Pediatric Neurology:
Behavior and Cognition of the Child with Brain Dysfunction

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Preface

In recent years, we have become increasingly aware that the segregation of the various deviances of higher brain function into neurologic, psychiatric and cognitive is artificial. This segregation arose historically from the separation of the various disciplines, their distinctive diagnostic techniques and therapeutic approaches. However, accumulating data dictate the current comprehensive developmental view that various behavioral and cognitive manifestations of brain dysfunction are interactive. In some syndromes, the same genetic, pathophysiological or neurochemical substrate results in comorbidity of cognitive, behavioral and neurological disorders, while in others, the cardinal neurological deficit acts as a handicapping factor causing secondary cognitive and social deprivation. The thrust of this anthology is to present authoritative reviews emphasizing the concept that disorders of cognition, language and behavior coexist in the developing child and must be assessed and treated at various levels within a multidisciplinary context, Our aim is to provide a meeting ground and facilitate communication among specialists with diverse interests: physicians, psychologists, educators and rehabilitation professionals.

The first five chapters present scientific and clinical evidence pointing to a biological basis for the heterogeneous disorders of maturation affecting temperament and behavior. Children with these organic disorders manifest a series of symptom-complexes of concern to both neurologists and psychiatrists. In chapter 1, Nass and Koch summarize research that demonstrates
the existence of innate hemispheric specialization for emotion. Their own research highlights clear temperament differences in children with very early right and left brain lesions. In chapter 2, Kinsbourne describes a symptom-complex affecting temperament, cognition and behavior for which he coins the term ‘overfocusing’. He points out that the consequence of this biologically determined behavior for the child is a self-perpetuating struggle with his environment. Some of the children on the autistic spectrum whom Allen describes in chapter 3 bear a remarkable resemblance to Kinsbourne’s overfocused child, while the behavior of others is much more deviant. These differences suggest heterogeneity of the underlying substrate of autism to account for its clinical diversity. More definitive classification of this and other developmental disorders of higher cerebral function awaits the discovery of biologic markers. In chapter 4, Bregman reviews the evidence for the coexistence of psychiatric disorders in children with mental retardation and other brain dysfunction syndromes, stressing the need for dual diagnosis. Biederman et al. in chapter 5 carry the subject one step further by discussing the prevalence of comorbidity of psychiatric disorders in attention deficit-hyperactivity syndrome (ADHD). Their family-genetic data provide support for the delineation of subtypes of ADHD based on accompanying psychiatric disorder. In chapter 6, Solomon points out the comorbidity of tic disorders with attention deficit and obsessive-compulsive disorders. She stresses the highly variable severity and natural history of tic disorders and discusses indications for pharmacologic intervention. 7 and 8 consider developmental communication disorders. In chapter 7, Rapin and Allen present an approach to differential diagnosis of impaired language acquisition which can serve as a reference for all those working in the field. In chapter 8, Amir et al. stress the devastating effects of impaired communication on cognitive and social/emotional development. This calls for innovative rehabilitation and educational intervention as early as possible. They review the subject of augmentative and alternative communication techniques. Evidence from their own clinical experience indicates that such techniques facilitate the development of oral language while providing an interim avenue of communication. Progress in the cognitive neurosciences has greatly contributed to the development of new neuropsychological diagnostic techniques which complement the clinical neurologic evaluation. Wainwright et al. review these techniques in chapter 9, setting the stage for discussion of specific cognitive impairments by Nass (Dyslexia in chapter 10) and Shalev (Dyscalculia in chapter 11).
The eleven chapters in this volume present current concepts regarding the physiological, clinical, and epidemiological aspects of deviant development of language, cognition, affect and behavior. They provide an update on innovative therapeutic approaches. As such, it should be of interest to all the many professionals from different fields involved in the diagnosis and care of the abnormally developing child.

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