

is broad and ranges from a summary of what works in treating persons with substance use disorders to the treatment system in England, including also a discussion of stimulant use, adverse effects of khat, pathological gambling, laboratory testing, treatment of patients with dual diagnoses, motivational interviewing, substance misuse in adolescents and pregnancy, legal defenses in substance-related cases, and the role of forensic psychiatry in addiction medicine. The scope of the areas that are addressed and the information that each chapter presents is a wonderful overview of the growth of addiction medicine over the past 50 years. Each chapter contains recent information and many details that will be of interest to a wide range of practitioners, both within the United Kingdom and elsewhere.

Of special interest to me were the excellent chapter on stimulants, the discussion on emerging efforts aimed at reducing the reincarceration of drug abusing criminal offenders by expanding access to treatment in the criminal justice system, and the discussions of studies showing that integrated care is the most effective way to deliver services to patients with co-occurring psychiatric and medical disorders. On the latter topic, the authors emphasize the need to better involve primary care physicians in screening for substance-related problems and referring patients who have a substance use disorder to treatment, but without the expectation that this process will decrease the need for specialty care. The inclusion of a chapter on pathological gambling and the similarities that are drawn between its clinical features and those of substance dependence might be of particular interest to those working on DSM-V, in view of the longstanding uncertainties about whether this condition should be classified as an addictive disorder.

A final area that I found of particular interest was the discussions found in various chapters about the mechanism by which national efforts are being made to improve the treatment system in the United Kingdom. These efforts are reflected in the work of various commissions who are charged with addressing specific topics and making recommendations based on a review of published studies. It is difficult for an "outsider" to understand the degree to which the recommendations are carried out, but it was interesting to read about how England's National Health Service seems to be a vehicle through which systematic, evidence-based recommendations to improve treatment can be coordinated and implemented on a national level.

This book presents a great deal of specific, current, and clinically relevant information on a wide range of topics that are relevant to the practice of addiction medicine and is likely to be of interest to clinicians, administrators, and researchers. In addition, this book makes the reader think about the potential of a national health care system to implement evidence-based medicine, improve treatment for persons with substance use disorders, and improve public health.

GEORGE E. WOODY, M.D.
Philadelphia, Pa.

Book review accepted for publication January 2008 (doi: 10.1176/appi.ajp.2008.08010004).

The Confabulating Mind: How the Brain Creates Reality,
by Armin Schnider. New York, Oxford University Press, 2008, 344 pp., \$57.50.

Little did I know the morning I received this book that I would be spending the night on the neurosurgical unit with a friend who was exhibiting the cardinal signs of confusion, amnesia, and confabulation. In the hope of enlightenment and wanting so very much to encourage his wife and family, I began rather urgently to read. I was not disappointed.

What happens when an individual who cannot remember events contrives a fictitious account he or she believes to be true? The process of confabulation—unintentional false memory production in cerebral disease states—has intrigued psychiatrists and neurologists for more than a century as a potential key to unlocking the mysteries of human memory and imagination. In this 344-page book, Professor Armin Schnider explores the various clinical presentations and etiologies of confabulatory states and then extrapolates processes by which healthy individuals might create reality for themselves. Throughout the book, the author draws upon his extensive clinical and research experience within the field of neurorehabilitation, an area sadly overlooked by many modern-day health care systems, to produce an authoritative and challenging yet impressively accessible and enjoyable text for anyone interested in the neurobiology of cognition. The chapters are well referenced with a helpful summary at the end of each. The book starts with a memorable case study and subsequent chapters are punctuated by finely drawn clinical vignettes that bring the whole to life.

The first chapters interweave early theories dating back to 1886. Russian psychiatrist Sergei Korsakoff first drew attention to the eponymous syndrome, though the term "confabulation" (from the Latin *confabulari*, meaning "to gossip") as a description of "the emergence of memories of events and experience that never took place" was not introduced to the medical literature until around 1900 by Carl Wernicke and Karl Bonhoeffer. Translating eminent works from these and other European luminaries, Schnider demonstrates how experts of the time grappled with this phenomenon in the years before neuroimaging. Clinically relevant confabulation has always been relatively rare (in contrast to amnesia). Most patients had chronic alcoholism, infection, or nutritional malabsorption. Confabulation was soon also described in patients suffering from brain trauma, senile dementia, and later, subarachnoid hemorrhage involving the anterior communicating artery. Tellingly, most current theories (e.g., gap filling, dysexecutive syndrome, monitoring, temporality, constructive deficits, or personality traits) were anticipated on the basis of careful clinical observation alone.

Confabulation does not always occur in the context of brain disease. False memories occurring in healthy people have attracted a largely nonclinical literature, particularly in relation to eyewitness testimony, and Schnider describes how normal memory, under certain conditions, becomes the easy victim of its own associative power. Schnider proceeds to critically appraise current neuropsychological theories of confabulation. Although invariably associated with impaired free recall, information storage, learning, and recognition capabilities may remain intact. Therefore, he argues confabulation need not be associated with a "gap in memory." According to

the author's work, confabulation is not a unitary disorder and biologically dissociable forms may be identified. Behaviorally spontaneous confabulations, which include distorted elements of real-life past events and result in inappropriate actions, seem to represent an exceptionally direct account of what patients consider to be their reality and constitute a model for how the brain distinguishes between thoughts that do and do not pertain to current circumstance. Functionally critical anatomical areas include Brodmann's area 13 in the orbitofrontal cortex and the ventromedial cortex. Failure to suppress or filter the interference of irrelevant memories, rather than difficulties storing mnemonic information per se, appears the most plausible impairment.

Clinical rehabilitation is challenging, but thankfully most patients improve. Based upon his suppression theory, Schnider advocates minimizing confrontation rather than conventional memory training. Prognosis may depend on the lesion site; in cases with posteromedial orbitofrontal cortex, basal forebrain, or limbic damage, confabulation continued up to 2 years, though most eventually recovered the ability to adapt to ongoing reality and lead relatively independent lives, despite continuing amnesia.

In the last chapters, Schnider marshals evidence from translational studies, including data from animal studies, to

develop his hypotheses further. He proposes that in healthy individuals, orbitofrontal-subcortical neurocircuitry is responsible for evaluating and disconnecting irrelevant memories by altering neocortical synchronization. The "reality-confusion" of confabulation represents failure of this preconscious orbitofrontal cortical filter. But how might the orbitofrontal cortex do it? Confabulators adhere to false ideas even when reality is contradictory, suggesting deficient behavioral extinction. The posterior orbitofrontal cortex and its ventral limbic connections are fundamental in coordinating reward and extinction responses. Schnider speculates this reward system extends to monitoring unconscious anticipations and outcomes devoid of hedonic value, acting as a reality check. "Extinction cells," signaling the absence of reward, are concentrated in area 13. Damage to these cells may cause individuals to lose the ability to adapt their ideas to ongoing reality and act out unrewarding goal-seeking behavior. This final hypothesis awaits controlled exploration. No doubt Professor Schnider is already working on it.

NAOMI A. FINEBERG, M.B.B.S, M.R.C.Psych.
Hertfordshire, U.K.

Book review accepted for publication January 2008 (doi: 10.1176/appi.ajp.2008.08010037).

Reprints are not available; however, Book Forum reviews can be downloaded at <http://ajp.psychiatryonline.org>.