

# MODELS OF THE MIND



*A Framework for  
Biopsychosocial Psychiatry*

**Stephen L. Dilts, Jr.**

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***Stephen L. Dilts, Jr., M.D.***

***WellSpan Health System  
York, Pennsylvania***



USA	Publishing Office:	BRUNNER-ROUTLEDGE <i>A member of the Taylor &amp; Francis Group</i> 325 Chestnut Street Philadelphia, PA 19106 Tel: (215) 625-8900 Fax: (215) 625-2940
	Distribution Center:	BRUNNER-ROUTLEDGE <i>A member of the Taylor &amp; Francis Group</i> 7625 Empire Drive Florence, KY 41042 Tel: 1-800-634-7064 Fax: 1-800-248-4724
UK		BRUNNER-ROUTLEDGE <i>A member of the Taylor &amp; Francis Group</i> 27 Church Road Hove E. Sussex, BN3 2FA Tel: +44 (0) 1273 207411 Fax: +44 (0) 1273 205612

This edition published 2012 by Routledge:

Routledge	Routledge
Taylor & Francis Group	Taylor & Francis Group
711 Third Avenue	27 Church Road
New York, NY 10017	Hove, East Sussex BN3 2FA

# **MODELS OF THE MIND: A Framework for Biopsychosocial Psychiatry**

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A CIP catalog record for this book is available from the British Library.

© The paper in this publication meets the requirements of the ANSI Standard Z39.48-1984 (Permanence of Paper).

## **Library of Congress Cataloging-in-Publication Data**

Dils, Stephen L.  
Models of the mind : a framework for biopsychosocial psychiatry / by Stephen L. Dils, Jr.  
p. cm.  
Includes bibliographical references and index.  
ISBN 1-58391-071-9 (alk. paper)  
1. Psychiatry. 2. Psychology, Pathological. I. Title.

RC454.D53 2000  
616.89—dc21

CIP  
00-062987

ISBN: 1-58391-071-9 (paper)

*To my wife, Jackie,  
and to my parents*



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# Foreword

Who are we, what do we do, and how do we understand our subject matter? These queries challenge and vex us as psychiatrists about our work and those we serve—our patients. We are all in need of models in solving problems. To paraphrase Einstein, our theories help us to identify the facts. In *Models of the Mind*, Dr. Steven Dilts, Jr., has diligently taken up this challenge to explain our work, our patients' needs, and the nature of their psychiatric dilemmas. He employs the "framework" of the biopsychosocial model introduced by George Engel and adopts it to explore the terrain of modern psychiatric practice and theory, and at the same time he enriches the model. Thus we are the beneficiaries of his elegant framework, the clarity of his writing, and the breadth and depth of his knowledge.

In an evenhanded and persistent way, Dr. Dilts strikes the theme that we cannot reduce our patients' problems to any one of the three domains—biological, psychological, or social—to explain or ameliorate their suffering and maladaptations. He uses the measure of "relevance" versus truth to guide practitioners in achieving understanding and efficacy with our patients. Best of all, he avoids the pitfalls of reductionism and polarized thinking in approaching understanding and in the treatment of our patients. Although the scope of this book clearly reveals his sophisticated understanding of the biological bases of psychiatric illnesses, he also reflects a deep and abiding adherence to the humanistic underpinnings of sound psychiatric practice. He reveals his calling as a healer as much as a biological and social scientist. He guides us to do the same through case examples and an up-to-date review of the state of the art and science of our understanding of the psychiatric conditions we treat.

Dr. Dilts's book is a masterful guide to understanding the scope of our work as clinicians, using fresh, clear, and new language for modern times. It was only twenty years ago that George Engel introduced the term *biopsychosocial*. Dr. Dilts has seized the opportunity offered by this conceptualization to help modern practitioners in a manner that bygone master clinicians provided with their frameworks. Psychiatrists of each generation recall their favorite guides, whose that introduced them to psychiatric theory and practice. I believe this text by Dr. Dilts will be one such important guide for a new generation of students and clinicians embarking on—or already involved in—careers in psychiatry. It will do so in an enticing and stimulating way.



In this concise volume, Dr. Dilts covers it all—the models, the disorders, their treatments, and their theoretical underpinnings. However, it is not dry textbook reading. It is more like *lives in progress*, and how a modern-day practitioner guides the reader on matters of the mind and the brain in a lively and evocative style. He does this with grace, compelling case examples, and healthy tinctures of levity. This is instructive reading at its best, making new and complex material readily understandable, and making old hat stuff come alive (e.g., his review of Freudian theory and psychosexual development). Whether he's taking us through theory to help us understand the facts, or presenting one of his case examples in which we trust he will figure it out and help his patient, Dr. Steven Dilts, Jr., steadily and reliably guides us in this review of modern-day psychiatric practice and theory. With his scholarly, uncontentious, and very readable textbook on biopsychosocial psychiatry, he has provided a fresh and good start for us all.

—Edward J. Khantzian, M.D.

*Harvard Medical School*

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# Preface

What a piece of work is a man, how noble in reason, how infinite in faculties, in form and moving, how express and admirable in action, how like an angel in apprehension, how like a god! the beauty of the world; the paragon of animals; and yet to me what is this quintessence of dust?

—*Hamlet II.ii.303-07*

Hallucinations, delusions, depression, mania, substance dependence, anxiety, family problems, inner conflict—over one-third of the population will experience psychiatric problems such as these in their lifetimes. But despite their prevalence, psychiatric disorders seem mysterious. Are they the result of brain dysfunction? Unconscious anxiety? Group dynamics? No less mysterious are the people who try to solve such problems. The psychiatrist, making a new acquaintance and revealing his or her profession, is frequently met with one of several reactions. Predictable replies include:

“Uh, oh, you’re probably analyzing me, aren’t you?”

“Boy, could I use your help, ha, ha.”

“I hear all you psychiatrists are crazy, too.”

Psychiatric courses in medical school and residency training often do little to reduce this confusion. Psychiatry is a diverse field, comprising subjects from neuronal signal conduction to cultural effects on childhood development. Exhaustive literature is available on each topic, but students may not be shown how to integrate this information into a clinically useful whole. What is needed is a framework into which more detailed study on particular topics can be inserted.

Fortunately, such a framework is available, and it is used by all competent psychiatrists, whether they are researching cells or practicing psychotherapy. This framework is the *biopsychosocial model* of illness proposed by George Engel. In this model, the psychiatrist tries to understand the patient in biological, psychological, and social terms simultaneously, to arrive at a holistic picture with multiple strategies for treatment.

Recent successes in the basic sciences have given psychiatrists medical interventions previously unimagined. From Thorazine to Prozac to electroconvulsive therapy, these treatments have tempted psychiatrists to focus exclusively on the biological aspects of patient care. Generally, modern medicine has tended to turn all problems into problems of organ function. This tissue theory of illness—that all disease is ultimately cellular disease, as Rudolf Virchow said—has been a resounding success.

But this is not the only legitimate perspective on the problems of human beings. Virchow's tissue model has yet to explain and offer methods for coping with death, the conflicts of marital discord, bad habits, and economic difficulties, to name just a few. Nevertheless, human beings experience these sorts of problems, and they want to be helped with them. If medicine focuses solely on tissue problems, many other problems will be ignored. Worse still, potentially effective biological treatments may be undermined by such unresolved psychological or social problems.

Psychiatry in its modern incarnation is in a position to accommodate this diversity of problems. It can do this by shifting *models of the mind*. If a patient is hallucinating because he has a tumor infiltrating the temporal lobe of the brain, for example, psychiatry can turn to the biological model of tissue illness to explain the problem and offer solutions. If another is immersed in self-defeating behaviors, psychiatry can apply psychodynamic or behavioral psychology. If a child becomes depressed because of family interactions, a social model of family systems may help.

As we shall see, it is the practice of psychiatrists to assess patients in many dimensions simultaneously, with particular emphasis on the three domains described by Engel: the biological, the psychological, and the social. The focus of concern shifts constantly from one domain to another, and each domain interacts with and influences the others. But far from rendering psychiatric thinking confused and incoherent, the policy of shifting models depending on context is eminently practical. No single model serves in every setting. We should choose the ones we need for each particular problem.

That said, it is no simple matter to know which models to choose. It takes study, and it takes practice with patients. For that reason, I have used a number of clinical examples to illustrate the various models of the mind. They are real cases, although names and other identifying data have been changed to protect anonymity.

*Models of the Mind* is devoted to an examination of each of the three parts of the biopsychosocial model. Part 2, *Biological Models*, shows how symptoms are categorized and then examines the biological research behind each symptom cluster. Part 3, *Psychological Models*, discusses various psychological theories, and when each theory is applicable. Part 4, *Social Models*, covers the social theories of mental illness. The book

ends with an outline of a psychiatric evaluation and a model diagnostic interview.

Each part of this book presents the modern psychiatric understanding of mental illness, not in an effort to show that it is absolutely right, but to illustrate why it is the best currently available. Most of the information here eventually will be supplanted by even better ideas. This is a compliment to the approach of psychiatry, and of the sciences in general. They are about being the best we have based on current information. The hope is always to improve, and history suggests that this will continue to happen through the constant critique of theories, as researchers look for error and improvement. Every model presented is the result of such critical inquiry.

The reader will note that in this text the *DSM-IV* syndromes of mental illness are detailed in Part 2. This strategy has been adopted for a reason: The biological understanding of each psychiatric syndrome is specific to that syndrome. The neurobiology of schizophrenia, for example, is different than the neurobiology of depression. Our understanding of the biology of each psychiatric syndrome has been derived from careful study of many patients with specific problems. It would be meaningless to discuss the neurobiology of mental illness in general without explaining the neurobiology underlying each specific syndrome. To tackle the question, "What is the biological basis of mental illness?" we must first answer the question, "Which mental illness?"

This is not the case for the psychological and social models of mental illness. The principles of these models of the mind are much more general and could be relevant for any and all of the psychiatric syndromes. It is generally uninformative to try to describe the specific psychology of depression versus that of anxiety disorders, for example. There may be a wide variability of psychological and social issues between individuals with the same psychiatric syndromes, and individuals with different diagnostic syndromes may have similar contributing psychological or social issues.

It is possible, for example, to find two depressed patients with widely divergent psychological issues, each requiring a different psychotherapeutic approach. Their neurobiology, however, is likely to be similar, and so the odds are decent that both will respond to the same antidepressant medication. An individual with schizophrenia will almost certainly have a different neurobiology than one with a substance use disorder, yet both patients may share many of the same social stressors within their families. Psychological and social factors tend to be less specific to individual syndromes.

The strategy of describing the individual syndromes within the discussion on biological models is therefore one of convenience; it is not meant to imply that the descriptive model is a purely biological model. It does reflect the greater specificity of biological models for particular psychiatric syndromes.

This book grew out of a series of lectures I gave to third-year medical students during their psychiatry rotation at the University of Colorado School of Medicine, and to primary care residents at the WellSpan System. It is written primarily for third- and fourth-year medical students, as well as psychiatric residents, as a framework for understanding the core concepts of psychiatry. Nursing students, psychology students, and others in the allied health fields will also find it useful. Although “psychiatry” is the subject, the biopsychosocial model is relevant to all of medicine. The method illustrated here is not the property of psychiatrists—it just happens that they frequently use it. Good ideas can and should be used by anybody.

Rather than survey the field comprehensively, my aim is to provide the basic information about psychiatry that students need, in a manner that corrects a bias toward the purely biological. *Psychiatry is holistic medicine*. I want to show how psychiatrists think holistically, and to provide some inkling of why they think as they do. Other texts and lectures can supply more detailed information on the topics introduced here. What I hope is that the reader will leave this book with a sense of where various subjects fit in an overall scheme of psychiatric thinking. No previous knowledge of psychiatry is presumed. Details are presented, but some oversimplification is needed at times. Psychiatry is an evolving field, and there is much controversy in each area surveyed here. What remains constant is the approach, which is biopsychosocial and scientific.

The scientific method is simply a way of looking at problems. Scientific investigation exposes any and all proposed solutions to criticism. Only those that withstand the scrutiny survive. The process of problem solving through critical inquiry does not eliminate all problems, however. Because science demands a constant search for improvements, there always are new problems, no matter how successful our solutions. In past ages, human beings debated whether the sun orbited the earth or the earth the sun; now we wonder whether there is life on other planets, whether our planet can sustain its population growth, and whether the mechanical production of carbon dioxide can cause the earth’s temperature to rise. Human beings live in a world that is suitable, but not ideal, for our needs. This virtually guarantees an endless supply of problems.

Scientific “truths,” therefore, are never absolute, but are tentative, contingent . . . and the best we have. The hope of science is that the best of now can be replaced by the even better. It is not a moment for sadness when a scientific “truth” is overthrown, but cause for rejoicing—we have improved our lot.

Psychiatry has not always lived up to its goal of being a scientific endeavor. Although Sigmund Freud—one of the founders of the psychiatric enterprise—was a decidedly free thinker, he had a clear tendency toward dogmatism. Freud’s work was an attempt to explain all of

human thought and behavior by using a single model. It was Freud's intent to develop a psychology that left no holes, one that could confidently explain anything human beings might do or feel. Given the complexity of human beings, this seems an overly ambitious project. Still, for much of the first half of the twentieth century, that hope drove the field of psychiatry, with the result that rival theories were shouted down as heretical.

But good ideas can't be kept down. Freudian psychology began to be modified and expanded as the decades of the twentieth century wore on. Innumerable schools of psychology developed, each with its particular insights. The invention of Thorazine in the 1950s heralded the explosion of biological models of psychiatry. New social theories looked at individuals as interrelated rather than as isolated specimens. In the 1980s, great strides in the field of neurobiology led to increasing understanding of the neurobiology of mental illness and to ever more potent biological therapies.

Although the successes of the biological models are to be lauded, there can be too much of a good thing. Despite biological advances, science is quite a long way from having a complete model that perfectly explains human beings in all their complexity. Although Freud and many others have thought so, there is no universal theory of human beings on the horizon. Such a model seems unlikely. People and the world are just too complicated to be summed up by a single perspective. I doubt that a single model will ever be devised to explain every facet of the immense complexity that is the human being. As scientists, psychiatrists must always be looking for defects and errors in current thinking, no matter how apparently seamless.

The scientific method applies not just to investigation in the basic sciences, but also to our day-to-day work with patients. The scientific method is not a group of subjects, such as chemistry or physics, but a way of looking at the world through critical inquiry. The practicing psychiatrist never knows for certain what will help the patient, and so the practice of psychiatry is one in which hypotheses are made and then tested, whether in trying a medication or in making a psychotherapeutic intervention.

This rational approach is all the more powerful when it is rendered through an ethic of humanism. The principles of beneficence, nonmaleficence, alleviation of suffering, and prevention of harm—which have been institutionalized in professional medicine since the time of Hippocrates—lessen the risk that a soulless science will coldly assess and manipulate human beings efficiently, perhaps, but without the care and compassion they require. I have truncated the introductory quotation from *Hamlet* to suit my purposes here. The ending, "Man delights me not—nor woman neither" I cannot endorse. Neither did Shakespeare and nor would Hamlet, I think, were he not depressed. We humans are one another's deepest fascination, and when we live the examined life,

we treat one another as we ought. This was Freud's founding principle—that through self-examination we can free ourselves from thoughtless action and live harmoniously.

# Acknowledgments

I received invaluable help in the preparation of this book. My many teachers at the University of Colorado taught me biopsychosocial psychiatry from the beginning. The editors and staff at Taylor and Francis turned this idea into a finished product. John Dilts proofed the manuscript and has always been encouraging. My parents, Steve and Joann Dilts, spent innumerable hours editing and giving insights. They also instilled in me a love of learning that makes life a constant wonder. My wife, Jackie, is the joy of my life, my greatest friend, my best critic, and my inspiration. Thanks to everyone.





# Models of the Mind





# What is mental illness?

# 1

The purpose of psychiatry is to diagnose and treat mental disorders. From the time of the ancients, physicians have attempted to describe and devise treatments for such problems as delirium, mania, and melancholia. Whether the theory was an excess of bodily humors, demonic infestation, unconscious conflict, or neurobiological dysfunction, the psychiatric enterprise has been moved by the practical desire to treat the suffering caused by mental disorders.

So just what are mental disorders? What do they look like, what are their essential elements, and what are their causes? Before defining what constitutes a mental disorder, we need to know how to define “the mental.” Broadly, the basic elements of a mental state are *thoughts, feelings, perceptions, cognitions*, and *behaviors*. *Thoughts* are ideas, concepts, and the internal dialogue with one’s self. *Feelings* are subjective emotional states, such as happiness or sadness. *Perceptions* are the functionings of the five sensory modalities—sight, hearing, touch, taste, and smell. *Cognitions* are the basic abilities of intelligence, such as memory, attention, calculation, and language. *Behaviors* are actions—the outward manifestations of internal mental states—that an individual undertakes in the world.

Together, these elements constitute a *mental state*. Just as normal physiological functioning can become disordered, so mental functioning can become disordered. A case example shows what this might look like.

A *mental state* consists of one’s thoughts, feelings, perceptions, cognitions, and behaviors.

## *Case example*

G began to feel depressed and hopeless in her early 20s, after a particularly bad romantic involvement. She began to experience severe and recurrent abdominal pain. At first, doctors attributed this to adhesive scar tissue in G’s abdomen as a result of surgery for ovarian cancer a few years before. Twice the adhesions were surgically removed, but the pain persisted. Finally, endometriosis was diagnosed and G’s uterus was removed in an attempt to alleviate her pain. But still the pain continued.

G had always been what her friends called “compulsive.” She had a driving, achievement-oriented style, graduating first in her high school class and attending a prestigious East Coast university. There she studied physics, supporting herself by working full time and compiling numerous academic honors. Then, in her junior year while she vacationed in Georgia, she met a young man who swept her off her feet. By the end of the school year G had decided to drop out of school and move to Georgia.

Then this relationship came to an end some months later, G was receiving death threats from the young man. She retreated to her home state, living with her parents again. Despite numerous attempts to correct her recurrent abdominal problems, G experienced worsening physical symptoms. The migraine headaches that had plagued her for much of her life became more frequent and severe. She found food less and less tolerable. Everything except fruit made her feel dizzy and confused. She felt a fullness in her abdomen, and she saw shadows out of the corner of her eye that disappeared when she turned toward them. Her perfectionistic style had turned into obsessional thinking and compulsive, repetitive behavior. She would clean her room, the bathroom, and the kitchen continuously, for hours every day, obsessed with a fear of germs that seemed irrational to her but that she could not ignore, despite her frustrated efforts. Mental rituals plagued her. She would find herself compelled to count items and mentally type words over and over.

G’s food intolerance worsened, and she began to lose weight. Despite her petite, athletic figure, she viewed herself as ugly and grossly overweight. She thought it was inconceivable that anyone could be attracted to her if her weight was more than 120 pounds, although men complimented her looks and pursued her even when she weighed more. She denied wanting this attention, but she dressed seductively, wearing short dresses, low-cut tops, and elaborate hairstyles.

G’s anxiety problems began to mount. In the grocery store one day she had a panic attack. She suddenly became exquisitely fearful; panting, sweating, her heart pounding, she felt dizzy and unreal. G curtailed her social activity dramatically after that, in part for fear of panic attacks, but more because of an inability to tolerate the feelings of dizziness and unreality that assailed her in noisy public gatherings. In such situations, she simply felt out of control.

Throughout all of this, G consulted physicians. She was convinced that some sort of medical illness was responsible for her woes. Doctors ran nnumerable tests, looking for anemia, lupus erythematosus, chronic fatigue syndrome, rheumatoid arthritis, anything that might explain her symptoms. Nothing was found. G

invariably had normal lab tests and imaging studies. She was given trials of different antidepressant medications. All had intolerable side effects. G was able to take some antianxiety medications, which she began to administer to herself in high doses, but they provided little relief.

The psychiatrist who saw G at this time was impressed by the wide array of symptoms she presented. She also noticed that G's reported distress seemed markedly worse than her actual appearance. G was always carefully groomed, despite her claims to virtual incapacity, and she did not appear to be in any physical distress. Each session invariably began with the statement, "I'm doing so badly."

G's functioning was very poor. By this time, she was on disability and leading an isolated life. Her social contact was limited to her parents and a new boyfriend whom she found unsatisfactory. They no longer had sexual relations due to her chronic pelvic pain, and she was constantly irritated at the many ways he disappointed her. G was extraordinarily angry with everybody. She invariably portrayed her physicians as insensitive fools who would not give her the time and care she required. Her parents and the rest of her family could not understand her problems, and she found their encouragement to push through symptoms and go on living infuriating.

Perhaps surprisingly, the psychiatrist found G quite likeable in many ways. She was intelligent, witty, even hilarious at times, and she seemed genuinely committed to treatment, inspiring the psychiatrist to work diligently to find some end to G's suffering. Yet invariably, she found herself failing G. And though ostensibly working with the treatment plan, G missed appointments, saying she felt too bad to come in. She also started and stopped medications without involving her psychiatrist. G came to sessions informing the psychiatrist that she had felt suicidal over the weekend, but she had not called because every time she did, the psychiatrist was too problem-focused and not empathic enough. Yet when the psychiatrist simply listened to G's stories of suffering, G derided her as "silent" and "not having any ideas."

Using our definition of a mental state, we can discern which of G's problems might represent "mental disorders." G's symptoms can be organized as disturbances in the areas of thoughts, feelings, perceptions, behaviors, and cognitions. G was plagued with troublesome *thoughts*. For example, she held the irrational belief that any type of contamination was dangerous. She also was convinced that she was grossly physically defective. Her self-concept told her that she was a horribly deformed creature. G's *feelings* also proved disturbing. She suffered from depressed mood, anxiety, and overwhelming anger. Disruptive *perceptions*, such as

a sense of abdominal fullness when she had not eaten and the sensation of shadows in her peripheral vision, also were present. G's *cognitive* capacities were altered as well. For example, she showed signs of confusion, particularly after eating, and poor concentration. Finally, G evidenced problematic and upsetting *behaviors*, such as repetitive cleaning and frequent fighting with her boyfriend.

G also had a number of physical, or *somatic*, symptoms, such as pelvic pain, food intolerance, headaches, and dizziness.

When psychiatrists see someone with disturbances in these areas, they are on the way to diagnosing a "mental disorder." A mental disorder is a disturbance in one or many of the basic elements of mental functioning: thoughts, feelings, perceptions, cognitions, or behaviors.

This list is a start, but it is not sufficient. After all, everyone has problematic mental states at one time or another. Is anger at a friend a mental disorder? What about test anxiety? How do we know when someone has a mental state that qualifies as a "mental disorder?"

A *mental disorder* is a disturbance in thoughts, feelings, perceptions, cognitions, and behaviors.

## The descriptive model

### ***The Diagnostic and Statistical Manual of Mental Disorders***

Serious human mental problems tend to have recurring features. Depressed mood, for example, often is seen in conjunction with appetite and sleep changes. Severe panic produces symptoms such as hyperventilation, heart palpitations, sweating, and tremor.

In the last 35 years, the serious mental problems people recurrently face have been classified. Research has found that certain symptoms reliably occur together, and these sets of symptoms can be organized as *syndromes*. These syndromes are thus *described* by the symptoms that compose them. The descriptive model of mental illness attempts to describe the appearance of the major mental disorders through their symptoms.

The current state of the art in descriptive psychiatry is *The Diagnostic and Statistical Manual of Mental Disorders*, which is now in its fourth edition (*DSM-IV*). In broad headings, the *DSM-IV* describes the most common causes of distress and dysfunction in human beings, as shown below. These are the major disruptions in thoughts, feelings, perceptions, cognitions, and behaviors which human beings often find distressing and functionally impairing.

- Psychosis
- Mania
- Depression

- Anxiety
  - Obsessive-compulsive disorder
  - Posttraumatic stress disorder
  - Panic disorder
  - Generalized anxiety disorder
  - Social and specific phobias
- Psychiatric disorders secondary to general medical conditions
- Delirium
- Dementia
- Substance use disorders
- Personality disorders

The *DSM-IV* also contains listings for eating disorders, sleep disorders, disorders of childhood, somatoform and factitious disorders, dissociative disorders, sexual disorders, impulse-control disorders, and adjustment disorders.

For each disorder, the *DSM-IV* lists the symptoms that must be present to make a diagnosis. These disorders are defined and illustrated later in this book. Before proceeding to their descriptions, however, we must try to define what constitutes a mental disorder in general, compared to normal functioning.

## Normal versus disordered

According to major epidemiological surveys, which have studied tens of thousands of people, over 30% of the population will experience a major mental disorder in their lifetimes. This is a large number, on par with the percentage who will die from cancer. This large number, however, raises a question. If almost one-third of the populace is going to have a serious mental disorder, are mental disorders so common that they might be said to represent the norm? If the list of mental disorders is expanded to include every conceivable human malaise, that list would be huge indeed.

Since the beginning of medical practice, the attempt to define health and normality has been an area of intense controversy. Is health simply the absence of disease? Or is it the absence of clinically significant disease, since most organisms have something about them that is not working right, if only a single cell out of trillions? Does adequate coping and functioning constitute health, even if abnormalities are present?

Psychiatry, too, has been embroiled in the question of what constitutes mental health, as well as mental illness. Sigmund Freud believed the concept of “the normal” was fictitious; in his model of mental illness, everyone has some degree of psychopathology (Sadock & Sadock, 2000). Freud did, however, suggest that a compromise was possible, and that adequate health could be said to exist when a person could “love and work” with relative freedom and facility. Others have attempted to



define health and normality as *success*, whether in negotiating developmental stages, in adapting to the external world, or in mastering one's fears and anxiety. Still others define illness purely as tissue abnormality.

Defining normality statistically probably is not helpful. Coronary artery disease obviously is not a normal situation for human beings—clearly, it represents abnormal, detrimental functioning. But heart disease is very common, as is cancer. That these are statistically common situations does not make them normal, in the sense that people would not wish to intervene against them. Psychiatric disorders likewise may be statistically common, but they cause severe distress and impaired functioning and thus are states people usually want to eliminate. High intelligence is statistically uncommon, but it is usually desired and so is not a disease state, because it is adaptive rather than problematic. So statistical prevalence is not helpful in defining normal versus diseased.

More useful is the concept of *functional impairment*. Disease in this model is present when a disturbance reaches the level that it causes significant functional impairment. Occasional premature ventricular contractions represent abnormal functioning of the heart, but cardiologists do not usually consider them to be “disease” unless they interfere with functioning or lead to worsening arrhythmias. Most people have headaches from time to time, but they are considered abnormal only if they become functionally impairing or are a symptom of another illness, such as a brain tumor. Likewise, everyone experiences some degree of sadness in life, but depression is diagnosed only if it becomes functionally impairing.

From the foregoing, it should be obvious that there is no purely objective standard that can be applied to decide such questions. How we determine what constitutes health and normality is largely dependent on values in psychiatry and in medicine in general. However, most human beings wish to function well in their environment and be free of severe distress. Distress and dysfunction are usually considered possible indicators of a disease state. This definition is not perfect. Not all distress and dysfunction indicate disease (for example, a child's temper tantrum), while some diseases may be asymptomatic. But most disease states cause distress and dysfunction at some point in their course.

So how bad do distress and functional impairment have to be to warrant medical intervention? What problems are severe enough? The *DSM-IV* attempts to escape this dilemma in several ways. First, it lists specific criteria for each disorder. Simply having the blues, for example, does not warrant a diagnosis of depression. A number of other symptoms must be present, including changes in sleep, appetite, concentration, or energy; pervasive guilt; hopelessness; and suicidality. This type of depression, known as major depression, is a *syndrome*, a group of symptoms that are reliably found together.

One criterion for every *DSM-IV* disorder is that the symptoms must “cause clinically significant distress or impairment in social, occupational,

or other important areas of functioning.” This modifier is an attempt to ensure that a significant degree of distress and impairment is present for the diagnosis to apply. But it is far from perfectly effective in this task. The wording is so vague that, in theory, almost any amount of distress could be admitted as a diagnosis, since “significant” is poorly defined and obviously relative. What one person finds distressing and impairing, another might brush off as meaningless. Furthermore, the criterion may exclude states that are clearly pathological but nonimpairing, such as someone who hallucinates but is fully functional and not bothered by the experience. In practice, however, “significant distress and impairment” turns out to be relatively self-explanatory. Most of those seen in psychiatric practice are hurting badly and have areas of function that are blatantly impaired. This may be because, in the current medical-economic climate, psychiatrists usually see those whose disorders are severe enough that previous attempts at intervention—from family advice to consultation with a general physician—have proved inadequate.

The descriptive model has proved its usefulness in research and clinical practice. However, it does not capture everything that can be said about a particular disease state. All we need to know to make a diagnosis of depression is that someone has depressed mood and a few associated symptoms. We don’t need to know at all what it is *like* to be depressed. A diagnosis of depression can be made solely on the basis of a report of depressed mood along with changes in sleep, appetite, concentration, and energy. These are often quantified with depression inventory rating scales, which ask subjects to rate their symptoms numerically. Depression thus begins to look very much the same in every case, differentiated only by a symptom or two and by the degree of severity.

This is extremely useful in some regards. Sameness leads to investigative power. If depression was a vastly different entity in each person who experienced it, if it had no recurring features, it would be extremely difficult to study or even to talk about. Language inevitably serves as a kind of condenser, organizing large amounts of information into concepts, which derive their utility from the very maneuverability of oversimplification.

Using the statistic that perhaps 15% of the population will develop major depression in their lifetimes, and multiplying that number by the current U.S. population of about 260 million, we obtain the result that 39 million people currently alive have had or will experience major depression. It would be absurd to believe that nine symptoms of depression would completely capture the depressive experience of 39 million people. Each individual has unique characteristics that may bear on the problem of depression. Reducing each individual to a few common features is useful in the sense that it may allow systematic development of powerful interventions, but those interventions will necessarily be generalized as a result. An antidepressant medication may be effective for

many depressed people. But it will not work for everyone, and some people will find the side effects intolerable.

Systematic classification of illness runs the risk of missing real problems that do not fit neatly into the system. A woman might have a bad marriage that is wreaking havoc with her mood, but unless the problem extends into the domains of sleep, appetite, and energy, she won't "really" have *DSM-IV* major depression, if we are strict with our diagnostic criteria. Does this mean she does not have a problem worth solving?

If there is a consistent problem with the diagnostic categories, it is not that they are overly inclusive but, rather, that treatable illness often is missed, not just by individuals and their communities but by nonpsychiatric physicians. Estimates are that at least 50% of major depressions are not diagnosed and so go untreated. This is unfortunate, when one considers that major depression has a 15% mortality rate from suicide (Miles, 1977) and has been found to cause more distress and functional impairment than hypertension, diabetes, or chronic renal failure (Wells et al., 1989).

Ultimately, impairment embodies values—uncommon but valued states, such as high intelligence, are not diseases. Clear alterations in tissue structure that do not impair adaptation likewise are not usually diseases; for example, individuals may have the cellular changes associated with Alzheimer's disease, but they are not diagnosed with the syndrome of Alzheimer's disease unless they are functionally impaired. States that impair adaptation usually are considered diseases, since adaptation is highly valued. The desire to adapt to an environment appears to be universal in organisms. Without it, survival would be impossible over the long run.

The *DSM-IV* thus sets out to describe the major functionally impairing syndromes of mental disorder.

*Validity* is the degree to which a diagnosis represents what it is intended to.

## Validity and reliability

The cornerstones of meaningful diagnosis are validity and reliability. *Validity* is the degree to which a diagnosis represents what it is intended to. A diagnosis is valid if it describes a syndrome in such a way that it remains stable even as new information is discovered about it. A valid diagnosis must also be useful, so that meaningful predictions can be made from it. Validity also can be conceptualized as the degree to which a particular diagnosis consistently represents the same underlying disease. Some diagnoses are easy to validate. For example, myocardial infarction or bone fractures can be seen in a post-mortem study. However, many general medical diagnoses have no gold standard by which they can be assessed. Examples of these include migraine headaches, lupus erythematosus, and seizure disorders. As yet there are no gold standard criteria for psychiatric diagnoses. However, succeeding chapters in this book show that many psychiatric diagnoses are valid, although some

more so than others. Valid psychiatric diagnoses have remained stable and useful over long periods of time; in fact, some of them (such as depression, mania, and delirium) date from the time of Hippocrates.

*Reliability* is the degree to which diagnosticians agree that a particular diagnosis is present. The reliability for many *DSM-IV* diagnoses is quite high, at times surpassing the reliability of general medical diagnoses. For example, schizophrenia, major depression, and alcohol dependence each has a diagnostic reliability of about 95% (Guze, 1997). This means that 95% of the time, diagnosticians will agree on the presence or absence of these diagnoses in a particular individual. This degree of reliability surpasses that seen for many medical disorders, including pneumonia (about 72%), transient ischemic attacks (about 70%), and broken ankles (about 60%). As we will see, however, not all psychiatric diagnoses are as reliable as others. For example, the personality disorders have a diagnostic reliability of about 60%.

*Reliability* is the degree to which diagnosticians agree that a diagnosis is present.

### The *DSM-IV* is neutral about cause

The *DSM-IV* is descriptive. It simply describes what the major mental disorders look like. It does not, however, attempt to explain what causes those disorders. It does not say whether a particular syndrome is caused by abnormal brain chemistry, Freudian psychology, or social circumstances.

This is because *all mental disorders have biological, psychological, and social causes*.

### The biopsychosocial model

Psychiatry employs *models of the mind* to explain the causes of disorders in the areas of thought, feeling, perception, cognition, and behavior—the mental disorders. We can use these models to sort through G's problems, as presented earlier. How we look at her problems is going to depend very much on the models we use.

One way to look at G's problems is through biology. Modern investigative techniques have greatly increased our understanding of those alterations in the structure and function of the nervous system that result in mental disorders. For example, depression and anxiety are thought to be caused in part by dysfunction of the neuronal systems that use the neurotransmitter *serotonin*. Researchers have devised medicines to repair abnormal serotonergic neurotransmission, resulting in improved mood and decreased anxiety for thousands of people. This would be considered a biological model of mental illness. *The biological model of mental illness states that mental illness is caused by the dysfunction of tissues and cells*. Often, the tissues and cells in question involve the central nervous system, but this is not always the case.

The *biological model* states that mental illness is caused by the dysfunction of tissues and cells.

There are other ways of seeing G's condition, however. Instead of looking at the nervous system, a clinician might turn her attention to how G's thinking influences itself. In other words, how do some thoughts G has cause others to emerge? If G interprets returning to her parents' house as a retrogression to her childhood years, then she might resent this return to dependency and react with anger, attempting to reassert her independence by pushing her parents away.

This is a psychological model of mental illness. *The psychological model of mental illness states that mental disorders are the result of previous patterns of thinking, feeling, perceiving, cognating, and behaving.* In other words, mental states arise out of previous mental states.

Psychological treatment—or psychotherapy—might involve helping G see the causes of her anger, and so help her move to less damaging ways of expressing and coping with her emotions. The psychological model simply proposes that mental states of one kind influence later mental states. It makes no reference to the functioning of the nervous system by talking about the cells of the brain, nor is its treatment designed to affect cells specifically. Rather, it seeks to change how G thinks about things by using other thoughts, through talking and doing.

Alternatively, the clinician might look at the ways her interpersonal relationships have affected G. She began to become depressed after losing her boyfriend, for whom she gave up what had been a significant source of self-esteem, her achievements in education. The strain of the breakup forced G to return to her parents home, which (although a sanctuary) made her feel like a child again. G had worked hard, even compulsively, to establish her independence from her parents, moving across the country to attend college. Living again with her parents, G felt irritable and depressed about her perceived failure to emancipate, and the three people in the house began to engage in an escalating series of maladaptive interactions. G's growing hopelessness fueled a wish on the part of her parents to see G back on her feet and taking care of herself. Yet the more they suggested ways she might do this, the more G felt rejected and shamed by her failures. Using G's social situation as an explanation for illness serves as a social model. *The social model of mental illness proposes that mental disorders are caused by dysfunctional interpersonal interactions.* Intervention at the social level might occur through family therapy, which attempts to alter the structure of a family's relationships by seeing them as a group.

The *psychological model* states that mental disorders are the results of previous mental states.

How do we know which model is correct? The question itself reveals a bias. There is a tendency to believe that there is a single correct representation of the problem, one model that tells us the way things are. Is the psychological theory true? Or does G have an abnormality in her serotonin levels? Are these models mutually exclusive? What would it mean if researchers found, for example, that simply talking alters the cell biology of the brain? (As it turns out, this is exactly what happens in some types of psychotherapy.)

There is another way to approach the issue. Rather than asking which model is correct and true, it might be better to ask which model is relevant. All three models are internally consistent. They represent the facts of the case correctly within their given frameworks. In that sense they are all “true.” But in G’s case, relevance is more important than truth.

The reason for this is quite simple. There are innumerable representational models of G’s condition that, while perhaps true, are irrelevant to her problems. It might be true, for example, that G is composed of subatomic particles all interacting in various ways. But current state-of-the-art particle physics cannot provide any information that can help G become less depressed and anxious, get along better with her family, and so on. Particle physics is a *true but irrelevant* model for G’s problems.

What G needs are models of the mind that provide solutions for her problems. The three types of models we discussed earlier—biological, psychological, and social—all accomplish this task, but they do so using different theories about the problems, what causes them, and what to do about them. This creates difficulties if one insists there is a *single* right way to approach the patient.

For example, the biological model of mental illness currently has no way to explain psychological concepts such as conflict. It simply is not currently possible to describe psychological conflict using concepts like neurons and neurochemicals. Therefore, psychological conflict cannot be part of the current “truth” of the biological model. Conversely, psychological models cannot explain the fact that a large percentage of people with major depression have abnormalities in serotonergic neurotransmission. Wondering which one of these models is true needlessly excludes a lot of useful information.

If we are willing to accept any relevant model in order to come to some solutions, then our ability to cope with G’s condition is greatly increased—we have three solutions instead of just one. The criterion of relevance rather than truth allows us to mix models. Using relevance as our signal for application of a model, we apply all three, saying that all are equally relevant perspectives on the case. This means that G has trouble with her brain chemistry *and* psychological conflict *and* social interaction. This is the *biopsychosocial model* of mental illness.

The *social model* states that mental disorders are caused by dysfunctional interpersonal interactions.

## Biopsychosocial medicine

In the early 1980s, George Engel introduced the concept of the biopsychosocial model of illness (Engel, 1980). According to this model, all illnesses have at once biological, psychological, and social causes.

Engel was aware that the biological model of illness—Virchow’s “tissue” theory of illness, which says that all disease is ultimately cellular disease—had become the dominant model in medicine, to the extent that it virtually monopolized research and clinical practice. By focusing

on the dysfunction of cells and tissue as the root of illness, medicine achieved tremendous successes, including penicillin, polio vaccinations, aspirin, and blood pressure control medications. Because of its successes, physicians had become so acculturated to the biomedical model that they were largely unaware of its influence. How else would one view disease, except as the dysfunction of cells and tissue? In the biomedical model, treatment is properly focused on intervention at those levels. Yet gradually, patients began to feel disenchanted with their physicians and with the medical care they provided. It seemed that the cells of the body could be adequately cared for and the person left unhealed.

The *biopsychosocial model* states that mental illness is caused by biological, psychological, and social causes.

As an antidote, Engel proposed that the biomedical model of illness be consciously replaced with what he called the *biopsychosocial model* of illness. Engel recognized a “continuum of natural systems” (Figure 1.1), from atoms and molecules to cells, tissues, and organs; to individuals; to pairs, groups, communities, and populations; and, finally to the biosphere at large.

For all its successes, the language of the biomedical model is inadequate to capture levels of organization beyond that of cells and tissues. It currently is impossible, for example, to describe international politics using the language of cell biology. Engel also recognized that, although one level of organization might be more relevant at a given moment, the levels are inextricably linked—that is, changes in one level precipitate changes in another. Thus, we must try to understand illness on multiple levels at once.

This does not mean that different models turn out to say the same thing. Physicians still have to talk about cells using the biological model, about people using psychological models, and about interpersonal relationships using social models. In a sense, using the biopsychosocial model the physician must always come up with three assessments, although once he has done so it may be possible to see where the models overlap.

The strength of the biopsychosocial model of mental illness is that it is a more thorough description of problems. Because it uses multiple vocabularies that can speak to the many different levels of organization, from the molecular to the community, it integrates data that a single perspective cannot. Furthermore, it gives practitioners humility before their patients. Whenever we assess a person, it is a given that our assessment is incomplete—indeed, there never can be a truly complete assessment. This does not mean we cannot develop a formulation that is sufficient for clinical purposes. A person in cardiac arrest requires only that one know how to work a defibrillator to restore the heart’s rhythm at that moment. But seen across time, each person moves at each moment to a new area of concern. Recovering from her cardiac arrest, the patient may begin to worry about how her finances will be affected and about the loss of control she has experienced in her life. We speak to this perhaps with a “psychological” or a “social” model. But as worry impairs circulation to the heart, we may shift emphasis again to the cells of the