. We infer that these meanings are different on the basis of findings from the micro-environment studies that indicate little or no relationship with crime using residential population density as a measure but indicate a positive association using household overcrowding as a measure. Such differences raise obvious questions about the social psychological dynamics or effects of crowding in regard to criminogenesis.

The need to understand more about the measurement and meaning of environmental variables becomes clear when one attempts to understand both the meanings and mechanisms of the reported associations between crime and other factors of the physical environment. In fact, Harries's concluding remarks in that chapter reflect the major theme of his work and the reason for its importance to ecological, social, and community psychology. He writes,

> It should be reemphasized that it is not the intention here to resurrect the notion that crime is "determined" by the physical environment. In general, the strongest statement that is justified is that the physical environment offers differential opportunity patterns, fluctuating in both time and space. In a changing urban environment, for example, modifications in transportation and communication networks and flows, land use changes, variations in activity patterns, and climatic seasonality may all affect the complex of interactions associated with criminogenesis. (p. 116)

When the study of crime and environment is appropriately conceptualized and properly conducted, it is fertile ground not just for advances in knowledge concerning the etiology of crime but also more generally for comprehending the development and expression of individual–environment interactions. If one's ekistic senses or perceptions need developing, sharpening, or refreshing, then Harries's book is a thought-provoking stimulus. ■

The Best of Biofeedback

Niels Birbaumer and H. D. Kimmel
(Eds.)
Biofeedback and Self-Regulation
Hillsdale, N.J.: Erlbaum, 1979. x + 469
pp. $29.95.

Review by
Richard J. Davidson

Niels Birbaumer is professor of clinical and physiological psychology at the Psychologisches Institute der Universitat Tübingen in the Federal Republic of Germany. He is editor of Progress in Clinical Psychology *and coeditor of* Archives of Psychiatry and Neurological Sciences. ■ *H. D. Kimmel is professor of psychology at the University of South Florida. He has written* Experimental Design *and edited* Experimental Psychopathology. ■ *Richard J. Davidson is associate professor of psychology at the State University of New York College at Purchase. He coedited* Consciousness *with D. Goleman and* The Psychobiology of Consciousness *with J. Davidson. Davidson will be senior editor of the series* Consciousness and Self-Regulation: Advances in Research *beginning with Volume 3.*

Biofeedback has emerged as an area of major interest in psychology and other allied disciplines. The literature on this topic has been progressively burgeoning over the past two decades, in both basic and applied research. The field appears to be maturing with the blinding enthusiasm characteristic of some workers in the late 1960s and early 1970s yielding to more balanced assessments of the strengths and weaknesses of the method. This volume includes contributions on a wide range of issues in both basic and clinical biofeedback research which, for the most part, reflect such a balance.

Biofeedback and Self-Regulation emerged from an international conference that took place near Tübingen, West Germany, in November 1977. The goal of the conference and of this volume was to provide a comprehensive overview of the experimental, theoretical, and clinical work that together reflect the broad field of contemporary biofeedback research. The editors indicate in their introduction that two criteria guided their selection of the contributions to this volume: (a) that they reflect appropriate scientific rigor and (b) that together the contributions should portray accurately the current scope of biofeedback research. For the most part, the editors have accomplished their goal.

The book is divided into three major parts that are each broken down into a number of smaller sections. The first third of the volume contains contributions on mechanisms and methodological issues in visceral learning. Thomas Mulholland, one of the early pioneers in this field and author of the first chapter in the volume, explains the relevance of control theory concepts to experimental research in gen-

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research in general and to biofeedback in particular. The chapter contains an extremely lucid discussion of the distinction between open and closed loop control systems, and Mulholland applies these concepts in his analysis of the biofeedback process. It is clear from this chapter that Mulholland continues to provide significant conceptual leadership to the biofeedback field.

The second chapter by Gary E. Schwartz continues the discussion of systems theory concepts as they apply to biofeedback. Schwartz describes his provocative concept of disregulation (a disturbance in regulatory negative feedback loops) and suggests how it might be applied to biofeedback and behavioral medicine.

The second section of Part 1 contains a number of interesting contributions on visceral perception and awareness as they relate to self-control. Brener et al.'s chapter on the relation between cardiac discrimination and control presents additional data and theory that extend his well-known research on this topic. The chapter by Lutzenberger et al. describes an interesting experiment where subjects were provided with feedback contingent on the covariation between their subjective ratings of arousal and measures of heart rate, skin conductance, or both. The final chapter by Roberts and Marlin in this section is an important theoretical contribution that extends well beyond the biofeedback area. The chapter is concerned with the question of whether conscious processing of information about the target response is necessary for the control of that response via feedback. The authors also present a discussion of the conditions under which verbal reports of visceral responses are veridical.

The third section of the first part contains contributions on the role of language and other cognitive processes in physiological self-regulation. Lang's chapter contains an excellent summary of his recent work on the effects of particular components of emotional imagery on autonomic processes. The data he presents contain a number of interesting examples of response specificity and fractionation that deserve more explicit recognition and comment than is provided.

The two contributions comprising the final section of Part 1 concern the conditioning and extinction of anxiety. In his chapter, Borkovec extends his two factor theory of anxiety and considers the contributions of autonomic perception and cognition. The chapter by Ohman and Hugdahl contains an excellent review of their recent findings in the systematic research program Ohman and his colleagues have carried out on the application of biological preparedness concepts from the animal literature to an analysis of human fear and phobias.

The second part of the book presents a wide array of research on the self-regulation of cardiovascular and central nervous system processes. In contrast to Part 1, the second part contains much less material of a theoretical nature and consists largely of the presentation of empirical findings. These studies were for the most part designed to investigate variables that might affect different types of biofeedback performance. One of the more original chapters in the cardiovascular section was written by Furedy. He discusses the combined use of operant and classical conditioning procedures in cardiac self-regulation. The issues he touches upon have both practical and theoretical importance.

The section on EEG biofeedback contains mostly reports of empirical studies, many of which have not been previously published in journal format. The variability in the quality of these chapters will convince most readers that the initial presentation of empirical findings benefits significantly from rigourous pre-publication review. I suspect that some of the studies presented in this section contain methodological inadequacies of a sufficiently serious nature that they would not receive a favorable review from the standard journals in the field, while the presentation of findings in other papers would have been substantially improved by critical feedback. A notable exception to this general impression is the chapter by Beatty and O'Hanlon, which reports on additional findings in their well-conceived research program on EEG theta feedback and vigilance performance.

All therapies involve patient compliance, or more appropriately stated, they all involve patient self-regulation. There is not a single intervention that does not in one way or another involve self-regulation on the part of the person.

The third section of Part 2 contains a number of excellent contributions on CNS–cardiovascular interactions that highlight how biofeedback procedures can be utilized as research tools to help elucidate the physiological substrates of particular response systems. Engel's chapter should be required reading for anyone engaged in research on heart rate biofeedback. The chapter by Miller and Brucker presents some intriguing data on cardiovascular self-regulation in patients with spinal cord lesions. The findings they report illustrate how the study of this population can yield important practical benefits for spinal patients displaying severe postural hypotension and also contribute significantly to the theoretical literature on the mechanisms underlying cardiovascular biofeedback.

The final part of the book is concerned with the clinical implications of biofeedback. The first section contains contributions on the use of biofeedback to control anxiety and includes research on EMG, cardiovascular, and EEG self-regulation. The chapters vary in quality, with the one written by Reeves, Shapiro, and Cobb standing out as the most solid. These investigators present additional data in their work on the effects of cardiovascular self-regulation in modulating response to cold pressor pain. The new findings shed light on the complex interactive effects of biofeedback and instructional set in the modification of both heart rate and pain perception.

The final section of the book is comprised of four chapters that focus upon the clinical utility of biofeedback-assisted modification of a variety of response systems in treating specific dysfunctions. The report by Cott, Pavloski, and Black suggests that sensorimotor rhythm control may not have been the critical variable in producing seizure reduction in most previous research on the use of biofeedback-assisted augmentation of this response in the treatment of epilepsy. The final chapter by Denver, Grove, Leblond, and Latulippe presents an intriguing set of data on the effects of hand temperature biofeedback in the modification of self-report and biological responses in patients with rheumatoid arthritis. The findings suggest that for some subjects a change in a basic systemic process such as erythrocyte sedimentation rate may follow biofeedback intervention. Although only suggestive, the implications of such data are important and should be replicated and explored in more detail.

This book contains a wealth of new data culled from all the major areas of contemporary biofeedback research. The quality of research in this field continues to improve, and most of the contributions to this volume reflect this development. The major fault with this book is the inclusion of an excessive number of chapters that consist exclusively of the presentation of original empirical findings. The organization of these papers is not different from that of journal articles, except that these chapters do not include an abstract. In my view, except in unusual circumstances, book chapters should not serve as a forum for the presentation of previously unpublished data from complete studies, particularly when, as in this case, quality control is considerably below journal standards. Nevertheless, with the exception of a handful of methodologically inadequate papers, Birbaumer and Kimmel's *Biofeedback and Self-Regulation* presents an impressive overview of current research in this expanding field. ■

Common Factors Theory of Psychotherapy: A Researcher's Clinical Treatment

Sol L. Garfield
Psychotherapy: An Eclectic Approach
New York: Wiley-Interscience, 1980.
xi + 315 pp. $19.95

Reviewed by
Stephen Armstrong

Sol L. Garfield is professor of psychology at Washington University in St. Louis, Missouri. He has received the APA Distinguished Professional Contribution to Knowledge Award and the Distinguished Contribution to Clinical Psychology Award from APA's Division of Clinical Psychology. He is author of Clinical Psychology: The Study of Personality and Behavior *and coeditor of* Handbook of Psychotherapy and Behavior Change, 2nd ed., *with A. E. Bergin.* ■ *Stephen Armstrong is a clinical psychologist and chairman of the Research Committee in the Department of Psychiatry at Baystate Medical Center. He is also currently assistant clinical professor at Tufts Medical School and associate in psychiatry at the University of Massachusetts Medical School.*

Sol Garfield has written this text because of the multiply segmented, chaotic, and scholastic "orientations" within the psychotherapeutic professions. He proposes an "eclectic approach" to psychotherapy by selecting what appears best in various doctrines, methods, or styles of therapy and by rejecting the rest. He states clearly his criteria for selecting certain doctrines or practices, namely, that the therapist's actions must fit his or her knowledge of more than one puristic therapy, must match the client's problem, and must take into account the client's expectations—all cemented to a granite research foundation. Readers will appreciate that Garfield has set himself no simple task, especially since modern psychotherapy research findings indicate that measured treatment outcomes derive largely from factors common to all forms of treatment, rather than from the inherent specific superiority of one orientation over another.

This "common factors" theory upsets quite a few professional psychotherapists, since the theory appears to imply that "any" person could conduct "any" treatment for "any" problem with "any" client and that the therapeutic outcome stems from the magic of having an explanation, any explanation, that is coherent to the client. Nothing is further from the truth, and Garfield implies nothing of the kind. But he wants therapists to address a research reality—that we cannot state with much certainty that one orientation gives remarkably better results than any other, provided that neither is harebrained.

Garfield's own psychotherapeutic orientation, then, is pragmatic, factual, and modest—a rather refreshing point of view. Garfield further says that research and clinical savvy will teach us what we can do to make our treatments more specific, efficient, and effective. In this regard, he appears to have some affection for behavioral therapies, which are more specific than, for example, a number of existential therapies. Yet he does not dismiss other treatments merely because they are not "specific"—he gives several clear examples of the less operationalized treatment being the one of choice, because the client needed it. This book, therefore, has to be regarded as a statement from the heart of a Boulder scientist-practitioner, wherein knowledge is combined with clinical judgment.

Many of us try to make this same synthesis and appreciate how hard the task is. Research methods themselves can clumsily grind up the hypothesis, therapist, client, and findings, leaving a rather pulpy mess that may take years to dry out. Garfield's knowledge of the set of "client variables" is encyclopedic, and he also handles well the problems of what therapist qualities contribute to therapeutic success. However, competent psychotherapy research is somewhat difficult to find (and expensive to generate). Garfield is thus left in the somewhat awkward spot of saying that even though we "know" relatively little (from a research perspective), we could probably predict therapeutic outcome better if we could articulate the fit or match, specifically, between a client's problem, the client's thoughts or expectations about therapy, and the therapist's technical repertoire.

"Pure" clinicians likely will be disappointed with this sort of reasoning. The entire section on the conduct of treatment occupies only 53 pages and appears to be somewhat nonspecific. Also, therapists who treat clients with severe disturbances or bizarre behavior will not find here much that is particularly useful. Garfield does not mention pharmacotherapy at all, nor really the research on treatments combining psychotherapy and drugs. And the medically oriented among us (or those of us who work in medically oriented settings) will find diagnostics, mental status, psychological and social history, and so forth, ignored completely.

In summary, then, the research elements of this book are highly specific, and all point toward the potency of nonspecific, common factors in psychotherapeutic outcome. The clinical elements are less specific, but are spoken with a concern and emphasis that merit reading. ■