

## CURRENT

# Diagnosis & Treatment in Psychiatry

#### Edited by

#### Michael H. Ebert, MD

Professor of Psychiatry and Pharmacology Chair, Department of Psychiatry Vanderbilt University School of Medicine Nashville, Tennessee

#### Peter T. Loosen, MD, PhD

Professor of Psychiatry and Medicine Vanderbilt University School of Medicine Chief of Psychiatry Nashville Veterans Affairs Medical Center Nashville, Tennessee

#### **Barry Nurcombe, MD**

Professor of Child and Adolescent Psychiatry
The University of Queensland
Director of Child and Adolescent Psychiatry
Royal Children's Hospital and District
Queensland, Australia
Professor Emeritus
Department of Psychiatry
Vanderbilt University School of Medicine

#### Lange Medical Books/McGraw-Hill

Medical Publishing Division

Nashville, Tennessee

New York St. Louis San Francisco Auckland Bogotá Caracas Lisbon London Madrid Mexico City Milan Montreal New Delhi San Juan Singapore Sydney Tokyo Toronto

#### McGraw-Hill

A Division of The McGraw-Hill Companie.

#### **Current Diagnosis & Treatment in Psychiatry**

Copyright © 2000 by The **McGraw-Hill Companies**, Inc. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

234567890 DOWDOW 09876543210

ISBN 0-8385-1462-6 ISSN 1528-1124

#### Notice

Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required. The author and the publisher of this work have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication. However, in view of the possibility of human error or changes in medical sciences, neither the author nor the publisher nor any other party who has been involved in the preparation or publication of this work warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from use of such information. Readers are encouraged to confirm the information contained herein with other sources. For example and in particular, readers are advised to check the product information sheet included in the package of each drug they plan to administer to be certain that the information contained in this book is accurate and that changes have not been made in the recommended dose or in the contraindications for administration. This recommendation is of particular importance in connection with new or infrequently used drugs.

This book was set in Times Roman by Rainbow Graphics, LLC.

The editors were Shelley Reinhardt, Isabel Nogueira, and Jeanmarie Roche.

The production supervisor was Richard C. Ruzycka.

The production service was Rainbow Graphics, LLC.

The cover designer was Elizabeth Schmitz.

The art manager was Eve Siegel.

The index was prepared by Kathy Pitcoff.

R. R. Donnelley & Sons, Inc. was printer and binder.

This book is printed on acid-free paper.



## **Preface**

Current Diagnosis & Treatment in Psychiatry reflects the current dynamic state of psychiatric knowledge. New discoveries from the basic biomedical and psychological sciences are having a major impact on psychiatric practice today. The task is to translate these new discoveries into a form useful to clinicians. This text is intended to be practical, succinct, and useful for all health care professionals who encounter and provide care for individuals with psychiatric symptoms and behavioral disturbance.

The field of psychiatry has undergone a gradual change in the last several decades. It has moved from a body of medical and psychological knowledge that was theory-bound, to an empirical approach that is more flexible with regard to reasoning about etiology. This change came about as it became apparent that developments in neurobiology, genetics, and cognitive and developmental psychology would make unanticipated inroads into our understanding of the etiology and pathogenesis of psychiatric syndromes. Furthermore, a more flexible philosophy evolved regarding the description and definition of psychiatric syndromes. Some syndromes have indistinct boundaries and shade into each other. In addition, the idea of discovering a single underlying biochemical characteristic of a psychiatric syndrome, which would in turn clarify the diagnostic description and predict treatment, was recognized as being hopelessly simplistic. Moreover, through the complexity of behavioral genetics, we now understand that those genotypes which are becoming highly significant in understanding psychopathology and developmental psychology may lead to unexpected phenotypes which do not fit our current conception of the psychiatric syndromes.

Section I of *Current Diagnosis & Treatment in Psychiatry* identifies some of the major tributaries of scientific knowledge that inform the current theory and practice of psychiatry. Sections II and IV present specialized settings and techniques for the delivery of psychiatric treatment. Sections III and V describe the syndromes of psychopathology as we understand them today and discuss current standards of treatment for each.

Current Diagnosis & Treatment in Psychiatry is written from an empirical viewpoint, with recognition that the boundaries of psychopathological syndromes may change unexpectedly with the emergence of new knowledge. Eventually, the accumulation of new knowledge will sharpen our diagnostic techniques and improve the treatment of these illnesses that have such a high impact on normal development, health, and society.

#### **ACKNOWLEDGMENTS**

We wish to thank Ellen Levine Ebert for her editorial assistance in the preparation of the text, Amy Marks for her thoughtful developmental and copy editing, Isabel Nogueira for her helpful coordination of the text, and Shelley Reinhardt for her leadership and advice throughout the process.

Michael H. Ebert, MD Peter T. Loosen, MD, PhD Barry Nurcombe, MD

March 2000

## **Authors**

#### R. Pryor Baird, MD, PhD

Assistant Professor of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: twoasprin@yahoo.com Mood Disorders

Anna Baumgaertel, MD

Assistant Professor of Pediatrics and Developmental Pediatrician, Child Development Center, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: anna.baumgaertel@mcmail.vanderbilt.edu Disorders Usually Presenting in Middle Childhood (6–11 Years) or Adolescence (12–18 years)

#### William Bernet, MD

Associate Professor of Psychiatry, Department of Psychiatry; Director, Vanderbilt Forensic Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: bill.bernet@mcmail.vanderbilt.edu

Psychiatry & the Law; Diagnostic Encounter; Disorders Usually Presenting in Middle Childhood (6–11 years) or Adolescence (12–18 years); Other Conditions Occurring in Childhood or Adolescence

#### Wade Berrettini, MD, PhD

The Karl E. Rickels Professor of Psychiatry; Director, Center for Neurobiology and Behavior, University of Pennsylvania, Philadelphia

Internet: wadeb@mail.med.upenn.edu Psychiatric Genetics

John L. Beyer, MD

Assistant Clinical Professor, Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, North Carolina Internet: beyer001@mc.duke.edu

Mood Disorders

#### Tahir I. Bhatti, MD

Attending Clinical Staff, Departments of Medicine and Psychiatry, University of California, San Diego Medical Center

Internet: tsbhatt@simplyweb.net Sleep Disorders

#### Leonard Bickman, PhD

Professor of Psychology, Psychiatry, and Public Policy, Vanderbilt University; Director, Center for Mental Health Policy, Nashville, Tennessee Internet: bickmann@attglobal.net

Mental Health Services Research

#### Daniel G. Blazer, MD, PhD

J.P. Gibbons Professor of Psychiatry and Behavioral Sciences, Duke University School of Medicine, Durham, North Carolina

Internet: blaze001@mc.duke.edu Psychiatric Epidemiology

#### George C. Bolian, MD

Associate Professor, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: george.bolian@mcmail.vanderbilt.edu Emergency Psychiatry

#### Thomas F. Catron, PhD

Associate Professor of Psychiatry, Vanderbilt University School of Medicine; Executive Director, Vanderbilt Community Mental Health Center; Co-Director, Center for Psychotherapy Research and Policy, Vanderbilt Institute for Public Policy Studies, Nashville, Tennessee Internet: tom.catron@vanderbilt.edu

Continuity of Care

#### Camellia P. Clark, MD

Clinical Instructor and Associate Physician, Department of Psychiatry, University of California, San Diego Internet: cclark@vapop.ucsd.edu

Sleep Disorders

#### Kenneth A. Dodge, PhD

William McDougall Professor of Public Policy and Psychology; Director, Center for Child and Family Policy, Duke University, Durham, North Carolina Internet: kenneth.dodge@duke.edu

Developmental Psychology

#### Michael H. Ebert, MD

Professor of Psychiatry and Pharmacology; Chair, Department of Psychiatry, Vanderbilt University School of

Medicine, Nashville, Tennessee Internet: mike.ebert@mcmail.vanderbilt.edu Psychiatric Interview; Eating Disorders

#### S. Hossein Fatemi, MD, PhD

Associate Professor of Psychiatry, Cell Biology, and Neuroanatomy, Department of Psychiatry, University of Minnesota School of Medicine, Minneapolis, Minnesota Internet: fatem002@tc.umn.edu *Schizophrenia* 

#### Elliot M. Fielstein, PhD

Assistant Professor of Psychiatry, Vanderbilt University School of Medicine; Clinical Neuropsychologist, Veterans Affairs Medical Center, Nashville, Tennessee Internet: elliot.m.fielstein@vanderbilt.edu Posttraumatic Stress Disorder & Acute Stress Disorder

#### Robert B. Fisher, MD, MPH

Associate Professor, Department of Psychiatry and Neurology, Tulane University School of Medicine; Associate Medical Director for Adult Services, Office of Mental Health, Louisiana State Department of Health and Hospitals, New Orleans

Internet: robert\_fisher73@hotmail.com

Psychiatric Epidemiology

#### Lee Fleisher, BS

Senior Associate and Vice Chair, Administration, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: lee.fleisher@mcmail.vanderbilt.edu

#### Charles V. Ford, MD

Continuity of Care

Professor, Department of Psychiatry and Behavioral Neurobiology, University of Alabama School of Medicine, Birmingham

Internet: cford@uabmc.edu

Somatoform Disorders; Factitious Disorders & Malingering

#### Arthur M. Freeman III, MD

Professor of Psychiatry; Chair, Department of Psychiatry, Louisiana State University School of Medicine, Shreveport

Internet: afreem@lsumc.edu
Consultation-Liaison Psychiatry

#### Volney P. Gay, PhD

Professor, Departments of Religion, Psychiatry, and Anthropology, Vanderbilt University, Nashville, Tennessee Internet: volney.p.gay@vanderbilt.edu

Psychoanalysis

#### Gregory M. Gillette, MD

Assistant Professor of Psychiatry, Vanderbilt University School of Medicine; Assistant Chief of Psychiatry, Veterans Affairs Medical Center, Nashville, Tennessee Internet: gillette.gregory@nashville.va.gov

Posttraumatic Stress Disorder & Acute Stress Disorder

#### J. Christian Gillin, MD

Professor of Psychiatry, University of California, San Diego; Director, Mental Health Clinical Research Center, University of California, San Diego, and the Veterans Affairs San Diego Healthcare System Internet: jgillin@ucsd.edu

Sleep Disorders

#### Harry E. Gwirtsman, MD

Associate Professor of Psychiatry; Director, Division of Geriatric Psychiatry, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: harry.gwirtsman@med.va.gov

Psychiatric Interview; Mood Disorders; Eating Disorders

#### William A. Hewlett, MD, PhD

Associate Professor, Department of Psychiatry; Director, Obsessive-Compulsive Disorder/Tourette Program, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: hewletw@mcmail.vanderbilt.edu Obsessive-Compulsive Disorder

#### Steven D. Hollon, PhD

Professor, Departments of Psychology and Psychiatry, Vanderbilt University, Nashville, Tennessee Internet: steven.d.hollon@vanderbilt.edu Behavioral & Cognitive-Behavioral Interventions

#### John R. Hubbard, MD, PhD

Associate Professor of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: hubbard.john\_r@nashville.va.gov Substance-Related Disorders; Personality Disorders

#### Joseph A. Kwentus, MD

Assistant Professor of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee; Medical Director, Behavioral Sciences, Tennessee Christian Medical Center, Madison

Internet: joekwentus@home.com

Delirium, Dementia, & Amnestic Syndromes

#### Joseph D. LaBarbera, PhD

Associate Professor of Psychiatry; Director of Psychology, Division of Child and Adolescent Psychiatry, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: joseph.labarbera@mcmail.vanderbilt.edu Diagnostic Testing

#### Peter T. Loosen, MD, PhD

Professor of Psychiatry and Medicine, Vanderbilt University School of Medicine; Chief of Psychiatry, Nashville Veterans Affairs Medical Center, Tennessee Internet: ptloosen@aol.com

Mood Disorders

#### Peter R. Martin, MD

Professor of Psychiatry and Pharmacology; Director, Division of Addiction Medicine and Vanderbilt Addiction

Center, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: peter.martin@mcmail.vanderbilt.edu Substance-Related Disorders

Jonathan E. May, PhD

Adjunct Assistant Professor of Psychology, Vanderbilt University School of Medicine; Director, Psychology Training, Nashville Veterans Affairs Medical Center, Nashville, Tennessee

Internet: may.jonathan\_e+@nashville.va.gov Sexual Dysfunctions & Paraphilias

#### Herbert Y. Meltzer, MD

Bixler Professor of Psychiatry and Pharmacology; Director, Division of Psychopharmacology, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: herbert.meltzer@mcmail.vanderbilt.edu Schizophrenia

Polly J. Moore, PhD, RPsgT

Post-Doctoral Fellow, Department of Psychiatry, University of California, San Diego, and the University of California, San Diego, Cancer Center Internet: pmoore@ucsd.edu

Sleep Disorders

Leslie C. Morey, PhD

Professor of Psychology, Texas A&M University, College Station, Texas
Internet: icm@psyc.tamu.edu
Personality Disorders

#### James L. Nash, MD

Associate Professor of Psychiatry; Vice-Chairman for Graduate Medical Education, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: james.nash@mcmail.vanderbilt.edu
General Principles of Psychotherapeutic Management;
Mood Disorders

#### Carol T. Nixon, MA

Program Evaluation Manager, Access Behavioral Care, Denver, Colorado Internet: carol\_nixon@coaccess.com Mental Health Services Research

Denine A. Northrup, PhD

Research Associate, Center for Mental Health Policy, Vanderbilt University, Nashville, Tennessee Internet: d.northrup@vanderbilt.edu Mental Health Services Research

Barry Nurcombe, MD

Professor of Child and Adolescent Psychiatry, The University of Queensland; Director of Child and Adolescent Psychiatry, Royal Children's Hospital and District, Queensland, Australia; Professor Emeritus, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: i.spinks@psychiatry.uq.edu.au

Psychiatric Interview; Clinical Decision Making in Psychiatry; Dissociative Disorders; Diagnostic Encounter; Diagnostic Testing; Diagnostic Formulation, Treatment Planning, & Modes of Treatment; Disorders Usually Presenting in Infancy or Early Childhood (0–5 years); Disorders Usually Presenting in Middle Childhood (6–11 Years) or Adolescence (12–18 years); Other Conditions Occurring in Childhood or Adolescence

John I. Nurnberger Jr., MD, PhD

Joyce & Iver Small Professor of Psychiatry, Neurobiology and Medical Genetics; Director, Institute of Psychiatric Genetics and Assistant Chairman for Research, Department of Psychiatry, Indiana University School of Medicine, Indianapolis
Internet: jnurnber@iupui.edu

Psychiatric Genetics

Rudra Prakash, MD

Associate Clinical Professor, Department of Psychiatry, Vanderbilt University, Nashville, Tennessee *Emergency Psychiatry* 

#### Howard B. Roback, PhD

Professor, Departments of Psychiatry and Psychology, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: howard.roback@mcmail.vanderbilt.edu Psychological Testing in Psychiatry

#### Ronald M. Salomon, MD

Assistant Professor of Psychiatry; Medical Director, Obsessive-Compulsive Disorders Clinic, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: ron.salomon@mcmail.vanderbilt.edu

Adjustment Disorders

Lucy Salomon, MD

Consultant in Psychiatry, Nantucket Cottage Hospital, Nantucket, Massachusetts Internet: slmnlucy@nantucket.net Adjustment Disorders

Roy Q. Sanders, MD

Psychiatry, Mary Imogene Bassett Hospital, Cooperstown, New York Internet: royquincy@aol.com Disorders Usually Presenting in Middle Childhood

Attending Psychiatrist, Division of Child and Adolescent

(6–11 years) or Adolescence (12–18 years)

Erich Seifritz, MD

Psychiatrist, Department of Psychiatry, University of Basel, Switzerland Internet: erich.seifritz@Unibas.ch Sleep Disorders

#### Samuel R. Sells III, MD

Assistant Professor, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: sam.sells@mcmail.vanderbilt.edu

Mood Disorders

#### Vernon H. Sharp, MD

Associate Clinical Professor of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee *Interviewing Families* 

#### Richard C. Shelton, MD

Associate Professor, Departments of Psychiatry and Pharmacology; Director, Division of Adult Psychiatry, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: richard.shelton@mcmail.vanderbilt.edu
General Principles of Psychopharmacologic Treatment;
Other Psychotic Disorders; Mood Disorders; Anxiety
Disorders

#### Sydney Spector, PhD

Professor, Departments of Psychiatry and Pharmacology, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: sydney.spector@mcmail.vanderbilt.edu Neuropsychopharmacology

#### Wendy L. Stone, PhD

Associate Professor of Pediatrics; Director, Treatment and Research Institute for Autism Spectrum Disorders (TRIAD), Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: wendy.stone@mcmail.vanderbilt.edu
Disorders Usually Presenting in Infancy or Early Child-hood (0—5 years)

#### Fridolin Sulser, MD

Professor, Departments of Psychiatry and Pharmacology, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: fridolin.sulser@mcmail.vanderbilt.edu Neuropharmacology

#### William Thomas Summerfelt, PhD

Assistant Professor, Department of Psychology, Michigan State University, East Lansing, Michigan Internet: summerf6@msu.edu

Mental Health Services Research

#### John W. Thompson Jr., MD

Associate Professor, Departments of Psychiatry and Neurology; Director, Forensic Neuropsychiatry, Tulane University School of Medicine, New Orleans Internet: jthomps3@mailhost.tcs.tulane.edu Impulse-Control Disorder

#### Travis Thompson, PhD

Professor of Psychology and Psychiatry; Director, John F. Kennedy Center on Human Development, Vanderbilt University, Nashville, Tennessee Internet: thompst@ctrvax.vanderbilt.edu Behavioral & Cognitive-Behavioral Interventions

#### Michael G. Tramontana, PhD

Associate Professor of Psychiatry, Department of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee

Internet: michael.tramontana@mcmail.vanderbilt.edu Diagnostic Testing; Disorders Usually Presenting in Infancy or Early Childhood (0–5 years); Disorders Usually Presenting in Middle Childhood (6–11 years) or Adolescence (12–18 years)

#### Larry W. Welch, EdD

Assistant Clinical Professor of Neurology, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: larry.w.welch@vanderbilt.edu Psychological Testing in Psychiatry

#### James R. Westphal, MD

Professor of Clinical Psychiatry; Director of Consultation-Liaison Psychiatry, Louisiana State University Health Sciences Center, Shreveport Internet: jwestp@lsumc.edu Consultation-Liaison Psychiatry

#### Daniel K. Winstead, MD

Professor of Psychiatry and Neurology; Chair, Department of Psychiatry and Neurology, Tulane University School of Medicine, New Orleans Internet: dan@winstead.net Impulse-Control Disorders

#### Mark L. Wolraich, MD

Professor, Department of Pediatrics; Chief, Division of Child Development, Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, Tennessee Internet: mark.wolraich@mcmail.vanderbilt.edu Disorders Usually Presenting in Infancy or Early Childhood (0–5 years) Disorders Usually Presenting in Middle Childhood (6–11 years) or Adolescence (12–18 years)

## **Contents**

Prefa	aceix	
Auth	orsxi	
SECTION I. SCIENTIFIC AREAS RELEVANT TO MODERN PSYCHIATRY		
1.	Developmental Psychology1	
	Kenneth A. Dodge, PhD	
2.	Behavioral & Cognitive-Behavioral Interventions	
	Travis Thompson, PhD, & Steven D. Hollon, PhD	
3.	Neuropsychopharmacology	
4.	Psychoanalysis40	
	Volney P. Gay, PhD	
5.	Psychiatric Epidemiology53	
	Robert B. Fisher, MD, MPH, & Daniel G. Blazer, MD, PhD	
6.	Psychiatric Genetics	
7.	Mental Health Services Research80	
7.	Carol T. Nixon, MA, Denine A. Northrup, PhD,	
	William Thomas Summerfelt, PhD, & Leonard Bickman, PhD	
SEC	TION II. TECHNIQUES & SETTINGS	
8.	Psychiatric Interview	
9.	Clinical Decision Making in Psychiatry115	

10.	General Principles of Psychopharmacologic Treatment	
11.	General Principles of Psychotherapeutic Management	
12.	Psychological Testing in Psychiatry	
13.	Emergency Psychiatry	
14.	Consultation-Liaison Psychiatry	
15.	Psychiatry & the Law	
16.	Continuity of Care	
SECTION III. SYNDROMES AND THEIR TREATMENTS IN ADULT PSYCHIATRY		
17.	Delirium, Dementia, & Amnestic Syndromes	
	•	
18.	Substance-Related Disorders	
18. 19.	Substance-Related Disorders	
	Substance-Related Disorders	
19. 20. 21.	Substance-Related Disorders	
19. 20. 21. 4. 22.	Substance-Related Disorders	

27.	Dissociative Disorders	
28.	Sexual Dysfunctions & Paraphilias	
29.	Eating Disorders	
30.	Sleep Disorders	
31.	Impulse-Control Disorders	
32.	Adjustment Disorders	
33.	Personality Disorders	
SECTION IV. TECHNIQUES & SETTINGS IN CHILD & ADOLESCENT PSYCHIATRY		
34.	Diagnostic Encounter	
35.	Diagnostic Evaluation	
36.	Diagnostic Formulation, Treatment Planning, & Modes of Treatment520  Barry Nurcombe, MD	
SEC	CTION V. SYNDROMES & THEIR TREATMENTS IN CHILD & ADOLESCENT PSYCHIATRY	
37.	Disorders Usually Presenting in Infancy or Early Childhood (0–5 years)533  Barry Nurcombe, MD, Mark L. Wolraich, MD, Michael Tramontana, PhD, & Wendy Stone, PhD	
38.	Disorders Usually Presenting in Middle Childhood (6–11 years) or Adolescence (12–18 years)562	
	Barry Nurcombe, MD, Michael G. Tramontana, PhD, Mark L. Wolraich, MD, Anna Baumgaertel, MD, William Bernet, MD, & Roy Q. Sanders, MD	
39.	Other Conditions Occurring in Childhood or Adolescence	
Ind	ex599	

## Section I. Scientific Areas Relevant to Modern Psychiatry

## **Developmental Psychology**

1

Kenneth A. Dodge, PhD

#### **DEVELOPMENTAL CONCEPTS**

The concept of development forms the backbone of modern behavioral science. Psychiatric practitioners and behavioral scientists are concerned primarily with change, and **developmental psychology** is the scientific study of the structure, function, and processes of systematic change across the life span. Even systems of classification of behavior (including psychiatric nosology) take into account not only contemporaneous features and formal similarities among current symptoms but also past qualities, immediate consequences, and long-term outcomes.

Whereas developmental psychology is concerned with species-typical patterns of systematic change (and central tendencies of the species), the emerging discipline of **developmental psychopathology** is concerned with individual differences and contributes greatly to our understanding of childhood disorders.

The organizing framework of developmental psychopathology is a movement toward understanding the predictors, causes, processes, courses, sequelae, and environmental symbiosis of psychiatric illnesses in order to discover empirically effective forms of treatment and prevention. This movement is girded in a developmental framework that integrates knowledge from multiple disciplines (eg, psychobiology, neuroscience, cognitive psychology, social psychology) and levels of analysis (eg, neuronal synapses, psychophysiologic responses, mental representations, motor behaviors, personality patterns). The relationship between developmental psychology and developmental psychopathology is reciprocally influential: The study of normal development gives context to the analysis of aberrations, and the study of psychopathology informs our understanding of normative development.

A developmental orientation forces a scholar to ask questions that move beyond the prevalence and incidence of disorders. Table 1-1 lists some of these questions.

#### THE ORTHOGENETIC PRINCIPLE

Human growth is not linear. Behavioral and psychological change is not marked merely by quantitative advances or declines. The organizational perspective on development offers a powerful theoretical framework for depicting the organism as an integrated system with hierarchically ordered subsystems and for understanding change as a progression of qualitative reorganizations within and among subsystems. The human being is a coherent integration of neural, physiologic, hormonal, affective, information-processing, mental representational, behavioral, and social subsystems. Change occurs both within these subsystems and in the relations among them.

The **orthogenetic principle** proposes that development moves from undifferentiated and diffuse organization toward greater complexity, achieved through

**Table 1–1.** Questions related to a developmental orientation.

How and why do some at-risk individuals become psychologically ill, whereas others do not?

How do the capacities and limitations of the human species at various life stages predispose individuals to disorder? (For example, why are females at relatively high risk for depression during adolescence?)

How are various disorders related developmentally? (For example, how does oppositional defiant disorder lead to conduct disorder, which leads to antisocial personality disorder?)

Where are the natural boundaries between normal and abnormal?

Are there critical periods, and if so, why? (For example, why is a high lead level in the blood more detrimental early in life?)

What does the concept of multifactorial causation imply for the likely success of intervention efforts?

both differentiation and consolidation within and across subsystems. The newborn infant is relatively undifferentiated in response patterns, but through development this infant achieves greater differentiation (and less stereotypy) of functioning. Each period of development is characterized by adaptational challenges resulting from environmental demands (eg, a mother who has become unwilling to breast-feed) and from emerging internal influences across subsystems (eg, growing recognition of the self as able to exert control). The challenges are best conceptualized not as mere threats to homeostasis; rather, change and the demand for adaptation define the human species, and challenges push the individual toward development. The inherent adaptational response of the species is toward mastery of new demands. The mastery motive is as yet unexplained by science, although it is paradigmatic of the human species (see "Adaptation and Competence" section later in this chapter).

Thus development is characterized by periods of disruption in the homeostasis of the organism brought on by a new challenge, followed by adaptation and consolidation until the next challenge is presented. The adaptive child uses both internal and external resources to meet a challenge. Successful adaptation is defined as the optimal organization of behavioral and biological systems within the context of current challenges. Adaptation requires the assimilation of past organizational structures to current demands as well as the generation of new structures equipped to meet the demands.

Consider the toddler who is confronted by an environment that becomes less indiscriminately giving (eg, a mother who needs to feed her toddler on a schedule). The toddler may respond initially with temper tantrums to indicate his or her displeasure and needs, but tantrums evolve into verbal communication as the toddler learns how to achieve desired outcomes most efficiently. Thus environmental challenge and internal chaotic responses (eg, temper tantrums) may be steps in the orthogenesis of language.

Piaget described two types of change: assimilation, which involves incorporation of the challenge into existing organizational structures (eg, an infant might treat all adults as the same kind of stimulus); and accommodation, which involves reorganization of the organism's structures to meet the demands of the environment (eg, a developing infant learns to discriminate among adults and to respond differently to different adults) (see "Organismic Theory" section later in this chapter). Accommodation is more complex than assimilation, but successful adaptation requires a balance of assimilation and accommodation.

Maladaptation, or incompetence in responding to challenge, may be characterized by the inadequate resolution of developmental challenges (as in the psychoanalytic concept of fixation). Maladaptation may be evidenced by developmental delays or lags, such as the continuing temper tantrums of an emotionally

dysregulated child beyond the period when such behavior is normative. At any phase, the organism will seek some form of regulation and functioning, even if it is not advantageous for future development. Thus the child's tantrums might serve to regulate both a complex external environment of marital turmoil and an internal environment of stress. However, nonoptimal regulation will prevent or hamper the individual from coping with the next developmental challenge. Continuing the example of the dysregulated child, the repetitive pattern of anger may lead to poor peer relations, which prevent the child from acquiring new social skills through friendships.

Sometimes apparently effective responses to a particular challenge lead to maladaptation at a more general level. Consider a toddler who responds to the withdrawal of a mother's undivided attention by ignoring her. Although this pattern of response may mean calmer evenings temporarily, the toddler will be ill equipped to respond to other challenges later in development. Consistent social withdrawal may cause the child to fail to acquire skills of assertion; however, continued ignoring of the mother may lead to a phenotypically distinct response in the future (eg, depression in adolescence). Thus the orthogenetic principle calls to mind the functioning of the entire organism (not merely distinct and unrelated subsystems) and the readiness of that organism to respond to future challenges.

Horowitz FD: Exploring Developmental Theories: Toward a Structural/Behavioral Model of Development. Lawrence Erlbaum Assoc, 1987.

## MAJOR PRINCIPLES OF ONTOGENY & PHYLOGENY

Cairns and Cairns outlined seven principles that characterize the human organism in interaction with the environment over time: conservation, coherence, bidirectionality, reciprocal interaction, within-individual variation, and dynamic systems. The first principle is that of conservation, or connectivity in functioning across time. Even with all the pressure to change, social and cognitive organization tends to be continuous and conservative. The constraints on the organism and the multiple determinants of behavior lead to gradual transition rather than abrupt mutation. Observers can recognize the continuity in persons across even long periods of time; that is, we know that a person remains the same "person." For Piaget, who began his career by writing scientific papers on the evolution of mollusks, this withinperson continuity principle is consistent with his view that species-wide evolution is gradual. Piaget believed that development within individuals reflects development of the species (ie, ontogeny recapitulates phylogeny).

The second principle is coherence. Individuals function as holistic and integrated units, in spite of the multiple systems that contribute to any set of behaviors. One cannot divorce one system from another because the two systems function as a whole that is greater than its component parts. This fact is another conservative force, because an adverse effect on one part of a system tends to be offset by compensatory responses from other parts of the system. This phenomenon applies to all human biological systems and can be applied to psychological functioning.

The third principle is a corollary of the second: Influence between the organism and the environment is bidirectional. The person is an active agent in continuous interaction with others. Reciprocal influences are not identical; rather, at each stage of development, the person organizes the outer world through a mental representational system that mediates all experience with the world. Nevertheless, reciprocity and synchrony constrain the person, and the relative weight of these constraints varies at different points in development. At one extreme, it is possible to speak of symbiosis and total dependency of the infant on the mother; at the other extreme, behavior geneticists refer to genetic effects on environmental variables (such as the proposition that genes produce behavior that leads to the reactions that one receives from others in social exchanges).

Another corollary of the second principle is the principle of reciprocal interaction between subsystems within the individual. Behavioral, cognitive, emotional, neurochemical, hormonal, and morphologic factors affect each other reciprocally. Mental events have biological implications and vice versa. Even though this principle has been embraced by several areas of biology (eg, ethology, behavioral zoology), psychology and psychiatry sometimes persist in a war between biological and mental camps.

The fifth principle of ontogeny is that novelty arises in development. Change is not haphazard. The forces of reciprocal interaction within the individual and the environment lead not only to quantitative changes in the individual but also to the emergence of qualitatively distinct forms, such as locomotion, language, and thought. These changes represent growth rather than random events, in that previous forms typically remain and are supplemented by novel forms.

The sixth principle of phylogeny is that of withinindividual variation in developmental rates across subsystems. Change within a subsystem occurs nonlinearly, as in language development or even physical growth. Some of this nonlinearity can be explained by species-wide phenomena, such as puberty, but much of it varies across individuals. In addition, rates of change vary within an individual across subsystems. Consider two young children, identical in age. Child A may learn to crawl before child B, but child B might catch up and learn to walk before child A. Likewise, child B might utter a recognizable word before child A, but child A might be talking in sentences before child B. This unevenness within and across individuals characterizes development and makes predictions probabilistic rather than certain. Some of the variation is attributable to environmental factors that have enduring personal effects (such as the lasting effects on cognitive achievement of early entry into formal schooling) or biological factors that have enduring psychological effects (such as the effect of early pubertal onset on social outcomes), whereas other factors may have only temporary effects (such as efforts to accelerate locomotion onset) or no effects.

Finally, according to the seventh principle, development is extremely sensitive to unique configurations of influence, such as in dynamic systems. Growth and change cannot be reduced to a quantitative cumulation of biological and environmental units. Also, development is not simply hierarchical, with gradual building of functions on previous ones. Rather, development often follows a sequence of organization, disorganization, and then reorganization in a different (possibly more advanced) form. In physical sciences, this principle is called catastrophe theory, reflecting the hypothesis that during the disorganization, events are literally random. But reorganization occurs eventually, in lawful and predictable ways. Dynamic systems models are now being used to describe the acquisition of novel functions such as locomotion and language. In theory, the same models could be used to describe individual differences in development, as in psychopathology. Even though the concept of stage-based development has lost favor because of the global nature and nonfalsifiability of some stage theories, these dynamic-system qualities have been captured in stage-based theories of change.

Cairns RB, Cairns BD: Lifelines and Risks: Pathways of Youth in Our Time. Cambridge University Press, 1994. Dodge KA, Bates JE, Pettit GS: Mechanisms in the cycle of violence. Science 1990;250:1678.

#### AGE NORMS

A simple but powerful developmental concept that has affected psychiatric nosology is that of age norms. Rather than evaluating a set of behaviors or symptoms according to a theoretical, absolute, or population-wide distribution, diagnosticians increasingly use age norms to evaluate psychiatric problems. Consider the evaluation of temper tantrums. In a 2year-old child, tantrums are normative, whereas in an adult, angry outbursts could indicate an intermittent explosive disorder or antisocial personality. More subtle examples have begun to affect the diagnosis of many disorders in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV), such as attention-deficit/hyperactivity disorder, mental retardation, and conduct disorder. With regard to major depressive episodes and dysthymic disorder, age norming has resulted in consideration of different symptoms at different ages in order to diagnose the same disorder (eg, irritability and somatization are common in prepubescent depression, whereas delusions are more common in adulthood). DSM-IV explicitly requires consideration of age, gender, and culture features in all disorders, suggesting the importance of evaluating symptoms within the context of their expression.

The importance of age norming suggests the need for empirical studies of symptoms in large epidemiologic samples and the linking of research on normative development to psychopathology. In this way, developmental psychopathology is similar to psychiatric epidemiology (see Chapter 5). Despite the increased emphasis on age norming, ambiguity pervades current practice. DSM-IV defines disorders in terms of symptoms that are quantified as "often," "recurrent," and "persistent" without operational definition. Some clinicians intuitively contextualize their use of the term "often" relative to a child's agemates (so that "often displays temper tantrums" might mean hourly for a 2-year-old child and weekly for a teenager), whereas other clinicians do not (so that "often" has the same literal meaning across all ages). The specific meaning of these terms is not clear in the context of some DSM-IV disorders. Complete age norming might imply the removal of all age differences in prevalence rates (reducing disorder merely to the statistical extremes of a distribution at an age level), whereas complete neglect of age norms implies that at certain ages a disorder is ubiquitous. To resolve these problems, developmental researchers need to learn which patterns of symptoms ought to be examined epidemiologically, and psychopathologists need to compare their observations to empirical norms.

Cairns RB, Cairns BD: Lifelines and Risks: Pathways of Youth in Our Time. Cambridge University Press, 1994.

#### **DEVELOPMENTAL TRAJECTORIES**

Diagnosticians must consider not only the agenormed profile of symptoms but also the developmental trajectories of those symptoms (both agenormed and individual). For example, consider three 10-year-old children who exhibit aggressive behavior. As depicted in Figure 1–1, child A has displayed a relatively high rate of aggression historically, but the trajectory is downward. Child B has displayed a constant rate of aggressive displays, and child C's aggressive displays have accelerated geometrically. Which child has a problematic profile? The diagnostician will undoubtedly want to consider not only current symptom counts (in relation to age norms) but also the developmental trajectory of these counts (and the age norm

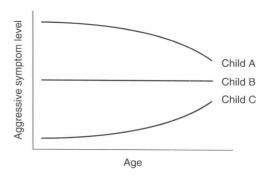


Figure 1–1. Three hypothetical developmental trajectories for aggressive behavior.

for the trajectory). Child C might be most problematic because of the age trend, unless this trend were also age normative (eg, some increase in delinquent behavior in adolescence is certainly normative). In contrast, child B's constant pattern might be problematic if the age-normed trend were a declining slope.

Some DSM-IV disorders explicitly take into account the trajectory of an individual's symptoms. For example, Rett's disorder, childhood disintegrative disorder, and dementia of the Alzheimer's type involve deviant trajectories. The diagnosis of other disorders may require trajectory information that is not yet available. This information must be based on longitudinal study of individuals and not cross-sectional data, because only longitudinal inquiry allows for the charting of growth curves within individuals over time. Population means at various ages indicate little about within-individual changes. Population-wide symptom counts might grow systematically across age even when individual trajectories are highly variable.

Costello EJ: Developments in child psychiatric epidemiology. J Am Acad Child Adolesc Psychiatry 1989;28:836.

## BOUNDARY BETWEEN NORMAL & ABNORMAL

One of the tenets of developmental psychology is that a knowledge of normal development informs psychopathology partly because the boundaries between normal and abnormal are sometimes vague, diffuse, or continuous. Many disorders (eg, conduct disorder, dysthymic disorder) are defined on the basis of cutoffs in dimensional criteria rather than on qualitative distinctions that are more easily recognizable. Criteria such as "low energy" and "low self-esteem" (for dysthymic disorder) and "marked or persistent fear" (for social phobia) are matters of degree. One of the central questions is where to locate the boundary between

normal and abnormal when the criteria of psychopathology are dimensional.

In some cases the boundary is arbitrary. In other cases the "true" boundary might be identified on the basis of three considerations: (1) a noncontinuous pattern of the distribution of scores, (2) a qualitatively distinct change in functioning that accompanies a quantitative difference in a score, or (3) unique etiology at the extreme of a distribution.

The first consideration is whether the population of scores is distributed normally with a single mode or bimodally with an unusually large number of cases at one extreme. A large number of cases at one extreme would suggest that a second causal agent is operating, beyond whatever agent caused the normal distribution. A second causal agent might suggest a deviant (ie, psychopathologic) process. Consider the relation between the intelligence quotient (IQ) score (a continuous measure) and mental retardation. The distribution of IQ scores in the U.S. population is not normal. Far more cases of IQs below 70 occur than would be expected by a normal distribution. Thus the distinction between normal and abnormal IQ scores is not merely one of degree.

The second consideration is whether qualitative differences in functioning occur with quantitative shifts in a criterion. For example, if a decrement of 10 IQ points from 75 to 65 makes it significantly more difficult for a child to function in a classroom than a decrement from 100 to 90, then a case can be made for locating the cutoff point near an IQ of 70.

The third consideration is the possible distinct etiology of scores at an extreme end of the distribution. A single set of causes will ordinarily lead to a normal distribution of scores. A disproportionate number of scores at an extreme often suggests a separate etiology for those scores. In the case of IQ scores, one set of forces (eg, genes, socialization) leads to a normal distribution, whereas a second set of forces (eg, Down syndrome, anoxia, lead toxicity) leads to a large number of cases at the low extreme.

American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. American Psychiatric Association, 1994.

#### **MULTIPLE PATHWAYS**

One vexing problem highlighted by research in developmental psychology is that some disorders involve multiple etiologic pathways. The principles of equifinality and multifinality, derived from general systems theory, hold for many disorders. **Equifinality** is the concept that the same phenomenon may result from several different pathogens. For example, infantile autism results from congenital rubella, inherited metabolic disorder, or other factors. **Multifinality** is the concept that one etiologic factor can lead to any of several psy-

chopathologic outcomes, depending on the person and context. Early physical abuse might lead to conduct disorder or to dysthymic disorder, depending on the person's predilections and the environmental supports for various symptoms; poverty predisposes one toward conduct disorder but also substance abuse disorder.

The diversity in processes and outcomes for disorders makes the systematic study of a single disorder difficult. Unless scholars consider multiple disorders and multiple factors simultaneously, they cannot be sure whether an apparent etiologic factor is specific to that disorder. Inquiry into one disorder benefits from a conceptualization within a larger body of development of normal adjustment versus problem outcomes. The broad coverage of developmental psychology provides the grounding for inquiry into various disorders.

Rutter M: Psychosocial resilience and protective mechanisms. In: Rolf J et al (editors): *Risk and Protective Factors in the Development of Psychopathology*. Cambridge University Press, 1990.

#### **BIOSOCIAL INTERACTIONS**

Not only are multiple distinct factors implicated in the genesis of a disorder, the profile of factors often conspires to lead to psychopathologic outcomes. Empirically, this profile is the statistical interaction between factors (in contrast with the main effects of factors). Thus a causal factor might operate only when it occurs in concert with another factor. For example, the experience of parental rejection early in life is a contributing factor in the development of conduct disorder but only among that subgroup of children who also display a biologically based problem such as health difficulties at the time of birth. Likewise, health problems at birth do not inevitably lead to conduct disorder; the interaction of a biologically based predisposition with a psychosocial stressor is often required for a psychopathologic outcome.

Another example is the known effect of chronic social rejection by peers in early elementary school on the development of aggressive conduct problems. This social stressor leads to conduct problems only among that subgroup of children predisposed toward externalizing disorders prior to experiencing social rejection. Among the subgroup not predisposed, social rejection does not result in conduct problems. Of course, the experience of social rejection might well incite another disorder (such as a mood disorder), again, if a predisposition to such a disorder exists.

The importance of biosocial interactions suggests the importance of examining multiple diverse factors simultaneously, both in empirical research and clinical practice.

Garber J, Hilsman R: Cognitions, stress, and depression in children and adolescents. Child Adolesc Psychiatr Clin N Am 1992;1:129.