

cation, or training, for hatred as one reason to insist on education for social and civic strength. All these goals would seem to many of us reasonable and admirable.

He has a section called Pillars of Prevention, with chapters on preventive diplomacy, democracy and prevention of mass violence, equitable socioeconomic development, education for survival, human rights abuses and international justice, and restraints on weaponry. He supplements that with a list of what he considers a few recent advances in preventing mass violence, such as Kofi Annan's work in Kenya in 2008, and some restructuring of the United Nations.

He is an expert on relevant institutions and organizations, and this becomes the focus of the third major section of the book, which looks at the United Nations, the European Union, the Organization for Security and Cooperation in Europe, NATO, and many smaller potential contributors, several of which he has helped to build and/or strengthen. He does several times note—without, in my judgment, fully acknowledging the power of—obstacles and limitations and conflicting aims in those organizations.

It is an impressive book, painted on a large canvas. One might wish that the next edition be a bit more tightly edited to reduce repetitiveness and perhaps to leave room for further development of thought, or books, on some unwieldy areas only briefly touched on, such as religion, the psychology of ideologies, nationalism and tribalism, the sociobiology of aggression, and perhaps even the implications of climate change. Overall, however, this book will usefully challenge some of any reader's basic values and assumptions. It is a hopeful, widely informed, widely thoughtful, and quite readable one-man multidisciplinary survey of an unpleasant and important topic that makes many of us angry and most of us sad and uncomfortable.

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The Human Illnesses: Neuropsychiatric Disorders and the Nature of the Human Brain, by Peter C. Williamson, M.D., and John M. Allman, Ph.D. New York, Oxford University Press, 2011, 256 pp., \$75.00.

“Man is the only animal that blushes—or needs to”
—Mark Twain

A vigorous yet unstable orphan, neuropsychiatry was conceived from the antipodal chromosomes of the Enlightenment's scientific revolution and of the Romantic Era's insurrection against such. As its very name implies, neuropsychiatry is both bridging and divisive. Objectivity, observation, description, empiricism, and rationality are pitched in a relentless, yet productive, struggle with the subjective, spiritual, irrational, intuitive, inventive, and imaginative. It is no wonder that the parent specialties of neurology and psychiatry both embrace and disown our subspecialty.

Historically, “lesion” became, and in many ways remains, the lens of classical neurology. A severed anterior interosseous nerve (a motor branch of median nerve) leads to weakness of the flexor pollicis longus (the flexor muscle of the thumb) and of the flexor digitorum profundus (the flexor muscle of the distal phalanges of the thumb and index finger). Oh how intellectually satisfying, unless it afflicts you—the reader of this book review—and you wish to turn the page of this Journal with the affected hand. As applied to our understanding of the brain functions and dysfunctions conventionally subserved by neuropsychiatry and psychiatry—such as mood regulation, motivation, social behavior, reality testing, abstract thinking, judgment, and intelligence—lesion-based insights are both elusive and enlightening. Today, the lenses for lesion discovery in psychiatry and neuropsychiatry comprise functional brain imaging, cellular and molecular biology, basic neuroscience, and genetics. For example, components of complex brain-based disorders like depression have been illuminated by lesions such as a polymorphism within the promoter of a serotonin transporter gene that has been linked to psychosocial vulnerability to stressful experiences (1, 2). Nonetheless, neuropsychiatry must express and exert caution when advocating that this approach be applied to far more expansive terrains.

In the preface to their book, Peter C. Williamson and John M. Allman articulate their ambitious intent: “Our thesis is that the neuronal pathways that underlie neuropsychiatric conditions mirror unique human capabilities. Determining how these capabilities are represented in the human brain not only tells us about what makes the human brain human but also provides a framework for understanding neuropsychiatric disorders in a new way, much the same as the circulatory system provided a framework for understanding heart failure at the beginning of medicine 400 years ago” (pp. vii–viii). Let us term this method “neuroanalysis.” The distinguished authors draw upon and blend their extensive experience and remarkable scholarship in neuropsychiatry (Dr. Williamson) and in evolutionary biology (Dr. Allman) to accomplish this goal. If only, however, the computer were a pump.

In the initial pursuit of their grand goal, the authors provide a cogent overview of basic neurodevelopment, regional structural and functional neuroanatomy, neurotransmitters, and neuronal circuits. Interspersed in this exploration are engaging facts and insights gleaned from evolutionary biology. For example, in depicting “unique aspects of the human brain,” the authors reveal that Von Economo neurons, a vital class of neurons located in layer 5 of the anterior cingulate—in both cognitive and affective processing regions—and in the fronto-insular cortex can be found only in humans, great apes, elephants, and whales. The authors hypothesize that these neurons may be involved with the capacity for self-control through the recognition of having committed an error. They suggest that the anterior cingulate and fronto-insular cortex connect with areas of the brain storing information related to past experience and seemingly mediate social behaviors based on this experience.

In chapters 4–7 of their text, the authors seine prominent and prototypical neuropsychiatric conditions through fine nettings of epidemiology, genetics, brain imaging, neuropsychology, neurobiology, and neuropathology in order to capture aspects of the CNS that might be uniquely human. The

disorders considered are schizophrenia, bipolar disorder, autism, attention deficit hyperactivity disorder (ADHD), anorexia nervosa, and frontotemporal dementia. Often reconceptualizing the essences of the respective illnesses through recent evolutionary and neurobiological advances, these explorations are exhilarating. For example, they convincingly posit that ADHD is a primary deficit in motivation rather than a deficit in attention. In making their case, the authors deftly review the recent research revelations about the neurocircuitry, neurogenetics, neurobiology, and neuropathology of the brain's primary reward system—the dopamine system—as it would relate to the symptoms and treatment of patients with ADHD.

In chapters 8–12, Professors Williamson and Allman highlight and explicate what could be considered “hot topics” in the social, cognitive, and behavioral neurosciences from neuropsychiatric and evolutionary biological perspectives. Such intriguing concepts as “the social brain,” “stimulus independent thought,” and “default networks” are explored, and vexing questions such as “Do animals have a theory of mind?” are raised and answers tendered. Insights about the human brain are sought through the neuroanalysis of humor, empathy, disgust, embarrassment, and intuition in people with and without neuropsychiatric illness.

This reviewer, however, was somewhat surprised by important foci of human thought and emotion that were *not* considered, such as music, art, poetry, storytelling, and religion/spirituality. These uniquely human preoccupations would also seem worthy probes to expose the “nature of the human brain.” In the totality of their deliberations, there seems to be an imbalance between what is conventionally considered the “neuro” at the expense of the “psych.” Notwithstanding this notion, the volume is a compact (168 pages of text, 61 pages of references), captivating, and current update of vital scientific advances that reflect upon the uniqueness of the human brain, mind, and condition. I highly recommend this book to students and practitioners of neurology, psychiatry, and neuropsychiatry as well as to others interested in understanding the unique nature of the remarkable human brain.

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***How to Talk with Families About Genetics and Psychiatric Illness*, by Holly Peay and Jehannine Austin. New York, W.W. Norton and Company, 2011, 280 pp., \$24.95.**

Patients who suffer with psychiatric illness often have questions about how the illness developed and the risks for

other family members becoming affected. *How to Talk with Families About Genetics and Psychiatric Illness* responds to the increasing need for mental health clinicians to help families deal with these common questions, often based upon concepts from genetic medicine. The authors directly address the new psychiatric genetic research in an accessible manner and how, together with an individual's personal and family psychiatric history, genetics can provide information about likely causes of mental illness and the magnitude of risk. The book also provides guidance regarding how to initiate conversations when the clinician suspects that genetic information may address a patient's unspoken concern or help him or her cope or adapt to mental illness.

Peay and Austin do not claim to equip clinicians to become genetic counselors, but the book does provide a basic overview of genetics 101 that is a useful resource for clinicians. One example of a particularly helpful tool that they have developed for explaining the etiology of mental illness is the “jar model.” The jar is a simple visual analogy to explain the two factors—genetic and environmental—that contribute to mental illness. The picture of the jar depicts how mental illness can develop in a way that anyone can understand, especially for those who do not have a good grasp of numbers. Moreover, I expect that their model will be particularly useful in explaining vulnerability factors to participants in my current research on informed consent for psychiatric genetic research.

Following genetics 101, each chapter of the book is organized to provide examples of common questions and answers about psychiatric genetics. The earlier chapters are written for clinicians to use to discuss possible genetic contributions to the development and/or inheritance of mental illness. By way of example, Chapter 2 provides questions to assist the clinician who is not accustomed to talking about the genetics of mental illness while respecting a patient's right to not know as an option. Later chapters focus on common questions from the patient perspective. For example, one question that Chapter 6 addresses is “Why did you tell me that you think my risk to develop psychiatric illness is probably less than the 15% risk I found on the Internet?” In this example, the authors provide ways to explain to the patient about averaged risks and that in his or her case the clinician should also take into consideration the information provided that modifies risk for this unique situation.

In addition, each chapter includes pertinent cases from Peay's and Austin's experience in genetic counseling. The cases bring each chapter's discussion around a particular topic to a conclusion, often including family history and the graphic pedigree. In Chapter 8 and Chapter 9, the cases focus on the subject of pregnancy and parents of at-risk children and affected children. One case involves parents who are both physicians and have an autistic child; they are expecting a second child. The authors explain how the clinician could address the parents' questions about the etiology of autism and a conversation about how the parents might manage the uncertainty regarding the baby's condition for the remainder of the pregnancy and early in the baby's life. Other chapters include cases about unaffected family members, genetic susceptibility testing, and genetic testing to inform medication strategy.

While the consistent format of the book involves some redundancy for one who reads it from cover to cover, the layout increases its value as a resource on specific topics. *How to Talk*