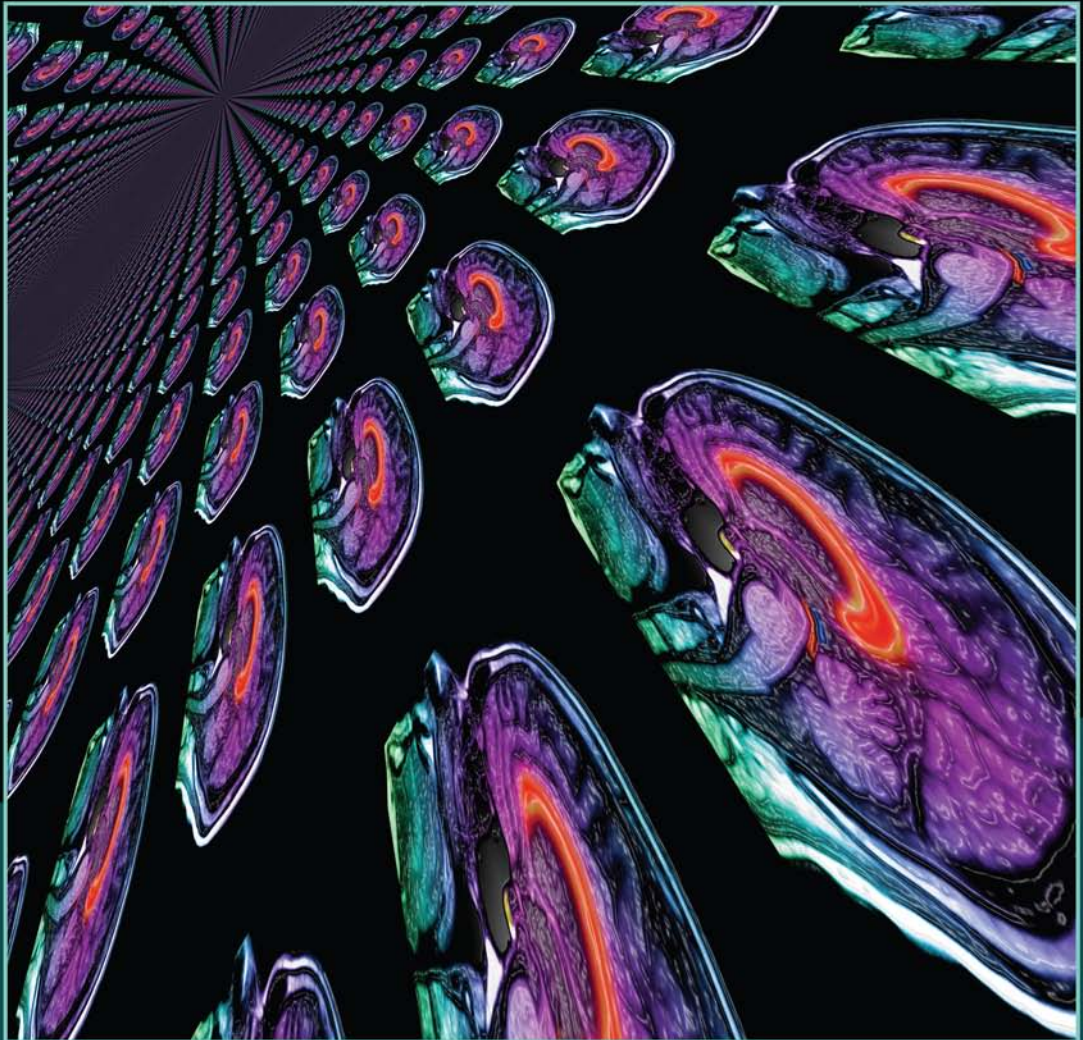


Elliott Ingersoll | Carl Rak

Psychopharmacology

FOR MENTAL HEALTH PROFESSIONALS

AN INTEGRATIVE APPROACH



Second Edition

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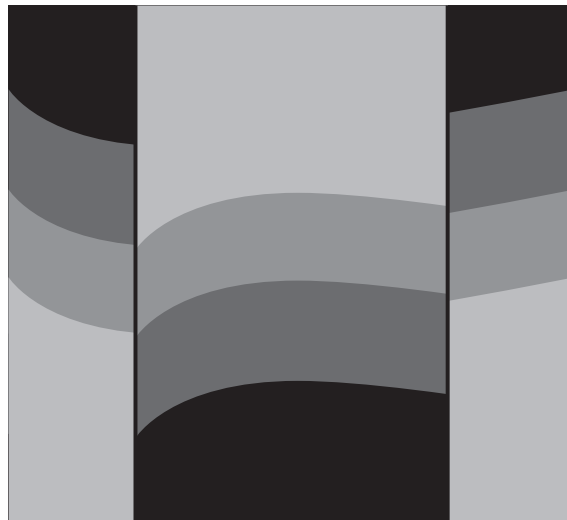
2nd Edition

R. Elliott Ingersoll

Cleveland State University

Carl F. Rak

Cleveland Psychoanalytic Center



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Professionals: An Integrative Approach,
Second Edition***

R. Elliott Ingersoll and Carl F. Rak

Product Director: Jon-David Hague

Product Manager: Julie Martinez

Product Assistant: Nicole Richards

Marketing Manager: Shanna Shelton

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To my students from the Clinical Counseling, School Counseling, Clinical Psychology and School Psychology programs at Cleveland State University. You've all kept me believing in and improving this work as we used early drafts in our classes—thank you so much! Also to my co-author Carl. This would not have happened without your extensive clinical experience and friendship.

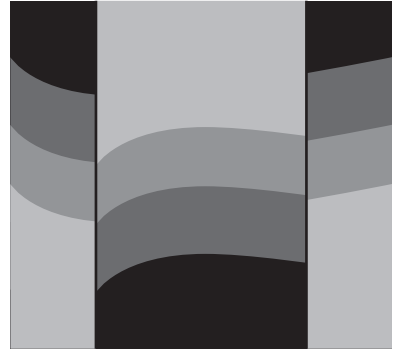
—R.E.I.

This edition is dedicated to Timothy Dugan MD, greatest of friends, mentor, and counselor on this endeavor. Tim is a passionate child and adult psychoanalyst and psychiatrist practicing in the Boston area.

To Elliott Ingersoll, my lead author, this is your dream endeavor and this second edition is so much better because of you. Thanks!

—C.F.R.

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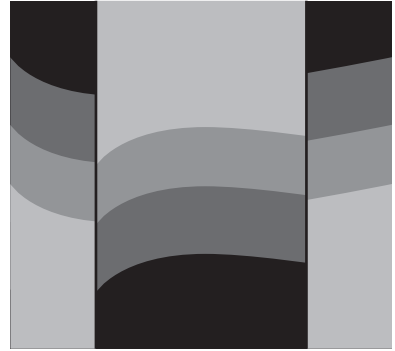
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Preface



These early years of the 21st century are a time of great opportunity for nonmedical mental health professionals. For the first time since the inception of the mental health fields we have excellent research on how to treat many mental health symptoms like depression and anxiety. Perhaps more importantly, the lay public is learning what many of us in mental health fields have known for years: we don't know what causes mental disorders and when medications work; we don't fully understand why medications work. There is no support for the overused cliché that mental disorders are caused by chemical imbalances in the brain. We know this now. Just because we can intervene chemically (in some but not all cases) in no way means the chemicals affected by the intervention were “unbalanced” to begin with. The truth is we still don't know what balanced brain chemistry is, let alone unbalanced brain chemistry. So why is this a great time of opportunity for nonmedical mental health professionals? Because the public is learning that there are no psychotropic medications that act as “magic bullets” that will “cure” mental disorders. Now that that misconception is dispelled we have a chance to teach laypeople which symptoms may respond to talk therapy, which seem to require medications and which will likely respond to a combination of medications and therapy. This sort of education and advocacy is critical in all mental health professions to inform clients and their families about what we know and what we do not know. An informed client can then make

informed choices. The medications discussed in this book are like any tool. They can be used wisely or mendaciously misused. We have tried to present both the benefits and risks of these medications as well as their implications for our society. We hope dear reader that you find what you are seeking in the following pages.

ACKNOWLEDGMENTS

I (Ingersoll) want to thank my research assistants over these years, Kevin Blake, Laura McIntyre and Doreen George Thomas. Thanks to Carlene Ortiz for her selfless support when I was losing faith in my ability and my sense of vocation. Finally thanks to Cleveland State University for giving me sabbatical time to finish this project. CSU has been an excellent place for me to work and I appreciate the support I have gotten there.

I (Rak) also wish to thank Drs. Patrick Enders, Zinovi Goubar, Kay McKenzie, and Luis Ramirez. They are all careful and thoughtful psychiatrists working in the Cleveland area. They always took time to answer my questions and speak with me about the dilemmas of medicating children and adults. Thank you!

Finally, we both are so grateful to Julie Martinez who believed enough in this project to give us a much needed extension when our lives were “off the rails” and we needed more time.

PART ONE

An Overview of the New Edition

This book is an introductory level text on psychopharmacology for students preparing for careers in psychology, counseling, and social work. Like other texts, we cover pharmacodynamics and pharmacokinetics for each class of psychotropic medications. We also discuss psychosocial treatments that are recommended concurrent with medications. In addition, we discuss the psychological, cultural, and social issues around psychopharmacology. In the United States, the pharmaceutical industry is an enormous economic force with at least two lobbyists for every Senate and Congressional representative (Petersen, 2009). The industry's power (like any other) can be used constructively or destructively but it forms much of the cultural and social discourse. Given this, it is unrealistic and irresponsible to omit discussion of the relevant issues, which include influence on diagnosis, the creation of *DSM-5* (American Psychiatric Association, 2013), and the increasing medicating of children and adolescents despite scant evidence supporting the practice.

Although this book is a revised edition of *Psychopharmacology for Helping Professionals: An Integral Exploration*, it is a different book. Our aim is that this text meets your needs. Having used the first edition for six years, our students have taught us a great deal about how we can help them organize and learn this material. We have presented the basic information (updated) in a more traditional manner and deleted much of the historical discussion. This

allowed us to add sections on psychosocial treatments, expand the discussion of medication and children, and add chapters on psychotropic medications and the elderly as well as drug replacement therapy for addictions. Rather than simply listing study questions at the end of each chapter, we have added learning objectives for each main heading in the chapters and then review questions *at the end* of each section that should tell the student whether or not they met the objectives. Our students have said that because much of this information is new, this style helps them “digest material” in “small bites.” This makes sense to us as we want the journey to be nourishing for all readers.

WHAT IS AN INTEGRATIVE APPROACH?

Integrative approaches have been around in psychology and psychotherapy for decades and are making their way into psychiatry and thinking about psychopharmacology. In the 21st century, with a new diagnostic manual (*DSM-5*), the truth is we still do not know definitively why people develop mental and emotional disorders and, when medications work, precisely how they work. An integrative approach is one that takes multiple perspectives on the topic being discussed. In this book, we will examine psychotropic medications from four perspectives.

The first perspective is from a biological or physiological point of view. Because this model is frequently called the *medical model*, we will use that phrase when writing about this perspective. This perspective examines what seems to be happening in the nervous system when people are suffering mental illness and what medications seem to do in the nervous system that correlates with a decrease or remission of symptoms. The second perspective is a psychological one. This is not usually part of psychopharmacology books but if you are a clinician you know it is important. What does the client think/feel about taking medication? How might medications change the subjective, phenomenological experience of the client? The psychological perspective is more concerned with the client's "mind" than their brain.

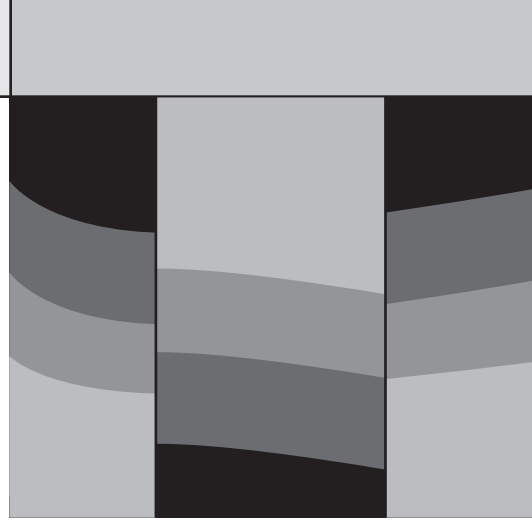
The other two perspectives are cultural and social. The cultural perspective reflects the subjective shared experience of particular groups. It reflects shared beliefs of groups whether they be groups of people identified with an ethnic label (e.g., Orthodox Jews) or the shared worldview of a client's family of origin (e.g., "we don't believe in mental illness or taking medication"). The social perspective reflects that more objective aspects of our society. Things like

laws governing psychotropic medications, power to prescribe medications, and the economic power of the pharmaceutical industry would all be views from the social perspective.

These four perspectives derive from Integral Theory (Wilber, 2000) and, although the theory is far more complex than these four perspectives, it emphasizes that the more perspectives you account for, the more complete your understanding of the topic in question. For example, because this book is aimed at nonmedical mental health professionals or students training to enter those professions, it would not make sense to omit the psychological perspective that offers ideas on how to work with clients around medication issues that are more psychological than physiological. Equally, no discussion of pharmaceuticals can omit the power of the industry without becoming two-dimensional and unrealistic. Given that, as we progress we will be very clear which perspectives we are using at different points in the book. Although a majority of the material is focused on the biological perspective (that we will call the "medical model") these other points of view will give a fuller picture of psychopharmacology and help clinicians advocate for their clients across cultures.

CHAPTER ONE

Introduction



Learning Objectives

- Be able to conceptualize the “information explosion” and how it relates to the brain sciences.
- Be able to describe pharmacodynamics and pharmacokinetics.
- Be able to articulate the benefits of an integrative approach to psychopharmacology.

ENCOURAGEMENT TO THE READER

Some of you may begin this book with some anxiety because this is a new area for you. You may imagine that psychopharmacology is exclusively a “hard science,” and perhaps you don’t think of yourself as a “hard science” kind of person. You may even feel uncertain about your ability to master basic psychopharmacological concepts. First, let us assure you one more time that our goal is to make this topic accessible to readers who are practicing as or studying to be mental health professionals, many of whom may not have a background in the physical or organic sciences. Second, we recommend to those teaching a course in psychopharmacology that, because of the rapid nature of change in the field, teaching styles that rely on memorization are of limited use in this area. We recommend helping students master basic concepts and then applying these concepts to cases. To facilitate that process, we supply cases and objectives/review questions for main sections of the book. Finally, we invite you students to join us in an incredible journey centering on the most

complex organ known to humanity—the human mind and brain. We hope you can revel in the complexity of the brain and the sheer magnitude of its power. We hope you can resist the temptation to want simple and concrete answers to many of the questions this journey will raise. We also hope you learn to appreciate the ambiguous nature of “mind” and its relationship to the brain. As authors and researchers who have traveled this path before us will attest, there are no simple or even known answers to many of the questions that arise (Grilly & Salmone, 2011; Schatzberg & Nemeroff, 1998). We encourage a mixture of trying to comprehend the information while dwelling in the mystery that is the context for the information. Before moving on, we offer a mantra to help you implement this recommendation.

A MANTRA

Even though psychopharmacology is in its embryonic stage, it is a vast and complex topic. Several years ago I (Ingersoll) engaged in some multicultural counseling training with Paul Pederson. In that training, Dr. Pederson commented, “Culture is complex, and complexity is our friend.” We offer a paraphrase as a mantra for psychopharmacology students: “Reality is complex, and complexity is our friend.” We remind the reader of this mantra throughout the book. You might try saying it aloud right now: “Reality is complex, and complexity is our friend.” If you reach a passage in this book that is challenging for you or that arouses anxiety, stop, take a deep breath, and practice the mantra.

The primary audience for this book is mental health clinicians who may not have had much training in biology, neurology, and psychopharmacology. This includes counselors, psychologists, clinical social workers, marriage and family therapists, and substance abuse counselors. We will refer specifically to these different mental health professionals throughout the book as well as including all of them in the phrase “mental health professionals.” Although there are significant differences in the training models of these different professionals, they all draw on the same knowledge base when treating clients in school or clinical settings. We also want to add that there are several labels used to describe the therapeutic relationships clients have with mental health professionals. These labels include “counseling,” “therapy,” “talk therapy,” “psychosocial interventions,” and “psychotherapy.” There is great debate across the mental health professions about whether and how these labels differ, but in this book we use them synonymously for the sake of simplicity. While reading this book, you will notice technical terms highlighted with bold print the first time they appear. These terms are defined in the Glossary at the end of the book. Although not all key terms are highlighted, those that nonmedical mental health professionals are less likely to have been exposed to are defined in the Glossary. We encourage you to keep a dictionary handy for other terms that may be new to you. If you come across a word you do not understand, stop reading and check the definition in the glossary or a dictionary. Many readers skip over unfamiliar words assuming the meaning will become clear in a later sentence. Clarifying unfamiliar words when they occur adds to the enjoyment of reading the book and facilitates a better understanding of the topic.

SCIENTIFIC TRUTH AND THE ACCELERATION OF KNOWLEDGE

It is no secret that knowledge accumulation is accelerating. We are familiar with the label “information explosion” to describe this phenomenon. In the early 1970s, the French economist Georges Anderla

(1973, 1974) prepared a statistical estimate of how quickly knowledge has been growing, based on a variety of indicators. According to Anderla, if you begin in the year 1 C.E. (which stands for Current or Common, Era) it took 1500 years for knowledge to double. The second doubling took only 250 years (1750). The third doubling took only 150 years (1900), the fourth 50 years (1950), and the fifth doubling only 10 years (1960). If there is any accuracy in Anderla’s model, knowledge began doubling almost monthly in the late 20th century (Wilson, 1992). Increase in knowledge about the human brain is particularly pronounced.

The final decades of the 20th century unearthed more knowledge about the human brain than all prior centuries combined. One of the most exciting fields benefiting from these developments is psychopharmacology. *Pharmacology* is the science of the preparation, uses, and effects of drugs. *Psychopharmacology* is the branch of pharmacology related to the psychological effects of drugs and the use of drugs to treat symptoms of mental and emotional disorders. These drugs are called *psychotropic medications*. “Psyche” colloquially refers to “mind,” and “tropic” means “acting on” or “moving toward” but many in the field would say these medications act on the brain and this affects the mind.

Developing neuroscience technologies have helped accelerate brain research and change in the field of psychopharmacology by letting scientists peer more deeply into the brain and nervous system. The latest technological advances include positron emission tomography (PET) scans, magnetic resonance imaging (MRI), Diffusion Tensor Imaging (DTI), Voxel-Based Morphometry, and magneto-encephalography. PET scans for brain functions work thus: The technician injects a radioactive form of oxygen into a person and then asks the person to perform a particular task under a PET scanner. Because the brain area most active during the task requires more oxygen, the PET scanner can trace the radioactive oxygen to those sites in the brain used in the task. The computer scanner then generates a picture that maps the brain activity. MRI scans generate images by magnetizing hemoglobin (the iron-containing colored

matter in red blood corpuscles that carry oxygen to tissues) and by tracing changes in blood oxygen levels in the brain. Like the PET scan, MRI images of the brain can be used for diagnostic or research purposes. DTI is a type of MRI that can highlight microstructural changes in the white matter of the brain or glial cells (Emsell & McDonald, 2009). This is becoming more important because we discovered that, far from being only glue or insulation for neuronal axons (*glia* comes from the Greek word for *glue*), glial cells actually send neurotransmission and communicate with other cells (Fields, 2009, 2010; Sasaki, Matuski, & Ikegaya, 2011).

Magnetoencephalography measures the magnetic field associated with electrical currents in the brain to trace activity levels across brain structures when subjects are engaged in a particular task (Bloom, Nelson, & Lazerson, 2001).

There are also multiple techniques for extracting information from MRI scans. The most common quantitative techniques are “region of interest” (ROI) and computational morphometry studies. In ROI analysis, a trained rater manually traces a brain region of interest using “boundary rules” to compare sizes between different brains scanned. *Computational morphometry* is an automated method of comparing brain structures between different populations in a study. The most common variation is called voxel-based morphometry (VBM), which allows viewing of gray matter, white matter, and cerebrospinal fluid (Emsell & McDonald, 2009).¹ Voxel-based morphometry is neuroimaging analysis technique that uses a type of mapping (statistical parametric mapping) to identify regions of interest in the brain and calculate their volume. Finally, there are also deformation-based morphometry (DBM) and tensor-based morphometry (TBM). Both techniques are used to compare brain structures, but they rest upon different theoretical assumptions.

¹As with any approach, VBM has received criticism because of the assumptions on which it is based. See Ashburner and Friston (2001) and Bookstein (2001).

Computer technology has also enabled pharmaceutical researchers to generate three-dimensional models of brain cell receptors and the drug molecules that bind to them. Brain-scanning technologies have allowed us to see how the drugs act on the nervous system (**pharmacodynamics** covered in Chapter Two) and how the body metabolizes and eliminates drugs (**pharmacokinetics** covered more extensively in Chapter Three). These are only some of the advances that have contributed to the exponential increase in the number of drugs developed annually.

Despite the explosion of advances in psychopharmacology in the last 30 years, the field can still be thought of as in an embryonic stage (Advokat, Comaty, & Julien, 2014). Although scientists know a lot about the physiological mechanisms of many psychotropic medications, we know little about how they actually change mood. Researchers are just now beginning to explore how the effects of psychotropic medication differ depending on the age, sex, and race of the person taking them (Heinrich & Gibbons, 2001). Although Western society is emerging from a postmodern era where multiculturalism was heavily emphasized, little research has been done on differing cultural worldviews regarding psychotropic agents, let alone how such agents differentially affect people of various racial and ethnic backgrounds. In addition, people are now rethinking whether current diagnostic categories for mental and emotional disorders apply to younger children (Ingersoll & Marquis, 2014; McClure, Kubiszyn, & Kaslow, 2002a) and how medications affect the dozens of developmental variables in this age group. Although the Human Genome Project has initiated efforts to understand human DNA, in the late 20th century scientists were still unclear about the role of over 90% of human DNA (Suurkula, 1996). In 2012, teams of scientists agreed that much of the DNA previously thought to be “junk” are actually “switches” that regulate how genes work or turn “off” and “on” (Doolittle, 2013). Efforts to describe the human genetic code and mechanisms of gene expression hold great promise for drug development, but there is still a great deal to be learned.

As recently as 30 years ago, psychopharmacology was a medical subspecialty for psychiatrists in particular. At that time, nonmedical mental health providers could ethically practice with little knowledge of psychotropic medications. As long as they had a medical professional to whom they could refer clients, their knowledge of psychotropic medications could be minimal. This is no longer the case. Most (if not all) mental health professionals work with clients taking psychotropic medications and need to be knowledgeable about the drugs their clients are taking. The integrative perspective we emphasize in this book provides a template that, when applied properly, suggests that understanding the physiological properties of psychotropic medications is merely the beginning of the journey. We use the integrative Model to address many pressing issues rarely discussed in books on psychopharmacology. For example, most psychopharmacology books simply discuss what medications are used for particular symptoms but do not address how to deal with cultural issues that may influence a client's resistance to taking a prescribed medication. Another example is the place of **direct-to-consumer advertising**. Although mental health professionals may know that changes in federal law in the 1980s allowed pharmaceutical companies to advertise directly to consumers via television ads and other media, they may not know that there is a fierce debate over whether such advertising for psychotropic medications is ethical.

Pharmacologists working in controlled conditions in laboratories may have the luxury of limiting their focus to interactions between drug molecules and neurotransmitters. But mental health professionals in the field must understand clients' perceptions and subjective experiences of taking medications, cultural views of psychotropic medications, group differences in response to the medications (according to sex, age, race, etc.), developmental considerations, socioeconomic institutions that mediate access to medications, and competing worldviews and theories on what causes mental health symptoms. The four perspectives of our integrative framework requires consideration of these topics and sets this book apart from other books on psychopharmacology. Although this

consideration requires more effort, it contributes to a well-rounded knowledge of psychopharmacology that translates into better clinical practice.

Review Questions

- What is meant by "information explosion" and how is it reflected in psychopharmacology?
- Describe pharmacodynamics and pharmacokinetics.
- What are the benefits of an integrative approach to psychopharmacology?

CHAPTER ONE: SECTION TWO

Learning Objectives

- Be able to describe why therapists need more than just a physiological or medical understanding of psychotropic medications.
- Discuss the differences between what is commonly thought of as "mind" and what is thought of as "brain."

Everybody Is Right (About Something): The Many Faces of Truth

History shows that extremists, despite the strength of their convictions, are rarely correct (Radin, 1997, p. 205).

In this book, we consider multiple dimensions of and perspectives on psychopharmacology. Although it would be convenient to state that all mental and emotional symptoms derive from some malfunction of brain chemistry, there is no evidence to support this statement. Many people are surprised to hear this, so it is important to restate: There is no evidence that all mental and emotional symptoms derive from some *malfunction or imbalance* of brain chemistry. Today pharmaceutical companies advertise directly to consumers and often give the impression that

psychological disorders are really “medical disorders” that can be alleviated with a particular medication, much as antibiotics can alleviate a bacterial infection. If psychological disorders were like medical disorders, then studying the brain, brain chemistry, and scientific method would suffice. Even the *International Classification of Diseases, tenth edition (ICD-10)* has a separate volume for mental and behavioral disorders (WHO, 1992). So although the medical model provides an important perspective, we also need to study the mind, the sociocultural contexts in which mind and brain function, and the consciousness underlying mind and brain.

The entire truth of psychopharmacology cannot be explored solely through scientific method. Like a diamond, truth has many facets, which are complementary (but not necessarily competing). As philosopher Ken Wilber (2003) notes, no mind is capable of 100% error, so everyone is right about something but not everyone is equally right about everything. Given that insight, exploring the different perspectives of psychopharmacology need not produce warring factions championing mutually exclusive theories of **etiology** and treatment. Taking different perspectives in exploring psychopharmacology reveals different truths about it.

Lest you think we are lapsing into some type of **radical constructivism** or **relativism** (we are not), consider these questions: What sort of blood test would you use to determine your political philosophy? How might exploring your feelings about your mother help diagnose a streptococcus infection? How can a firsthand understanding of a person’s religion be used to tell you how much money he or she earns? How could data about your yearly income be used as an indicator of your sexual orientation? These questions are meaningless, because each proposes an incorrect tool for finding the answer. Because different perspectives reveal different faces of truth, they require tools matched to the task. There are different forms of truth and knowledge and different tools are employed in exploring them. We emphasize this point because many people believe that medical science (or science in general) is the only tool and that it can solve any problem.

The Medical Model Perspective

The perspective of medical science (and science in general) clearly reflects one type of truth, and we draw amply from it in this book. Whereas a relativist would say that one perspective or type of truth is just as good as another for any job, we maintain that some perspectives and tools are better than others for particular tasks. Everyone knows that no blood test can determine a person’s political philosophy. Does this mean one’s preference for a political philosophy does not exist? No. It simply means a blood test is not a good tool to use to explore the issue. In this case, dialogue is far better than a blood test. To find out a person’s political philosophy, you talk with the person to learn what his or her political philosophy is. Regarding the diagnosis of streptococcus infection, a throat culture is a far better test than discussing feelings about one’s mother.

Scientific truth is objective truth that can be verified by some observable measurement. This is the type of truth emphasized by the tools of scientific method, the medical model, and most psychopharmacology books. The perspective of scientific truth is an important cornerstone of psychopharmacology. This is what we are referring to as the **medical model perspective**. It is characterized by its focus on objective, measurable data related to individuals. Although labeled “medical model” for the purposes of this book, this perspective also includes schools of psychology that rely heavily on objective measurement (such as behaviorism). In psychopharmacology, the medical model perspective helps us understand parts of the brain that seem correlated with symptoms of mental or emotional disorders and things such as the molecular structure of drugs. But mental health professionals are concerned with more than the correlations of symptoms with brain functions or the molecular structures of drugs. As professionals, we are also concerned with *how clients feel* about taking medications, how and whether psychotropic medications alter their consciousness, relevant cultural issues that may affect their attitudes or increase their preference for alternatives to psychotropic medications, aspects of group membership (race, sex) that may predict differential responses to psychotropic

medications, as well as how our clients' place in society affects their ability to get the drugs they may need.

The Psychological Perspective

Other perspectives complement the medical model and help mental health professionals build a well-rounded understanding of psychopharmacology. These other perspectives reveal other faces of truth that the medical model is not equipped to explore but that are equally important for mental health professionals. As Wilber (1997) noted, the techniques of the medical model perspective can trace the electrical currents in a subject's brain but can only give scientific verification about the electrical activity in that brain—they cannot tell whether the person is thinking about opening a homeless shelter or robbing a liquor store. Further, there is no evidence that the experience of consciousness is caused solely by electrical activity in our brains (Chalmers, 1995).

Information about what other people (including our clients) are thinking can only be obtained through truthful dialogue with them. This introduces the second perspective we use in this book, the **psychological perspective**. Psychology's name is derived from the goal of studying the mind or soul. Despite that origin, it has evolved into the scientific study of mind and behavior and has come to greatly resemble the medical model. Schwartz and Begley (2002) assert that psychologists have become overly attached to a version of the medical model that dismisses conscious experience and focuses only on what is observable or measurable. They conclude, "Surely there is something deeply wrong, both morally and scientifically, with a school of psychology whose central tenet is that people's conscious life experience ... is irrelevant" (p. 6). It is that conscious experience that we are referring to when we use the phrase "psychological perspective" or what consciousness feels like from the inside. We include the psychological perspective because clients' **phenomenological** experiences of the world cannot be dismissed as irrelevant and are often a key ingredient in their growth.

Our psychological perspective deals with consciousness. Although one of the most ambitious pursuits of scientific knowledge is the Human Genome Project, there exists an equally ambitious (even if less well known) human consciousness project. The psychological perspective as revealed by the consciousness project is summarizing millennia of knowledge about the human mind, the subjective human experience, consciousness, the domain of the unconscious, and the farther reaches of human nature (be they existential or spiritual). For more on the human consciousness project go to <http://www.nourfoundation.com/events/Beyond-the-Mind-Body-Problem/The-Human-Consciousness-Project.html>. This knowledge is different from knowledge generated by the medical model perspective, but is no less important for mental health professionals who deal with the whole person. The subjective knowledge about oneself that counseling, psychotherapy, or meditation explore is different from the type of knowledge that science produces to tell us about how nerve cells fire in our brain. It is truly odd that although psychotropic medications are actually supposed to modify experienced consciousness, very few books on the topic actually address that and instead prefer just to discuss how drug molecules bind to neuronal receptors.

Suppose, for example, that you experience an insight about yourself that leads to more effective ways of living. For the sake of the example, assume the insight is that you fear emotionally depending on others, so you tend to push them away and isolate yourself. When you experience this insight, certainly nerve cells will fire in your brain, but no one can prove the cells are "causing" the insight—in some cases they accompany it and in others they fire slightly before your conscious knowledge of the insight. Further, others cannot learn about the insight by reading a PET scan of your brain taken when you had the insight. You must truthfully share the insight in order for others to learn about it—no physical measurement of any type (brain cells firing, heart rate, blood pressure, and so forth) will reveal the insight—you must share it. This is an important type of knowledge of the sort commonly shared and explored in counseling sessions.

The psychological perspective also includes people's unconscious life experience. The many tools we use to explore the psychological perspective include introspection, dialogue about that introspection, interpreting dialogue, and sharing our interpretation to assess its accuracy. Although we can only be aware of those things that are conscious, by definition, the tools of the psychological perspective can help clients bring to awareness things that were previously unconscious. As Wilber (2003) noted, psychotherapy is always about increasing awareness and this increase in awareness is experienced through the psychological perspective. These tools are familiar to anyone trained in the mental health professions, but it is amazing how easily we forget their importance.

The Cultural Perspective

A third perspective or type of truth concerns how people should treat one another as well as the beliefs and worldviews people may share. These shared beliefs constitute aspects of culture. Culture, ways of living that groups of humans transmit from one generation to another, includes the shared beliefs and worldviews that different groups develop to understand the world and their place in it. Because shared worldviews are so important to culture, we refer to this third perspective as the **cultural perspective**. The word *culture* may refer to a subgroup of people who share similar genetic and social histories, as in "African-American culture" or a subgroup that comes about for other reasons, such as a business or industry, as in the culture of a pharmaceutical company. Again, no number of PET or MRI scans of brains can show what worldview a person holds, which ways of relating or worldviews are better than others, or whether a person prefers to be "in time" or "on time." As Wilber (1995) puts it, scientific knowledge can never tell us why compassion is better than murder, why social service is better than genocide. Michael Polanyi (1958) also articulated this insight. Polanyi was a Nobel Prize-winning chemist who realized during the communist revolutions in Europe that the revolutionaries were trying to build a culture and a society on scientific principles (the Lenin-Trotsky five-year plan) and that

those principles were the wrong tools for the task. Polanyi understood that the tools of science could never help these revolutionaries build a culture or a society worth living in. History has validated his judgment. Although the design of the Soviet Union tried to account for and control all the measurable aspects of society, it severely underestimated the cultural/ethnic differences that, since its dissolution, have erupted between former member nations. Scientific truth can tell us which psychotropic medication has the greatest probability of easing a client's suffering. But the scientific truth and the medication cannot erase nonbiological sources of suffering nor address what this suffering means to the client. For example, if the client shares a worldview that is highly suspicious of taking psychotropic medication, the client is unlikely to comply with the prescription.

The Social Perspective

A fourth type of truth, which concerns the structure and impact of social institutions, we call the **social perspective**. Social institutions are based in shared beliefs, policies, and laws that affect people in observable, measurable ways. Whereas the medical model perspective deals with measurable, observable data about individuals, the social perspective deals with measurable, observable data about groups and particularly institutions. One good example in psychopharmacology is the ongoing debate about whether a person can and should be medicated against his or her will (Gelman, 1999). Although the legal system is ideally based on the public's shared understanding of how we need to be regulated with laws, laws prohibiting or permitting forced pharmacological treatment have profound impact on individuals. Besides the legal institutions of our society, other institutions relevant to psychopharmacology include the government (e.g., the Food and Drug Administration, the Drug Enforcement Agency) and the pharmaceutical industry in general. Issues such as whether people in the United States should be able to import medications from Canada are the domain of the social perspective. (Again, imagine the absurdity of trying to resolve this import question through the medical model perspective.)