



Science and Psychiatry: Groundbreaking Discoveries in Molecular Neuroscience, by Solomon H. Snyder, M.D. Arlington, Va, American Psychiatric Publishing, 2008, 513 pp., \$65.00.

Psychiatrists have a noble tradition of revisiting and teaching the classic papers that revolutionized the field, such as the works of Sigmund Freud, Jean Piaget, or Wilhelm Reich. In this tradition, American Psychiatric Publishing has published a compilation of several of the scientific papers written by one of the modern giants in the field: Solomon Snyder, M.D.

Snyder pioneered and then dominated the integration of brain science into psychiatry, primarily through defining how drugs work in the brain. Snyder published his first scientific paper nearly 50 years ago, and the arc of Snyder's scientific career coincides with massive advances in our understanding of the brain. When he started his research career as a medical student, only five or six substances were considered to be neurotransmitters in the brain. Now hundreds of substances serve as signaling molecules in the brain, and some of the most unconventional of these were discovered by Snyder.

The book opens with a brief autobiographical essay by Snyder. Unbeknownst to many, Snyder excelled at classical guitar in high school and even studied under Andrés Segovia. Although he was drawn to a career in classical music, his choice to ultimately go into biomedical research had less to do with his interest in scientific matters and much more to do with his excitement and gratification over the process of discovery—that is, doing science. His attraction to psychiatry was based upon his enjoyment of philosophy in college. Psychiatry, he believed, might be a specialty in which the life of the mind meets medicine. The book closes with an essay by Snyder entitled “The Audacity Principle in Science,” in which he reflects on scientific creativity and mentoring, with particular reference to his mentor, Nobel Prize winner Julius Axelrod, Ph.D.

Between these two essays, Snyder has selected several of his seminal scientific articles, each of which is preceded by an introduction from a distinguished scientist that places the article in context. (I myself started my research career in Snyder's laboratory and wrote one of the introductory essays.) For the nonscientist, this format provides a helpful sense of context and illuminates the true novelty of Snyder's research. Commentators include Eric Kandel, Eric Nestler, Charles Nemeroff, George Aghajanian, Carol Tamminga, Herbert

Meltzer, Robert Post, Anne Young, Samuel Barondes, and Nancy Andreasen.

Snyder is an excellent scientific writer, so it is fun and instructive to visit papers written up to 35 years ago. The discovery of the opiate receptor led logically in Snyder's fertile mind to the discovery of its natural agonist, endogenous opioid peptides. The demonstration that antipsychotic medications act upon dopamine D₂ receptors shed light on the mechanisms of their therapeutic action and side effects. The characterization of serotonin transport in pinched-off nerve terminals prepared from brain tissue provided a precise target for rational drug design that has since been exploited by the pharmaceutical industry to discover Prozac, among other drugs. The elusive therapeutic action of the mood stabilizer lithium was clarified by characterizing the disposition of an intracellular signaling molecule, inositol triphosphate.

Snyder pushed the limits of what was defined as a neurotransmitter. He demonstrated the important role in the brain of nitric oxide, a gas that diffuses from its neuronal site of synthesis across neuronal membranes to activate cyclic nucleotide synthesis in adjacent cells. He characterized the role of D-serine (virtually all amino acids in animals are L-stereoisomers), which is released from glial cells and acts as a co-agonist of the brain's major excitatory receptor, the NMDA receptor. He links these bizarre, atypical neurotransmitters to diverse disease processes such as impotence, stroke, and schizophrenia.

Snyder has published more than a thousand scientific papers over a period of nearly 50 years. He is the most highly cited biomedical scientist in the world. Furthermore, his *h*-index, a value that takes into account the number of papers that are highly cited, is 191 (191 of his papers were cited at least 191 times), the highest in all research (1). Snyder has a record of being an extraordinary mentor. He has mentored over 100 doctoral students and postdoctoral fellows who now hold scientific leadership positions in psychiatry, neurology, pharmacology, neuroscience, and the pharmaceutical industry. He writes passionately about the mentoring process: the back and forth between mentor and mentee that leads to the out-of-the-box scientific advances that characterized his career. This book provides a very personal and readable introduction to the writings of one of the giants in modern psychiatry and neuroscience. After you read it, it should be placed on the shelf next to Freud's *The Interpretation of Dreams*.

Reference

1. Hirsch JE: An index to quantify an individual's scientific research output. *Proc Natl Acad Sci U S A* 2005; 102:16569–16572

JOSEPH T. COYLE, M.D.
Belmont, Mass.

Book review accepted for publication May 2008 (doi: 10.1176/appi.ajp.2008.08050694).

Comprehensive Textbook of AIDS Psychiatry, edited by Mary Ann Cohen and Jack M. Gorman. New York, Oxford University Press, 2007, 656 pp., \$98.50.

The *Comprehensive Textbook of AIDS Psychiatry* will serve as a standard reference for psychiatrists and other mental health professionals providing care for HIV-positive individuals. This is a scholarly work informed by the experience of many pioneers in AIDS care and research, including Dr. Mary Ann Cohen, who first wrote about psychiatric care of people with AIDS when it was a deadly new epidemic without medical treatment. She and her colleagues return to chronicle the vast range of knowledge that has been gained through nearly three decades of research and experience in caring for people with AIDS.

The scope of this text ranges from initial biopsychosocial assessment to end-of-life care. The reviews are all extensively researched, and the information is useful for both general practice and HIV specialty care. The clinician will learn to recognize HIV-related cognitive, motor, and psychiatric manifestations of HIV infection, reconsider the treatment of psychiatric disorders of patients who are infected with HIV, identify psychotherapeutic modalities appropriate for persons at various stages of HIV disease, and understand the particular concerns about medication adherence, provider "burnout," and ethical dilemmas in the treatment of HIV-infected individuals. The chapter on substance use disorders emphasizes the role of specific substances in HIV transmission and high-risk behaviors, and the review of hepatitis C is essential knowledge for treating the nearly 30% of HIV-positive patients who are co-infected. For those interested in more specific comorbidities, there are chapters on HIV-associated renal disease and endocrinopathies, antiretroviral-related metabolic side effects, including lipodystrophies and cardiovascular disease, opportunistic infections associated with AIDS, and two excellent chapters on the neuropathological manifestations of HIV infection. The chapter by editor Jack Gorman and colleagues summarizes advances in psychoneuroimmunology.

The drug-drug interactions between antiretroviral and psychotropic medications, such as the impact of ritonavir on levels of psychiatric medications through cytochrome P450 enzyme inhibition or the withdrawal symptoms that can be caused by enzyme induction when nevirapine is administered in conjunction with methadone, are thoroughly reviewed. There are also multiple reference tables summarizing these interactions, although these should be used cautiously and with the understanding that clinical effects can vary significantly between individuals. There is also a brief review of the mechanisms of action of antiretroviral medications, such as interference with viral transcription and replication, which includes protease inhibitors, reverse transcriptase inhibitors,

and the newer fusion and integrase inhibitors. However, decisions about specific antiretroviral combination therapies by likely viral resistance based on genotype mutations are beyond the scope of this book.

This text establishes a standard of excellence for the care of the individual HIV-positive patient by the individual psychiatrist within the context of the biopsychosocial model. There are also chapters on HIV and youth, serodiscordant couples, and the elderly from a developmental life cycle perspective. However, there is little analysis from a population perspective, such as the myriad issues faced by the population of HIV-positive women of reproductive age. The notable exceptions are a chapter on the homeless HIV-positive population and a provocative chapter suggesting that the disruption of already disadvantaged communities through the "engine" of incarceration in the nation's prisons accounts for the disproportionate impact of HIV on racial and ethnic minorities. There are estimates that one in five HIV-positive individuals in this country passes through the correctional system, and the chapter proposes system interventions targeting this population. Disparities of care and problems in the health care system are discussed in a chapter on health services that includes an interesting historical perspective on syringe exchange programs as a community intervention.

Finally, while there is a rich discussion of the role of psychiatric disorders in HIV transmission and high-risk behaviors in this book, there is little discussion of the role of the psychiatrist in HIV prevention. HIV psychiatry is a prime example of the need for a public mental health perspective that addresses populations as well as individual patients, explores sociocultural roots of illness as well as the medical and psychological, and targets interventions for communities as well as for individuals. Psychiatrists should be engaged in disease prevention as well as diagnosis and treatment.

JOYCE SEIKO KOBAYASHI, M.D.
Denver, Colo.

Book review accepted for publication May 2008 (doi: 10.1176/appi.ajp.2008.08050719).

The Insanity Offense: How America's Failure to Treat the Seriously Mentally Ill Endangers Its Citizens, by E. Fuller Torrey. New York, W.W. Norton, 2008, 288 pp., \$24.95.

Since 1980, psychiatrist E. Fuller Torrey has been collecting newspaper clippings of stories about violent acts committed by persons with mental illnesses. The collection now occupies several file drawers, and many of the choicest items are reproduced in this, his latest book decrying the sad fate of persons with severe mental illnesses in America today. They are recruited here to support an argument that he considers self-evident: "The public now perceives mentally ill persons to be more violent because they *are* more violent" (p. 165). Torrey considers this violence the most obvious symptom of the "disaster" that constitutes the current treatment system.

Torrey and the advocacy organization that he leads, the Treatment Advocacy Center, have adopted a strategy of trying to propel change in our admittedly inadequate mental health system by emphasizing the potential for violence from people with mental illnesses. This strategy, along with the center's favored remedy of broadening the scope of inpatient