Preface

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Dr. A. Jean Ayres, founder of sensory integration as used in occupational therapy, applied the theory of sensory integration to a variety of diagnostic groups throughout her career (1972a, 1979). The classic promotional film on sensory integration, *Help Me Be Me* (Brown, 1974), contains a memorable scene in which an adult woman with developmental disabilities is unable to crack an egg. The narration identifies this woman as having dyspraxia and poor integration of vestibular/proprioceptive sensations necessary for postural control and insecurity with movement against gravity. Also featured in this film are children with Autistic Disorder, learning disabilities, and attention-deficit disorders. Ayres recognized that many individuals with developmental, physical, socioemotional, and/or cognitive disabilities demonstrate inabilities to process, integrate, and utilize sensory information adequately. This film graphically displays the applicability of sensory integration theory and practice to diverse populations of individuals with disabilities.

Sensory integration became best known and used with children experiencing learning and behavior problems during the time Ayres was developing the *Southern California Sensory Integration Tests* (SCSIT; 1972b) and their revision, the *Sensory Integration and Praxis Tests* (SIPT; 1989), largely because research funding was available to study learning disabilities in the 1970s. Ayres designed the SCSIT and subsequently the SIPT not only to detect and determine the nature of an individual's hidden deficits in sensory integration but also to validate her theory of sensory integration (1980, 1989). In the SCSIT manual dated 1980, Ayres pointed out that individuals with learning disabilities constituted the main population on which she had based the development of sensory integration theory. However, she recognized that her theory and intervention principles extended beyond children with learning disabilities (1989). Many children with developmental disabilities exhibit dysfunction in sensory integration, and these deficits in sensory integration often interfere with these children's abilities to function even more than their primary diagnoses. Accordingly, this book not only documents the current state of practice using sensory integration theory but also challenges practitioners and researchers to move beyond its traditional use and applications.

The interrelationship between the process of sensory integration and daily life is apparent to those who have lived with the consequences of disability and sensory integrative deficits. One of the editors of this book grew up with two brothers with Fragile X syndrome. The debilitating effects of sensory integrative dysfunction have been obvious in her brothers. Both of Susanne's brothers, Keith and Paul, were labeled educable mentally retarded. Not until 1989 were their disabilities diagnosed as Fragile X syndrome, a genetically-based disorder characterized by mental retardation, generalized low tone, anxiety, poor eye contact, difficulty coping with social situations, and sensitivity to sensory stimuli (Hagerman, 1996).

As children, Keith and Paul received special education. Unfortunately, they did not qualify for any therapy services because their tested cognitive level was equivalent to

their functioning level. Following high school, Keith and Paul lived independently and worked full time, capable of routine activities of daily living. Although their ability to follow rote routines allowed independence, they had very little social contact and were unable to alter their routine without assistance. Complications in daily life, such as a malfunctioning water softener or missing the bus, were overwhelming for them. At one point when Paul and Keith were harassed by a group of young teenage boys, they became so distressed that they refused to open the window shades of their house ever again.

When Paul died unexpectedly, Keith became depressed and disoriented and was unable to continue working. He could not manage time or carry out his activities of daily living. The grieving process amplified Keith's deficits in self-regulation, praxis, sensory modulation, and social language. He required hospitalization for depression. The professionals providing treatments for Keith's depression failed to realize the extent of his preexisting self-regulatory difficulties. The changes in routine, hospitalization, and novelty of contexts following Paul's death added to his feelings of anxiety and loss of control. Consequently, Keith lost not only his best and only friend, his job, and his home, but all of his independence.

Keith, not unlike most individuals without disabilities, had chosen a daily occupation (bus boy) that gave him a sense of mastery, nourished his sensory needs, and provided stability to his life. However, when he most needed this daily occupation to meet the stresses encountered in his present state, it was no longer available to him. From a sensory point of view, he no longer reaped the calming and organizing benefits of carrying heavy trays for 8 hours a day, 6 days a week. Rather than living and working as part of his neighborhood community, Keith's participation in typical contexts decreased, and he required maximum supports from the social service community. It was only after crisis that he became eligible to receive a wide variety of services that had not previously been available to him.

The questions are ever-present and plentiful in hindsight: What would have been the outcome if Keith had received sensory integrative intervention? Could he have developed a broader base of social support? Could he have maintained his self-regulatory abilities in the midst of a life-altering event? With minimal modifications, could he have recovered more quickly to regain the independent lifestyle that he had created? Although more research is necessary to further validate and replicate the effects of a sensory integrative approach, anecdotal and case-study evidence is abundant (Blanche, Botticelli, & Hallway, 1995; Daems, 1994; Parham, 1998; Parham & Mailloux, 1996; Schaaf, 1990; Schaaf, Merrill, & Kinsella, 1987). Individuals like Paul and Keith, who have functional deficits physically, socially, and emotionally, not only because of their diagnosis but also because of the resulting sensory integrative dysfunction, cannot wait for the labors of research and the politics of funding to catch up with the theoretical and practical advances.

This book continues the discussion and development of the therapeutic use of sensory integration theory and the application of sensory integration principles to diverse populations. To support the clinical reasoning process, researchers, theoreticians, and practitioners explore and expand sensory integration theory. The authors of the theoretical section of this text (chapters 1 through 10) include data and literature from diverse fields such as occupational science, psychobiology, psychology, neuroscience, and child development to support and extend the theoretical principles of sensory integration and their application to diverse populations. The clinical section (chapters 11 through 20) presents a combination of qualitative and quantitative data-gathering, clinical-reasoning strategies and intervention principles that guide examination of the impact of sensory integration function and dysfunction in individuals with developmental disabilities. These clinical chapters present the application of sensory

integration theory and intervention principles to children with known developmental delays (visual impairment, cerebral palsy, Autistic Disorder, and Fragile X syndrome) and children who have not necessarily been identified with developmental delays (children with sensory modulation disorders, high-risk infants, and children exposed to environmental deprivation).

The information provided by the scholars, researchers, and clinicians contributing to this book is a significant step forward in the understanding of the difficulties, possibilities, and strategies for individuals with disabilities. It is our hope that this project will be a foundation that furthers advancements in the understanding and application of sensory integration.

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