Dreyfus's psychological analysis of the development of expertise is much less compelling than previous computational accounts emphasizing the compilation and composition of knowledge with practice (Anderson, 1983).

Kobsa is undoubtedly correct in his argument that computational models are not theories about mechanisms but rather the mechanisms themselves. More abstract theories at the computational (Marr, 1977) or task analysis (Newell & Simon, 1972) level are required to explain the mechanisms implemented in actual programs. I would add that the implemented mechanisms do explain the behavior they generate, thus adding a critical level to the hierarchy of explanation.

Other matters

The editor's rather baroque, diagrammatic organizational scheme, presented in the introduction and the final chapter, is wholly inadequate to characterize the contents of this book. One of the chapters, Klix's psychological study of cognitive efficiency, seems not to fit at all; it is an unsophisticated model of analogy recognition, lacking consideration of the essential aspects of analogical reasoning: search, mapping, tweaking, and application (Holland, Holyoak, Nisbett, & Thagard, 1986).

The book could have benefitted a great deal from the inclusion of other relevant philosophers such as Dennett, Fodor, Haugeland, and Pylyshyn. Dennett (1978) has espoused an instrumentalist view of intentionality. He argues that an intentional system's behavior can be explained and predicted by ascribing intentional states to it. In his analysis, computer programs could be considered intentional.

One of the more interesting chapters is Neumaier's Wittgensteinian view of AI. Although Wittgenstein died just before the birth of AI, he had stressed the explanatory value of theory and the need for outward verification of inner states, both of which are quite consistent with the practices of AI and of cognitive science. However, because AI programs do not participate in the "bustle of human life," they would not be likely Wittgensteinian exhibitors of intelligence. Neumaier further notes that in AI it is not intelligence that is artificial but the mechanism by which intelligence is realized.

Putnam's chapter, reprinted here from an unnamed source, identifies what seems to be a deep problem for both mental philosophy and computational models, whether of the AI or psychological type. The problem examined by Putnam concerns the inherent difficulty of establishing sameness of meaning in two or more different mental representations. He argues that this can be done only by examining the extensions of the representations as they exist in the collective minds of the participants' communities. The implications of this problem for AI, cognitive science, and psychology may be quite serious.

This book is somewhat useful because it has brought this material together. However, it is not a particularly good introduction to AI or computational modeling for psychologists or other nonspecialists. (A much better introduction is provided in Boden [1988].) Exclusion of some of the present chapters and inclusion of others would have yielded a stronger book.

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A Psychiatric Perspective on Affective Disorders

J. John Mann (Ed.)
Phenomenology of Depressive Illness
New York: Human Sciences Press,
1988. 263 pp. ISBN 0-89885-369-9.
$34.95

Review by
Michael L. Raulin

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The occasional feeling of depression is a nearly ubiquitous experience, but, fortunately, the experience of severe depressive illness is considerably less common. This volume seeks to describe the variants of severe affective disturbance and the currently accepted medical treatments for these disorders.

Phenomenology of Depressive Illness is apparently the first in a series of volumes on depressive illness. As such, its purpose appears to be to describe the various types of affective disorders encountered in psychiatric clinics and hospitals. The description of these disorders is very close to atheoretical, with one exception: The assumption that affective disorders represent a disease process with a primarily biological etiology forms the basis for the entire volume. Many psychologists may find this perspective unnerving or at least annoying. The causal chain of events from biological risk factor to onset of symptoms must certainly in-

volve psychological as well as biological components. Psychological perspectives are not covered in this text, however, and are not even mentioned in many chapters. However, the authors should not be faulted for their perspective, and the title of the book is truly an accurate reflection of the content.

For an edited text, the range of authorship is remarkably narrow; 90% of the authors work in the New York City area and 70% come from the editor's home institution (Cornell University Medical College). In spite of this narrow geographic and institutional range of authorship, several of the chapters are written by recognized contributors to the field. The quality of the reviews is generally high, even though the focus is narrow. As a succinct review of diagnostic and medical treatment issues in affective disorders, this book is an excellent source.

This volume is organized around the various subtypes of affective disorders (e.g., bipolar, delusional, atypical, childhood, geriatric, etc.), with typically one chapter devoted to a review of each subtype. Introductory chapters provide some interesting historical and background information. Later chapters describe each disorder in detail, with special attention to issues of differential diagnosis. Most of these chapters also include a review of currently accepted pharmacological treatment procedures for the disorder. Although much of the information provided would not be of direct practical assistance to practicing psychologists, this volume does give the psychologist an excellent introduction to the psychiatric perspective on severe affective disorders and, thus, may facilitate communication between disciplines.

A few minor annoyances appear in a generally well-written volume. Some of the authors have a tendency to overuse abbreviations, which greatly increases the work of the reader. Some terms that are well-known to researchers in the field, such as *bipolar I, bipolar II,* and *Research Diagnostic Criteria,* or RDC, are occasionally introduced without being defined. These problems are relatively rare, however, and should not detract seriously from the work.

This is an interesting volume that provides a particular perspective on affective disorders. It is definitely not mainline psychology, but it does not pretend to be. This text may not be for all psychologists, but it does a credible job of presenting a psychiatric view of severe affective disorders. ■

A "Pocket Primer" of Stress Response Measurement

George S. Everly, Jr. and
Steven A. Sobelman
Assessment of the Human Stress Response: Neurological, Biochemical, and Psychological Foundations
New York: AMS Press, 1987. 134 pp.
ISBN 0-404-63254-8. $32.50 (institution); $18.00 (individual)

Review by
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Over the past half century there has been a proliferation of techniques for the measurement of responses to stress. Researchers not only have strengthened their armamentarium within specific levels of measurement (e.g., improved techniques for physiological assays of neuroendocrine hormones and improved methods of measurement of stressors or stressful life events) but have also added levels of complexity to the description of the human stress response by approaching the problem of understanding stress from a truly multivariate perspective. The present volume reflects this multilevel approach to the assessment of the stress response and provides a sketch of the various theoretical and practical concerns of stress researchers.

Everly and Sobelman have assembled a selective outline of the underlying theoretical rationale in stress research as well as of the neurological, neuroendocrine, psychological, and psychophysiological measurements of the stress response. Stress is presented in the book through a biopsychosocial systems model of human stress response encompassing environmental stimuli, cognitive appraisal, affective integration, neurological triggering mechanisms, physiological mechanisms of stress response mediation, coping, and various target organ effects of stress. The book is not intended as a complete review of the assessment of the human stress response. Rather, it is meant as an introduction to stress measurement for students or professionals interested in the topic.

The length of the text is both its major strength and its major weakness. Compact in its presentation, the book could serve as a handy reference for the novice stress researcher. The biopsychosocial model presented in the text forces the reader to grapple with stress as an interdisciplinary field of investigation. Furthermore, a considerable amount of information on the stress response integrated in a short text is helpful for providing the student with a broad perspective on the field. However, depth must necessarily be sacrificed in such a presentation. For example, in the section on the psychological assessment of the stress response, *stressor scales* are covered in a little over one page. It is clear from the text that measurement of the human stress response cannot be considered adequately on any of the single levels (e.g., psychological and physiological) of measurement alone. Yet direct measurement of behavioral responses to stress, such as the measurement of behavioral performance under stress or of stress *aftereffects* (Glass & Singer, 1972), are not discussed in the text.

Everly and Sobelman have compiled a "pocket primer" of the measurement of the human stress response. From the perspective of a student or professional new to the field of stress research, this text presents a biopsychosocial model of stress that can be used as a starting point for further investigation of the relations