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BOOK REVIEWS

The Self In Disguise: Where Does It Hide In The Brain?

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The Lost Self: Pathologies of the Brain and Identity. Todd E. Feinberg and Julian Paul Keenan (Eds.). 2005. New York: Oxford University Press, 275 pp., $49.95 (HB).

Reviewed by André Aleman, Ph.D, *BCN Neuroimaging Center, University of Groningen, Groningen, The Netherlands.*

The recent emergence of the field of social cognitive neuroscience has been accompanied by an increasing number of studies aimed at uncovering the neurobiological basis of the self. For instance, several studies have now been published using functional neuroimaging to uncover neural responses to self-related processing in healthy subjects. Complementing this approach, important insights regarding the brain and the self can be obtained from studying neurological and psychiatric conditions that affect the self. Examples of such conditions are frontal lobe impairment, autobiographical disorders, dissociative disorders, schizophrenia, and autism. *The Lost Self*, edited by Todd E. Feinberg and Julian Paul Keenan, addresses both types of research endeavors. The reader gets even more: a perspective from philosophy and a first-person account.

After a short introduction (Chapter 1), philosopher John R. Searle discusses the self as a problem in philosophy and neurobiology (Chapter 2). He briefly alludes to different ideas about the self—which in philosophy traditionally regards the problem of personal identity—that have been put forward by Descartes, Hume, Locke, and Kant. Searle persuasively argues that the first-person perspective of "unity of our conscious field" is central to understanding the self. The subjective contents of consciousness require a principle of unity, but the principle is not a separate entity. According to Searle, the "irreducibly mental unified conscious field is a biological and, therefore, 'physical' or 'natural' feature of the brain." Chapter 3, by Gillihan and Farah, addresses the question about whether one can map this biological feature of the brain using functional neuroimaging. More specifically, the chapter provides a thought-provoking, critical methodological overview of functional imaging studies of self-processing. The authors show that the studies that have been reported are hampered by significant conceptual and empirical problems. First, definitions of self are heterogeneous and often vague or circular. Second, a number of studies compare a self-processing condition to a non-self-processing condition, but fail to adequately control for dissimilarities between both conditions, such as differences in cognitive load or affective content. These are potentially confounding factors that may explain the differences in activation between self and non-self conditions. In several studies subjects are imaged while making judgments about trait adjectives. They are asked to indicate whether these are self-descriptive or not. Contrasting brain activation during the former and latter conditions would reflect self-processing. However, as Gillihan and Farah point out, it could be argued that both conditions must engage the self-concept in order to decide whether an adjective is self-descriptive or not. Gillihan and Farah doubt whether the self can be localized in a specific brain region or network, and even go on to suggest that "our vivid awareness of a self, like awareness more generally, may not be explicable in terms of the mechanistic workings of the brain" (p. 30).

In following chapters, Feinberg describes a theory of neural hierarchies of the self (Chapter 4) and Stuss et al. discuss the role of the frontal lobes in self-awareness (Chapter 5). In Chapter 6, Fujiwara and Markowitsch review the neural basis of autobiographical disorders, in which retrieval of personal past experiences is seriously impaired. Psychogenic amnesia is an example of a dramatic case of autobiographical memory loss, in which severe emotional stress or self-related problems can correspond to a total block of memory contents. Autobiographical disorders in neurology and psychiatry rarely correspond to circumscribed regions in the brain but may instead arise from lesions or functional disturbances in the distributed network underlying autobiographical memory: hippocampal formation, medial prefrontal cortex, ventral frontal cortex, and posterior association cortex. Chapter 7 (by Goldenberg) concerns body image and the self and makes a strong case for the conclusion that body image is a fragile result of fleeting integration of current perceptual inputs, prior experience, and culturally acquired knowledge. For example, the "rubber hand illu-

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sion" shows that a rubber hand can easily be integrated into the image of one's own body, thereby dissolving the border between one's body and external objects. Furthermore, Goldenberg discusses evidence that image of the unity of the body may be distorted, as when patients with hemineglect neglect one half of their body. In his discussion of phantom limbs he points to intriguing evidence regarding the occurrence of phantoms in children with congenital absence of limbs. Because these children have never experienced an intact body, their phantoms might be interpreted as manifestations of an innately predetermined body image that unfolds even without any support from experience. This is not necessarily so, however, because it could be argued that the brain has enough plasticity to transform knowledge about the universal structure of bodies into a convincing proprioceptive sensation of having a complete body conforming to this universal structure. A limitation of this chapter is that it does not discuss body dysmorphic disorder.

The next two chapters both focus on a group of neurological disorders of the self: delusional misidentification and delusional reduplication syndromes. An example is Capgras syndrome, which refers to the belief that a person or persons have been replaced by "doubles" or imposters. Feinberg et al. (Chapter 8) discuss this and other related syndromes and argue for a specific role of right frontal pathology. Spangenberg (Chapter 9) discusses cases of delusional misidentification of the self in a mirror (e.g., an older woman who saw the image of herself as a little girl when she looked in the mirror). Spangenberg advances an explanation in terms of a mismatch between top-down processing (generating a hypothesis about what one is perceiving) and bottom-up processing (incoming information from the senses) triggered by a new onset deficit interfering with visuoperception. This results in the hypothesis of a stranger in the mirror the next time the person looks into a mirror. She further suggests that a person who feels disconnected or alienated in some way (e.g., due to the ego dystonic nature of new onset faulty perception after some form of brain damage) may be biased to evaluate the faulty hypothesis as reasonable. This account acknowledges the complex interplay of neurocognitive and emotional factors in delusional misidentification.

Other chapters in this fascinating volume deal with disorders of the self in dementia (Seeley and Miller, Chapter 10), the self and lack of empathy in autism (Baron-Cohen, Chapter 11), misattribution of agency in schizophrenia (Blakemore, Chapter 12), and the neural correlates of depersonalization (Kober et al., Chapter 13). The book concludes with chapters on the self in dreams (Revonsuo, Chapter 14), psychoactive agents and the self (Mathew, Chapter 15), and meditation and the self (Lou and Kjaer, Chapter 16). Although the chapters are generally well written, in some places concepts remain undefined (e.g., the "mental self", Chapter 16) and Chapter 15 makes continuous reference to ancient philosophical thought from India, which might be less appropriate for a chapter on psychopharmacology. The final chapter provides a moving first-person account of brain stem stroke survival by the distinguished sleep researcher J. Allan Hobson (Chapter 17). In spite of life-threatening insults to his brain stem, lungs and heart, the essence of his self as an observing, reasoning scientist remained intact. Hobson therefore emphasizes the resilience and durability of the self in the face of major insults.

In summary, *The Lost Self* brings together contributions from renowned researchers from neurology, psychology, and philosophy to explore the neurobiology of the self. It nicely complements the first book on this subject, published a couple of years ago (Kircher & David, 2003). Both books are a must-read for any student of the neural underpinnings of the self and self-related disorders. For the time being, however, the reader will encounter more questions than answers.

REFERENCE

Kircher, T. & David, A. (Eds.). (2003). *The Self in Neuroscience and Psychiatry*. Cambridge, UK: Cambridge University Press.

Neurodevelopmental Disability Primer

DOI: 10.1017/S1355617706220733

Treating Neurodevelopmental Disabilities: Clinical Research and Practice. Janet E. Farmer, Jacobus Donders, and Seth Warschausky (Eds.). 2006. New York: Guilford Press. 336 pp., $48.00 (HB).

Reviewed by Karmon D. Sears, Psy. D., *Center for Neuropsychology, Learning, and Behavioral Medicine, Nashua, New Hampshire.*

Born of a "growing frustration over the lack of evidence available to guide interventions for children with disabilities" (p. xiii), this volume was undertaken to address a major gap in the literature. Its editors attempt to end the frustration both for themselves and their colleagues. Moreover, they enlist the aid of well-known figures in neuropsychology to assist them in this effort and contribute some of their own important conceptualizations. The volume is

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divided into three parts: (I) Overview, (II) Psychological and Social Aspects of Childhood Disability, and (III) Innovative Treatment Strategies. The text is organized well and its clarity and easy to read format makes it ideal for professionals looking for concisely written chapters that highlight current research. Each chapter smoothly transitions to the next despite the broad coverage inherent to the topic of neurodevelopmental disabilities. Excellent use of graphs and charts illustrate central research points, pertinent ideas, and core treatment elements. Although one might expect a neurodevelopmental disabilities text to focus primarily on children and the significant impact on the family system, this volume does not neglect the impact of these disabilities in adults.

In Part II, Chapter 2, Traumatic Brain Injury, Donders addresses the criticism that neuropsychological assessment does not adequately assess "real life" social outcomes (i.e., the ecological validity of our assessments) and discusses measures developed to dispel this opinion while also addressing myths about neurodevelopmental recovery and age of onset of disability or injury. His recommendations intended to improve the quality of a neuropsychological evaluation are especially worthwhile. A similar pattern emerges throughout the volume (i.e., each author clearly explaining current practices), current theory related to the respective disability they are covering, current research, and the limitations of the aforementioned while making suggestions to improve or resolve those limitations. Subsequent chapters in Part II cover spinal cord injury (Anderson and Vogel), early medical risks (Aylward), physical impairments (Warschausky), chronic illness (Brown), hearing impairment (Hauser et al.), and visual impairment (Hunter et al.).

In Part III, Innovative Treatment Strategies, a number of cogent comments are made. Naar-King and Donders write in Chapter 9, Pediatric Family-Centered Rehabilitation, "rather than blaming or excluding family members, health care professionals need to explore all factors that reduce the efficacy and efficiency of the rehabilitation process, and address barriers that prevent family members from being active team members" (p. 165). In Chapter 11, Cognitive and Behavioral Rehabilitation, Butler, writes that "while directly applying adult methods and techniques to the pediatric population is an inherently risky process . . . many can be used with children and adolescents" (p. 189). In Chapter 12, Students with Acquired Brain Injury, Hibbard et al. recommend frequent "re-assessment that includes both standardized and informal qualitative assessment" (p. 214) instead of the typical practice of one evaluation at re-entry into the academic system or soon after injury. They include a table with detailed, researched based instructional strategies for students with acquired brain injury. Farmer and Drewel in Chapter 15, Systems Interventions for Comprehensive Care, suggest that psychologists "must consider expanding the scope of their intervention paradigms to include strategies that modify contextual barriers to care" (p. 281). There are also important chapters devoted to interventions that support families (Wade), social integration (Thomas and Warschausky), interventions for children with autism (Clark et al.), and cultural perspectives (Echemendia and Westerveld). Readers will especially appreciate the tables in Part III that provide useful reminders of key factors related to various recommended treatments.

Readers will find the overview afforded by this volume very informative, especially those who more rarely encounter individuals with these disabilities in their own practice. Professionals with limited knowledge of the particular condition are likely to gain greater insight about the patient's perspective as the authors discuss the etiology of each disability, its effects on the individual, and its effects on the family. For example, an adolescent with spinal cord injury may wrestle with independence *versus* dependence issues when confronted with toileting and/or self-care needs, and these may secondarily impact the individual's self-concept and adjustment, performance on assessment measures, and treatment compliance. Such specific insights were particularly valuable and should enable the clinician to devise more appropriate and beneficial treatment recommendations for individuals and additionally aid and benefit their caregivers with greater sensitivity to the wide-ranging problems that will be encountered. Although more seasoned professionals may find the text somewhat cursory, each chapter's references will help one delve deeper into relevant subject matter. The text also provides important insights into health care integration patterns with regard to treatment planning and recommendations.

As Baron points out in Chapter 17, Epilogue, neurodevelopmental disabilities encompass a broad range of conditions. Consequently, as this volume makes clear, it can be difficult to tease apart the symptoms of specific neurodevelopmental disorders from those of other associated conditions and subsequently derive appropriate and specific treatment plans while also monitoring the efficacy of those plans. Additionally, the manifestations of these disabilities are as varied as the individuals who have them, a further complication. A recurring theme in *Treating Neurodevelopmental Disabilities* is that our methods must be broader than merely standardized assessments and our treatment plans must also necessarily be more inclusive of other systems (e.g., family, school, and medical). The axiom "none of us is an island unto ourselves" is never more applicable than with children and adolescents who must depend on caregivers and face the challenge of their disability along with the challenges associated with normal social, emotional, and cognitive development.

In summary, the preface of this volume promises readers a comprehensive, practical, evidence-based text on neurodevelopmental disabilities. It delivers what it promises. This volume challenges readers to think outside the box regarding evaluation and treatment. Specifically, the authors challenge readers to expand their concept of the neuropsychologist's role in integrated care from the time of injury to recovery and onward. The book provides essential information on many of the most common neurodevelopmental disorders and illnesses, current research in

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these specific areas, and comprehensive treatment and assessment strategies. Most of all, it challenges practitioners to consider their patients in a broader context of school, medical, and social (family and peer group) systems with regard to evaluation and treatment—an integrated or multisystem approach to care. The concise chapters facilitate easy use of this text both for the very experienced professional and for early career professionals or paraprofessionals. The merit of this book exceeds the monetary value placed upon it. You will find yourself referring to it often in the course of your practice. It will not collect dust on your bookshelf.

A Thoughtful Perspective on Atypical Parkinsonian Disorders

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Atypical Parkinsonian Disorders: Clinical and Research Aspects. Irene Litvan (Ed.). 2005. Totowa, NJ: Humana Press, 512 pp., $175.00 (HB).

Reviewed by Mary Sano, Ph.D., *Mount Sinai School of Medicine, NY and Bronx VA Medical Center, Bronx, NY.*

This edited collection of perspectives on Atypical Parkinson's Disease, or Parkinson's plus as it is often called, is both a treasure and a pleasure. The editor, Irene Litvan, ably accomplishes the daunting task of bringing order to what might be considered a grab bag of diagnostic leftovers in Chapter 1. To the generalist, fair warning that Parkinson's plus may be misconstrued as Parkinson's minus, since tremor, the most commonly recognized symptom may not be a feature of at least some of these syndromes. Litvan provides us with an organizational structure for summarizing clinical features and surmising etiologies. An extensive literature review is distilled to give impressions of when to suspect these diagnoses, hints to the natural progression, and discussion of the validity of specific diagnoses within the atypical PD spectrum. Chapter 2, on historical perspectives, is one that is so tempting to skip in the rush to get to the most up to date science. Please don't, because it is one of the gems of this tome. In his readable style, Christopher Goetz reminds us that clinical skill begins with being a good observer and this will serve the field throughout time. His selection of historical anecdotes, literary passages, and classic photographs illustrates the timelessness of some of these clinical entities. The photograph from the 1925 Lhermitte et al. report so captured the syndrome of cortical basal degeneration, that I suddenly recalled several similar patients and was reassured that there was something more than idiosyncratic imposition of this diagnosis.

A feature of this edition is the succinct structure of the chapters. Each is quite focused making it easy to find a specific topic and capture its depth. For example, Chapter 3 on epidemiology focuses only on Progressive Supranuclear Palsy and Multiple System Atrophy, because these diagnoses reflect the most well developed knowledge base. Chapters 4, 5, and 6 on neuropathology, tauopathies, and synucleinopathies provide focused reviews of relatively current literature. Several of these, of course, may not stand the test of time because they can only be as current as the moment. Several chapters deal at length with assessment of clinical aspects of the disease, including chapters on general clinical assessment, specific ocular motor assessment, neuropsychological, and neuropsychiatric assessment. Six chapters were syndrome specific and reflected re-organization and synthesis of material in other chapters.

Several chapters presented specific research methodologies, including computer modeling of brain structure activation for motor tasks. As the author acknowledges, these models are oversimplifications of highly integrated behavior. The strength of these models is in their ability to integrate what we know about the motor, mood, and cognitive interactions occurring in multiple brain structures. The limitation is their inability to model the progressive degenerative nature of these diseases.

The companion DVD can be a useful technology by expanding the description of the book. The DVD holds PDF files of each of the chapters and several have informative video clips described within the text. These videos have superb visual quality and are excellent illustrations of various movement disorders and apractic phenomena. However, sound quality was only fair. This may not present a problem because the written text in which the link to video is embedded is quite clear.

If there is a missing theme it may be absence of reflection on how these conditions may compare and connect to typical PD or not addressing in more detail how molecular genetics of these entities may direct future therapies. These themes are touched on in several chapters but may be worth addressing in specific chapters in any future edition. Despite these minor omissions, the volume is well worth owning. It is well written, well organized, and an invaluable resource of highly integrated and very thoughtful reflections on a complex topic.

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