

term 'event' is necessarily related to the context' [sic—missing open quotation mark] which reflects the 'environment' " (p. 232). At times it seems as if there is a concern with what the definition of "the" is. But I quibble. This is thoughtful work, and Northoff, like philosophers generally, is concerned with the definition of terms. There is also an impressive amount of reference to specific brain structures, for a philosophical text.

This may be an important book for philosophy. My own preference in neurophilosophy is the work of V.S. Ramachandran, M.D., Ph.D. His book, which I reviewed in the *Journal* (2), avoids a great deal of lucubration dwelling upon philosophical imponderables by simply designing brilliant experiments to provide answers. Northoff cites Ramachandran's work, but, in view of his theme of "embedment," I was surprised at his omission of Warren McCullough, the psychiatrist who in 1943 authored the seminal work in neural networks, reprinted in the book *Embodiments of Mind* (3).

#### References

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***Emotions and Life: Perspectives for Psychology, Biology, and Evolution***, by Robert Plutchik. Washington, D.C., American Psychological Association, 2002, 592 pp., \$59.95.

Emotions are a complex subject to explore in a single book. All animals experience emotions; although the emotions may be beyond self-awareness, they can influence the animals' behavior or that of animals around them. *Emotions and Life* is a textbook designed for students in psychology or graduate students studying the field of emotion. The author, Robert Plutchik, is a noted psychologist who has conducted extensive research and developed theories of emotions. He has published widely on the topic, and, in this volume, explores the evolution and biology of emotion.

"Life" in the title refers to this book's survey of emotions in all living creatures. The examination of emotions encompasses the evolution of emotions and its expression in different species, laying a framework for its empirical study in humans. The title may be a bit misleading, as it is much more a textbook than a clinical manual.

Reflected on the cover is Plutchik's psychoevolutionary theory of emotions. His experimental work (1) identified several emotions, such as fear, anger, and joy, as primary and postulated that all others were derived from these basic emotions. The emotional circle resembles the color wheel, with most emotions derived from combinations of the few primary emotions, which could be combined to form emotions of different intensities. He postulated that "primary emotions are identifiable, in some form, at all phylogenetic levels and that they have adaptive significance in the individual's struggle for survival" (1).

The first chapter is an overview of the "landscape of emotions." A framework is laid for the study of the ubiquitous, yet imprecise, use of the words that describe emotions. Emotions may organize cognitive processes or disorganize them, be active or passive, lead to adaptation, or be maladaptive. We may be conscious of our emotions or may be motivated by unconscious emotions. Some theorists divide emotions into positive and negative, while others disagree with this classification, believing that all emotions play an adaptive role.

Other chapters review historical influences, how emotions affect cognition, measurement techniques, emotional development, and emotions and the brain. The last two chapters review the emotional disorders and focus on love and sadness in everyday life.

One of the interesting controversies highlighted in this volume is the issue of which occur first, facial expressions of emotions or the emotional experience. Peripheral theories assume that feedback from facial expressions influences emotional states. In contrast, central theories postulate that facial expressions reflect inner feeling states. Finally, functional theories assume that facial expressions are communications that attempt to influence a social encounter regardless of inner feelings (p. 147).

Overall this book is an extensive compilation of evolutionary, anthropological, animal, and human studies related to the area of emotion. It is a comprehensive psychology textbook, with an emphasis on studies of emotions and a marginal reference to clinical work and implications. It would be an excellent reference for a graduate class in emotions but would be of more academic interest to a clinical graduate student or psychiatrist.

#### Reference

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## ASPECTS OF DEVELOPMENT

***Developmental Psychobiology***, edited by B.J. Casey, Ph.D. Washington, D.C., American Psychiatric Publishing, 2004, 176 pp., \$34.95 (paper).

It is increasingly recognized that events and experiences in childhood and infancy, and even in utero, can have medical consequences in later life. This is particularly true in psychiatry. Once the realm of Freud and his followers, the concept that early life experience can influence, if not cause, psychiatric problems in adulthood has recently been embraced by the antithesis of psychoanalysis, biological psychiatry. The embrace, still tentative, is strengthening as supporting evidence steadily accumulates. Animal studies have done much in this respect. Housing rats in solitary cages after weaning instead of in small groups results in the development of behavioral and physiological changes that bear substantial similarities to schizophrenia. The stress associated with frequent brief separations of neonatal rats from their mother can result in long-lasting "depressive" symptoms.

It is in the human experiments of social deprivation, often as a consequence of aggression between nations or between individuals, where we see more clearly the influence of developmental factors on mental health. Mednick and associates (1) have shown that there is an increase in psychotic disorders in those born a few months after war-induced starvation and after certain influenza epidemics. Chronic behavioral disturbances and metabolic deficits in several brain regions are consequences of the profound neglect experienced by children left in Romanian orphanages. Related are the findings of Nemeroff and colleagues (2), who showed how childhood sexual or physical abuse can result in adult depressive symptoms that are poorly responsive to current antidepressant pharmacotherapy. A neurobiological understanding of these effects of early neglect or abuse is emerging: excessive stress hormone responses can influence brain development by interfering with normal neuronal function.

This little book, part of volume 23 of the annual Review of Psychiatry, does not delve into all these issues, although it does go a long way toward providing an introduction to some interesting aspects of this developmental neurobiology. The first chapter, addressing the psychobiology of infant-mother attachment, is clearly relevant to the interaction between infant trauma and depression. The second covers a specific related process, that of facial recognition. This essay assesses face processing in normal and abnormal development (e.g., autism) and is followed by a useful review on the neurobiology of reading disability. The final two chapters take two disorders, Gilles de la Tourette's syndrome and schizophrenia, and attempt to put them in a developmental perspective. This works well with Tourette's syndrome, where the disorder is comprehensively reviewed and we are shown the substantial contribution made by modern imaging techniques. The final report on the neurobiology of schizophrenia is less comprehensive, concentrating on details of the authors' own, admittedly important, postmortem studies but missing much of the breadth of previous chapters.

Throughout the book we are rightly reminded of the importance of genetic factors and their interaction with environmental influences on developmental processes. Had previous psychiatric genetic studies been more open to the potential influence of environmentally determined developmental factors, our understanding of the multifactorial etiology of major psychiatric diseases may well have progressed farther and faster.

#### References

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**Genius Denied: How to Stop Wasting Our Brightest Young Minds**, by Jan and Bob Davidson, with Laura Vanderkam. New York, Simon & Schuster, 2004, 256 pp., \$24.00; \$13.00 (paper).

The title gets your attention, but the strength of this book goes considerably beyond the title. It is a highly readable, informative, and thoughtful presentation on one of education's important but often "invisible" topics—the education of gifted students.

The purpose of the book is to highlight the plight of gifted students, a group that is often forgotten in the politics of school priorities. Attention to gifted students has always been patchwork and usually minimal in the United States, although there have been times when the nation was concerned about its brightest academic students. For example, the years just following Sputnik demonstrated America's concern with excellence in schools, particularly in math and science.

As the Davidsons accurately point out, the current No Child Left Behind legislation focuses federal attention and educational resources on students with remedial needs. No Child Left Behind legislation makes no overtures to those students well above the academic mean, and the goal of this book is to correct that.

The authors define "genius" as extraordinary intellectual ability. They do an informative job of providing definitions of giftedness and means for identifying gifted students. They make the particularly salient point that there is a national response to IQ measures: there is very little dispute over using IQs to identify students for special needs and remedial classrooms but extensive debate and accusations over the use of IQs to identify gifted students.

The book is a strong compilation of stories of remarkable young people and their parents as well as stories of frustrations with schools. These stories give a "soul" to everything in the book, but the book is more strengthened by its attention to studies and research information.

The sections are short but packed with substance. For example, the section titled Zooming Ahead is five pages long but makes an excellent case for acceleration. The section Achieving Excellence and Equity is eight pages in length, yet it makes a most thoughtful presentation on the complex and nuanced subject of "tension" between excellence and equity. All the sections are characterized by brevity and substance.

Two acquaintances of mine who are not in the field of gifted education read the book and had almost identical comments: "I could not put it down."

*Genius Denied* is a book that absolutely should be read. It is readable not just in terms of style but in terms of substance. This book makes a documented and vibrant argument for the importance of meeting the academic and social needs of gifted students. It has the markings of a book that years from now will be looked to as a "marker."

What Jan and Bob Davidson have done is bring the issue of the education of gifted students to the table of America's discussion on education. They have written that rare book which is appealing to educators and scholars in the field as well as to the general public. When (not if) schools cease to waste our