

# The Handbook of Language and Speech Disorders

Edited by

*Jack S. Damico,  
Nicole Müller, and  
Martin J. Ball*

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The Handbook of  
Language and  
Speech Disorders

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# Introduction

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JACK S. DAMICO, NICOLE MÜLLER,  
AND MARTIN J. BALL

Providing general overviews and updated information on the state of any discipline through the publication of a handbook is a well-accepted practice. In the field of speech-language pathology in the United States, such volumes can be traced to at least the 1940s with the publication of a handbook dealing with speech aspects of the hard of hearing (Bluett, 1947). More familiar, however, is the *Handbook of Speech Pathology* (Travis, 1957) that so many professionals made their primary reference text during the late 1950s through the 1980s. Edited by Lee Edward Travis, a founding father of speech pathology in the United States (Tweedie & Clement, 1976), this text was first published in 1957 having 33 chapters and 27 authors. Within 15 years a new version, the *Handbook of Speech Pathology and Audiology* (Travis, 1971), had been expanded to 50 chapters and 44 authors. At the time of publication, this handbook provided state-of-the-art discussions on the areas believed to be most crucial to the understanding of the discipline of communication sciences and disorders. Since the 1970s, the original volume by Travis has not been updated, and although other texts have been written, there is still a need to provide sufficient and timely content in a comprehensive work. This *Handbook of Language and Speech Disorders* is an attempt to provide such coverage.

Providing a handbook with sufficient and relevant content raises the issue of scope. As the discipline has expanded, particularly with regard to the impact of language and language disorders in the social, educational, and communicative realms (Ball et al., 2008; Duchan, 2008), the need for research, theory, and clinical applications has increased accordingly. Further, researchers and practitioners have realized that in addition to the information on various disorders and conditions, our assumptions and practices themselves must be viewed more circumspectly so that the science of communication disorders and its clinical applications may be advanced in the best possible way. A text that does not carefully consider the most necessary and relevant topics in attempting to accomplish this purpose might be overwhelmed. In his preface to the newer version of the *Handbook*, Travis understood the difficulty in putting together such a reference text and he

reaffirmed an earlier statement that no one individual could “react authoritatively to the subject matter of communication disorders” (1971, p. v). Indeed, such a task requires a careful collaboration.

In order to create this handbook, we invited authors from around the world to write articles within their areas of expertise. There are 26 chapters that are divided into four general sections: I: Foundations; II: Language Disorders; III: Speech Disorders; and IV: Cognitive and Intellectual Disorders.

Part I, “Foundations,” is oriented toward several issues that are germane to all of the disorders that are covered in the rest of this volume. As the discipline has matured, there have been realizations that the impact of communicative disorders and the roles that professionals may play in their remediation are subject to a host of variables that cross disciplinary boundaries. These variables and the manner in which they are handled create an overall foundation from which appropriate responses to the various disorders detailed in the other three sections are formulated. Issues dealing with cultural responses to the various impairments, the ways that cultural and societal expectations may affect service delivery, even the manner in which the process of identifying communication disorders has been addressed over the past several decades provide this foundational information. Similarly, appreciating the impact of input and output systems on communication functioning overall, and the role of genetics in the discipline, is also pertinent. If work within the human communication sciences and disorders is to be effective, these variables must be considered when addressing the various disorder types and the specific impairments.

In the first chapter, Damico, Müller, and Ball consider the complexity of identifying and labeling individuals as being communicatively disordered. While it is commonplace to employ labels and diagnostic categories as if they were discrete and fixed, this process is actually a social construction that has implications for both the professionals who apply the label or category and the recipients of that label or category. The complexity involved and how it should be addressed is treated in this chapter. Chapter 2 (Goldstein and Horton-Ikard) presents a foundational and operational definition of diversity and then outlines the influence of cultural and linguistic diversity on communicative disorders. The chapter briefly focuses on the role of culture as manifested in communication, on the variation within linguistic systems, how the concept of disability is culturally determined and, importantly, how these diversity issues influence assessment and intervention.

Chapters 3 and 4 deal with some of the basic facets of input and output in communication and how the sensory systems and intelligible output are so crucial to communication even before the various disorders are considered. Kretschmer and Kretschmer (Chapter 3) discuss the primary sensory systems of audition and vision and how they impact language and speech development. They provide information on the impact on language and communicative development of deafness and hearing impairment, and the influence that such sensory impairments may have on interactional abilities. They also review what is known about the impact of blindness on language development and communicative functioning.

In addition, the chapter discusses information crucial to intervention when these sensory systems are impaired. In Chapter 4, Hodge and Whitehill remind us that motoric output is always a primary consideration when determining communicative success, and that intelligibility of speech, as the basic output system, is the actual functional indicator of oral communicative competence. Successful intervention makes it necessary to orient to this basic component of communication. This in turn requires an awareness of the complexity of intelligibility as a process and how various physical, cognitive, and contextual attributes contribute to intelligibility in oral communication. The authors focus on defining the concept and then showing how our conceptualizations affect how intelligibility is rated, measured, and (if necessary) increased.

In Chapter 5, Stojanovik defines genetic syndromes as they are pertinent to communicative disorders and then provides a description of the potential impact that they may have on communication. She discusses several important general patterns noted in meta-analyses of genetic syndromes in communicative disorders and then describes three of the most relevant syndromes and their impact. Importantly, the author also develops a rationale for why professionals in our discipline should focus on genetic syndromes and how such a focus can benefit both the researcher and the clinician.

While many of the chapters in this handbook provide information on assessment and intervention according to the specific disorder discussed, it is also important to have an overall perspective from which to make clinical decisions. Practicing clinicians must be able to look at the disorder-specific clinical suggestions, but they should also be guided by a set of foundational principles. In Chapter 6, Brinton and Fujiki provide this important information. Taking a narrative approach to set up the issue, they discuss five principles they believe are essential for strong and effective service delivery. Ranging from goal setting and planning to the focus on functionality and recognizing the long-term impact of clinical efforts, these principles should assist in making each disorder-specific recommendations more effective.

The eight chapters in Part II, "Language Disorders," deal with various types of recognized language impairments in both children and adults. While Part I was oriented to overall issues, this section is the first of three focusing on pertinent issues within the specific disorder types.

Autism and other categories listed on the autism spectrum have been receiving increased attention over the past several years, and Chapter 7 (Muma and Cloud) addresses some of the more salient issues. Whereas most of the chapters focus on a clinical description and discuss some facets of service delivery, this chapter attempts to address some of the controversies regarding autism such as its perceived increase in incidence, why there are various confusions in the identification and determination of how to best approach autism spectrum disorders from a clinical perspective, and the impact of a behaviorist versus a cognitive approach to this disorder.

Addressing the subset of children identified as having slower-than-normal speech and language growth within the preschool age group, Weiss and Paul

(Chapter 8) provide descriptions and service delivery suggestions for these children with delayed language development and make an important distinction between children with transient problems and those with delayed language development as a chronic condition. In Chapter 9, Gillam and Kamhi address the topic of specific language impairment (SLI) in children, and some of the important clinical themes that adhere to this disorder. Establishing from the beginning that a clinical classification into this subtype of language disorder is often difficult to achieve, they discuss the criteria and how these have been – and may be – applied as well as how SLI may be approached clinically. Highlighting some of the controversies regarding inconsistencies between short- and long-term outcomes, efficacy overall, and the causal explanations that have been given for SLI, they suggest that clinicians have a role in working with these students, albeit not as hopeful as with other areas of impairment (e.g., reading disabilities).

Perkins's ideas on compensatory adaptation (Perkins, 2007) significantly inform the chapter on pragmatic impairment (Chapter 10). Rather than focusing on language issues alone, Perkins makes the point that neurological, cognitive, linguistic, and even sensorimotor deficits may play a role in the behaviors that give rise to this diagnostic category. Recognizing the complexity of what is often termed a pragmatic language disorder enables the clinician to create a different perspective on this disorder. Perkins shows how pragmatic impairment is best addressed as an emergent phenomenon that operates at both the intrapersonal and interpersonal level of communication. Using excerpts from transcripts, he illustrates both the impact of an existing impairment and the role of compensatory adaptation to create the behaviors identified as pragmatic impairment, and demonstrates how there can be both intrapersonal and interpersonal adaptations that may overcome these problems. The review of research linked with the theoretical orientation provided enables a fresh and beneficial conceptualization of pragmatic impairment that has definite clinical applications.

Language as it impacts learning overall, and especially academic tasks, provides the material for the next two chapters. While a significant overlap between language and learning is not universally recognized across the educational field, speech and language clinicians are often expected to address academic problems due to language deficits. Consequently, these chapters were deemed important to the scope of this handbook. In Chapter 11, Reid and Jacobson provide a more traditional perspective on learning disabilities (LD). They provide a definition of the term and a description of the types of problems that are manifested by this disorder. Further, they discuss some of the overlap between language and learning and show how this (and other) relationships make the more traditional definition of LD problematic. By focusing on the types of learning disabilities and some of the factors underlying this disorder category, they construct a frame of understanding for the clinician. This chapter is intervention oriented in that there is a discussion of both response to intervention and the contemporary models of treatment for LD.

Damico and Nelson (Chapter 12) take a less traditional perspective and focus on literacy as a manifestation of language and meaning making. Employing both

theoretical arguments and empirical data from the field of emergent literacy, they discuss the central role of language in literacy. They also detail the various conceptions of reading and how these orientations have defined literacy. This provides a basis for a discussion that attempts to explain the “great reading debate” and then suggests a clinically relevant resolution. Adopting a holistic and meaning-oriented perspective, the authors emphasize the complexity of literacy as a process and provide a number of suggestions for the identification, assessment, and treatment of literacy impairments.

Chapter 13 addresses an issue that has seen increased incidence on speech and language clinicians’ caseloads: childhood language disorders due to prenatal exposure to alcohol and illicit drugs. Coggins and Thorne provide an overview of this facet of behavioral teratology, including organic responses to these drugs, some performance profiles that result from exposure, and a review of some of the influential environmental factors that exacerbate the consequences of prenatal exposure. The authors focus primarily on Prenatal Alcohol Exposure (PAE) and Prenatal Cocaine Exposure (PCE), and the impact of these drugs on language development and language functioning. By exploring the influences of prenatal alcohol and cocaine exposure on language functioning, they survey the scope of the problem and provide a blueprint for what the clinical response should be when working with these children. Three multifaceted interventions with these clinically complex children are also described.

In the last chapter in Part II (Chapter 14) Code discusses aphasia in adults and its impact on language functioning and communication. After providing a background on the incidence and prevalence of aphasia, the history of medical and clinical aphasiology, and a discussion of some of the primary features of aphasia as opposed to other neurogenic impairments, the author presents current information on recovery from aphasia, and on some of the primary therapeutic strategies that have been successfully employed. To further contextualize this impairment within the social sphere, the psychosocial and emotional impact of aphasia is also discussed.

These eight chapters provide speech and language clinicians and researchers with the necessary background and updated information on the major impairment categories that primarily involve language.

The eight chapters in Part III, “Speech Disorders,” focus upon those impairments that are more readily characterized as involving the speech mechanism. The first three chapters in this section (Chapters 15, 16, and 17) focus on articulatory and phonological issues. In Chapter 15, Howard covers the topic of developmental speech sound disorders by providing information on the nature of these impairments and by addressing the heterogeneity of the population of children with speech sound disorders. She also describes the various perspectives that influence classificatory terms and descriptors, and the wide range of theoretical and clinical approaches to developmental speech sound disorders. Her adoption of a more linguistic approach enables effective discussion of the distinctions between phonetic and phonological processes and how these impact assessment and intervention. Ackermann, Hertrich, and Ziegler (Chapter 16) have written a

detailed chapter on dysarthria, covering the neural bases of motor speech control in normal speakers, and then using this orientation to discuss and classify the various types of dysarthrias. This treatment is significantly enhanced by the application of research based on auditory-perceptual and instrumental analyses of these motor speech disorders, especially the work with kinematic and electromyographic techniques. Explanation of the various dysarthric deficits is followed by a discussion of the various therapeutic techniques and strategies that are currently being employed within this disorder category. The authors cover behavioral treatment, instrumental aids and prostheses, medication, and surgery. Jacks and Robin (Chapter 17) concentrate their efforts on apraxia of speech by first establishing the distinction between this quintessential disorder of speech motor planning/programming (McNeil, Robin, & Schmidt, 2008) and other neurogenic impairments. Once they establish apraxia of speech as a clinical entity in both adults and children through definitions, descriptions, and etiological distinctions, they provide information on assessment and treatment. Clinicians who have difficulty with the correct identification of apraxia of speech will find the section on differential diagnosis especially useful.

Chapter 18 (Drager, Finke, and Serpentine) is a bit different from other chapters in this section in that it focuses on augmentative and alternative systems that are necessary when a broad range of speech disorders may be involved. Reestablishing communicative functioning in the presence of neurological deficits severe enough to limit effective motor speech functioning is of the highest priority, and the authors provide information regarding AAC systems and their various components (symbol representation, layout and organization, selection techniques, and output systems). They also discuss aspects of assessment and intervention in this complex area of clinical service delivery.

Tetnowski and Scaler Scott (Chapter 19) approach fluency disorders from a clinical perspective, but do not ignore the various controversies that have arisen with this disorder. They state the two primary theoretical orientations (behavioral and constructivist) and the merits and detractions of each. Using these two perspectives, they review information relating to the definition, onset, development, treatment, and theories surrounding fluency and fluency disorders. Especially beneficial in this chapter is the discussion on various approaches to treatment that have arisen from the two theoretical orientations. Chapter 20 (Morris and Harmon) reviews the area of voice disorders, covering prevalence and recent developments in this area. The portions of this chapter involving diagnostics provide instrumental, behavioral, and psychological strategies to best determine the etiology, the extent, and the severity of the voice problem, and then show how these data can be used to plan treatment. A number of direct and indirect treatment strategies are described. Russell (Chapter 21) provides data on the types of orofacial anomalies that occur most frequently, and how they influence speech production and speech development. These descriptions are followed by a clinical section on assessment and intervention strategies and techniques. Bressmann (Chapter 22) discusses the communicative impact of head and neck cancer. Providing essential information on laryngectomy, glossectomy, and velopharyngeal

and maxillofacial defects, he first gives an overview of cancer treatments and their impact on speech mechanisms. For each of the defects mentioned previously, he then discusses the effect on communication, how to describe this impact within the individual, and the various rehabilitation options that are available.

The final section of this volume, Part IV, "Cognitive and Intellectual Disorders," deals with other disorders that are relevant to the field of communication sciences and disorders, but are not easily characterized as either language or speech disorders. Indeed, in some of these disorders (e.g., ADHD) cognitive factors may impact both speech and language.

Westby and Watson (Chapter 23) discuss attention-deficit/hyperactivity disorder (ADHD) from a clinical perspective, to offer a justifiable orientation to this disorder. Employing an explanatory mechanism involving poor regulation and inhibition (Barkley, 2006), these authors present clinical data on the nature of the disorder, its impact on language learning, and an extensive discussion on the implications for ADHD in assessment and intervention. In Chapter 24, Lehman Blake provides similar coverage for right hemisphere impairments (RHI). After defining and creating a distinction for this neurogenic impairment, she discusses three primary areas of impact on communication. The first of these involves three themes that affect comprehension in RHI: impairments in activation of less-frequent or less-familiar meanings, difficulties with multiple meanings, and difficulties integrating contextual cues to determine the most appropriate interpretation. The second area is inability to effectively use the context in the complex give-and-take of conversation. The third area of impact concerns discourse production and how its deficits are clinically manifested. Although these three areas of impairment are not always present simultaneously, nor are they the only impairments observed in RHI, they provide a basis for effective assessment and treatment for this population.

Chapter 25 (Mozeiko, Lé, and Coelho) is devoted to the impact of traumatic brain injury (TBI) on communication skills. A major focus of the chapter is the complex and dynamic nature of discourse, and how TBI disrupts discourse in its many facets. The authors suggest that cognitive-communicative impairments such as those seen in TBI may be ascribed to disruptions in cognitive systems, such as attention, memory, and self-regulatory processes. Alternatively, they may be viewed as manifestations of underlying pragmatic impairments. The potential causes are not only of theoretical importance but have clinical implications as well.

Finally, Müller (Chapter 26) reviews the various dementias and dementing conditions that are often noted in medical and clinical contexts, and presents the defining criteria of dementia and the impact of dementia on memory and on communication. A section on dementia categories and dementing diseases provides a background to many of the complexities in determining service delivery in this population. Also contained in this chapter is a detailed discussion of Alzheimer's disease (AD), which Müller refers to as the "poster child" for dementia. Providing the history and the impact of AD on memory, cognition, and communication, the chapter then discusses the processes of assessment and intervention for persons with AD.

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# Part I Foundations

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# 1 Social and Practical Considerations in Labeling

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## 1 Introduction

When children and adults in our society are perceived as having inordinate difficulty with their speech or language, a natural reaction is to ask whether those individuals have communication disorders (Barsky & Boros, 1995; Brown, 1995; Flower, 1984). More often than not, when this occurs in an educational setting for children or a medical setting for adults, a referral is made to a professional to determine whether there is indeed impairment, and how it should be addressed. If the difficulty is perceived as impacting communication or learning abilities, typically a cognitive, linguistic, or communicative impairment is identified and receives a label. Typically, the label is the product of some evaluative process that results in the assignment of a categorical diagnostic term.

This process of diagnosis is an accepted and even necessary practice when dealing with exceptionalities like communicative disorders. In order to provide services, to access fiscal resources, to obtain accommodations, or even to come to an understanding of how to address disabilities in a remedial process, an official diagnosis, an “objective” label assigned to an individual and his or her difficulty is often necessary. While it is commonplace to obtain these diagnostic labels and to employ them as if they were discrete, concrete, and fixed, this process is actually much more fluid and subjective than many professionals and lay people realize (Aspel, Willis, & Faust, 1998; Augustine & Damico, 1995; Carroll, 1997; Conrad & Potter, 2000; Fraser & Christopher, 2007; Wilson, 2000). The use of diagnostic terms like language disorder, childhood apraxia, dementia, learning disability, specific language impairment, autism, ADHD, auditory processing disorder, and many others, as labels for individuals and their impairments is not always objective or valid and, as a result, there are many possible consequences, some positive and some negative.

The object of this chapter is to demonstrate the impact of labeling via diagnostic categories, and how these labels result in various consequences. If the label or diagnostic category appears valid and is correctly attached to an individual,

positive consequences may accrue. Typically, the assignment of a valid diagnostic label enables entry into remedial programs such as special education in the schools, and assignment to therapeutic rehabilitation in medical and other clinical settings. However, there may also be problems. For example, some diagnostic categories themselves are suspect and merely function as mechanisms of current societal values, power, or control (Abberley, 1987; Conrad, 1992; O'Connor & Fernandez, 2006). If the label or category is invalid or if the individual is misdiagnosed, the resulting consequences are frequently negative. This chapter will discuss some of the mechanisms whereby lay, professional, and media claims help establish the practice of assigning diagnostic labels for various perceived impairments; particular aspects of the social context that contributed to the rise of these diagnostic categories and labels and some of the consequences will also be detailed.

## **2 The Impact of Labeling**

Since the early 1960s, but especially since the widespread funding of special education in the United States, there has been a tendency to refer students to special education for language-based learning problems and for communication disorders of various kinds (DOE, 2002; Kretschmer, 1991; Richardson & Parker, 1993). Similarly, adults with various communication problems are also referred in order to initiate rehabilitation (Thompkins, Marshall, & Phillips, 1980). With each of these groups, the referral is followed by an assessment process that is intended to provide a diagnostic label. There have been numerous discussions on the process of evaluation in communication disorders. In general, the process is as follows: (1) a referral is made to the speech and language professional (SLP) by a teacher, nurse, physician, administrator, another professional, or family member; (2) the SLP reviews the referral and determines the types of information that should be collected; (3) an appointment is made for the SLP to evaluate the referred individual in a setting chosen by the professional; (4) a set of tests and other diagnostic procedures are chosen for the assessment session; (5) the assessment is completed at the appointed time(s); (6) the data from the assessment session is combined with any other data obtained by the SLP to provide diagnostic interpretation involving differential and descriptive diagnosis; and (7) a diagnostic label or category is assigned. As previously mentioned, once the diagnosis is assigned, then other decisions addressing educational and/or therapeutic issues are considered and implemented.

### **2.1 *Positive consequences***

Receiving a diagnosis in the form of a disability label may start a cascade of constructive consequences, if the diagnosis is an accurate one. The first constructive consequence is that the diagnosis may “transform an unorganized and unclear set of complaints and symptoms into a more organized and comprehensible disorder” (Balint, 1957). Once framed with a label, the disorder becomes easier