Communication Sciences and Disorders Across the Lifespan

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Typeset in 11/15 Times New Roman by Flanagan's Publishing Services, Inc. Printed in the United States of America by Bradford & Bigelow

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Library of Congress Cataloging-in-Publication Data

Names: Prelock, Patricia A., author. | Brien, Ashley R., author.
Title: Communication sciences and disorders across the lifespan / Patricia A. Prelock, Ashley Brien.
Description: San Diego, CA : Plural Publishing, Inc., [2026] | Includes bibliographical references and index.
Identifiers: LCCN 2024035635 (print) | LCCN 2024035636 (ebook) | ISBN 9781635504538 (paperback) | ISBN 1635504538 (paperback) | ISBN 9781635504361 (ebook)
Subjects: MESH: Communication Disorders | Neurologic Manifestations
Classification: LCC RC425 (print) | LCC RC425 (ebook) | NLM WL 340.2 | DDC 616.85/5—dc23/eng/20240903
LC record available at https://lccn.loc.gov/2024035635

LC ebook record available at https://lccn.loc.gov/2024035636



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Preface

We have written this book to provide students in introductory communication sciences and disorders courses an opportunity to understand the power of communication and the role that speech-language pathologists and audiologists have in recognizing and supporting communication challenges in children and adults. We have tried to provide information that is current and follows best practice, and we have included several resources for students to expand their learning as well as case studies to facilitate the application of learning. There are many learning tools included throughout the chapters, such as suggested readings, video links, study guide questions, and more. There is also a comprehensive glossary of terms.

Together, we have more than 50 years of experience as speech-language pathologists. We have practiced in multiple settings from the schools to clinics and hospitals to institutions of higher education. We have taught several introductory and advanced courses in communication sciences and disorders and appreciate the opportunity to share our excitement about the professions of speech-language pathology and audiology. Our research expertise spans language and cognitive development of children with specific language disorders to children and adults with autism. We are both American Speech-Language-Hearing Association–certified speech-language pathologists, and Dr. Prelock is a board-certified specialist in child language.

We hope that you find the content of this book and the accompanying learning tools helpful to your understanding of the discipline. This will be the first of many opportunities for you to learn about communication and communication disorders in children and adults.

—Patricia A. Prelock, PhD, CCC-SLP, BCS-CL, F-ASHA, FNAP-SLP —Ashley Brien, PhD, CCC-SLP



About the Authors



Patricia A. Prelock, PhD, CCC-SLP, BCS-CL, F-ASHA,

FNAP-SLP, is the Interim President, University of Vermont. Formerly, she was Provost and Senior Vice President for 5 years, and the Dean of the College of Nursing and Health Sciences at the University of Vermont for 10 years. She is also a Professor of Communication Sciences and Disorders, and Professor of Pediatrics in the College of Medicine at the University of Vermont. Dr. Prelock received her PhD in speech-language pathology from the University of Pittsburgh. She is a recognized expert in the nature and treatment of autism spectrum disorders (ASD) and has been awarded nearly \$25 million dollars in university, state, and federal funding as a PI or Co-PI to develop innovations in interdisciplinary training supporting children and youth with neurodevelopmental disabilities and their families, to

facilitate training in speech-language pathology, and to support her intervention work in ASD. She has over 220 publications including 20 books and 598 peer-reviewed and invited presentations/keynotes in the areas of autism and other neurodevelopmental disabilities, collaboration, IPE, leadership, and language learning disabilities. In 2019, she was named Associate Editor for the *Journal of Autism and Developmental Disorders*. Dr. Prelock received the University of Vermont's Kroepsch-Maurice Excellence in Teaching Award in 2000, was named an ASHA Fellow in 2000, and a University of Vermont Scholar in 2003. Dr. Prelock was named a Distinguished Alumna of the University of Pittsburgh. In 2016, she received the ASHA Honors of the Association and in 2017 she was named a Distinguished Alumna of Cardinal Mooney High School. Dr. Prelock also received the 2018 Jackie M. Gribbons Leadership Award from Vermont Women in Higher Education. Dr. Prelock is a Board-Certified Specialist in Child Language and was named a Fellow in the National Academies of Practice (NAP) in speech-language pathology in 2018. She was the 2013 President for the American Speech-Language-Hearing Association and was President of the ASHFoundation in 2020 and 2021.



Ashley Brien, PhD, CCC-SLP, is an ASHA certified speechlanguage pathologist. She received her MS in Communication Sciences and Disorders and her PhD in Interprofessional Health Sciences from the University of Vermont. She has instructed many courses at the undergraduate and graduate levels in the areas of autism, social cognition, augmentative and alternative communication, disability, and research methods. Additionally, she provides intervention in speech, language, AAC, and social communication to children and adolescents and their families. Dr. Brien's research focuses on the development, implementation, and social validity of family-centered interventions to support social learning and episodic memory in individuals with autism. She has also designed intervention materials to support social cognition and communication in a variety of populations with social

learning challenges. She has written about her work in several peer-reviewed articles and presented her findings nationally and internationally. She is also co-author of the book *Supporting Social Learning in Autism: An Autobiographical Memory Program to Promote Communication and Connection.*

Using This Textbook

This textbook offers the following pedagogical features to enhance your learning and comprehension.

Chapters begin with:

Learning Objectives and a list of **Key Terms** to provide a guide on how to navigate the depth and breadth of the chapter content.

eerning Objectives fier reading this chapter, you will be able to Describe the language associated with Explain the social-cultural difference Define some of the assessment and i learning disorders. I dentify the disparities in access to a impairments.	o: h challenges in reading, reading comprehension, and writing, es in identification of learning disorders in academic areas; ntervention approaches that are used to support those with assessment and intervention for language-based literacy
Key Terms dyscalculia dysgraphia dyslexia executive functions gestalt gestalt imagery graphic organizers learning disability letter identification metacognitive skills morphology occipital-semporal	parietal-temporal phonemic awareness phonological awareness pragmatic difficulties print awareness reading comprehension semantic clustering serial clustering thinking maps vocabulary development

As you delve into the chapters, you will find:

Bolded key terms and a comprehensive **Glossary** that help improve retention of the material and help you easily find definitions.





Detailed color Figures, Tables, and Photos aid in understanding complex concepts.

Pause and Ponder Boxes offer thought-provoking discussion topics to encourage critical thinking and class participation.



QR Codes help readers get to websites and videos easily from the text.



Real-world **Case Studies** are integrated to illustrate the application of theoretical concepts in clinical settings.



Chapters end with:

Chapter Summaries: Each chapter concludes with a summary recapping the key points covered. This helps reinforce learning and provides a quick review for studying.

Chapter Review Questions reinforce key concepts and provide an opportunity for self-assessment.



Learning Activities focus on bridging the gap between research and practice.



Additional Resources and a comprehensive list of **References** showcase the evidence base and encourage you to delve deeper into the literature.

4	Additional Resources
	University of Arizona. English constrant and wwell charts https://www.arizona.edu/-one.Hts.arik.ecc./went.pdf IL-ariting for Jusice_Texryone Hts.ar Accent? https://www.learning/orbatice.org/margarine/lall-2000/everyone-has-at-secent https://www.learning/orbatice.org/margarine/lall-2000/everyone-has-at-secent https://www.learning/orbatice.org/margarine/lall-2000/everyone-has-at-secent https://www.learning/orbatice.org/margarine/lall-2000/everyone-has-at-secent thttps://www.learning/languad-Dedders' Speech: Institle/bally of Context State Charle-Stutt University'. Multilanguad-Dedders' Speech: Speech Participation and Activity Arges/laww.ex.ode.au/research-multilinguad-speech/space Reading Rockst. "The Development of Phonological State" https://www.endingecl-skalis } }
	References American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (Shed, Lextrev.). American Speech-Language-Hearing Association. (n.d.). Speech sound disorders: Articulation and phonology: https://www.ashu.org/prectice-portal/clinical-topic/articulation-and-phonology American-breve Ame

This textbook also comes with ancillary resources accessible on a **PluralPlus companion website**, including **practice quizzes** and **study guides**. See instructions on how to access the student materials on the inside front cover of the book.



Chapter 1

An Introduction to Communication Disorders and the Professions of Speech-Language Pathology and Audiology



Learning Objectives

After reading this chapter, you will be able to:

- Explain communication disorders and what speech-language pathologists and audiologists do to support those with communication disorders.
- Describe the career pathways for speech-language pathologists and audiologists.
- Describe the career pathways for speech-language pathology and audiology assistants.
- Identify some of the innovations that have occurred in the professions to ensure communication is achievable for all.

Key Terms

Alzheimer disease amyotrophic lateral sclerosis aphasia apraxia of speech articulation cochlear implant communication difference communication disorder disability dysarthria of speech dysphagia esophageal dysphagia expressive language hair cells morphology neurodiverse oral dysphagia pharyngeal or oropharyngeal dysphagia phonological disorder phonology pragmatics receptive language semantics stroke syntax vocal cord paralysis vocal nodules

Introduction

Have you ever thought about not being able to share your thoughts, ideas, feelings, or needs with your parents, your peers, or other people with whom you interact. Our ability to communicate is something most of us never have to think about, but for those with a communication disorder, the experience of communicating may be very different. Some individuals may not be able to find the right word to share their idea, others may struggle to formulate sounds and words we can understand, and still others may not be able to hear what is being said to them. Any one of these challenges is disruptive to our ability to share meaning with one another, whether we are decoding what someone has said or encoding a response to share our thoughts.

Communication is the ability to exchange information between individuals or groups of individuals that is critical to our social existence. Language is what we use to communicate the thoughts, ideas, and beliefs we have and allows us to share these with others. It includes the ability to use gestures, spoken speech, signs, and other symbol systems to communicate with our parents, siblings, friends, and

co-workers. Imagine if you could not share an idea you had, struggled to have your message understood by others, or could not tell someone how you felt. It would be an isolating and frustrating experience.

This chapter introduces what communication disorders are and the terms typically used to describe communication disorders, and it provides a brief description of the communication disorders you are most likely to hear about. The chapter also discusses the career pathways that are available for those interested in the discipline and some of the innovations in research that have implications for practice in the field. In addition, an outline of content for each of the chapters that follows is presented. Importantly, communication disorders exist across the lifespan, so this book highlights communication disorders in both children and adults.

What We Know About This Topic

The presence of a **communication disorder** takes many forms. A person can be born with a congenital condition (e.g., deafness, cerebral palsy, Down syndrome) that affects their ability to communicate, or they can acquire a communication problem after birth (e.g., traumatic brain injury, **stroke**) (Gillam & Marquardt, 2016; Prelock & Hutchins, 2018). A communication disorder may also be organic, indicating there may be a functional, physical, or unknown cause.

Approximately 1 in 12 children (7.7%) aged 3 to 17 years have a speech, language, voice, or swallowing disorder in the United States, and many have multiple communication disorders (Black et al., 2015). Overall, 46 million people have some difficulty speaking or hearing that impacts their daily functioning (National Institute on Deafness and Other Communication Disorders, 2015a, 2015b).

What Is a Communication Disorder?

Communication is intentional or unintentional verbal or nonverbal behavior that influences the ideas, thoughts, or behaviors of another person (American Psychiatric Association, 2022). A communication disorder suggests an individual has a deficit in speech, language, and/or communication. Communication disorders are also seen in conditions such as Down syndrome, autism, traumatic brain injury, stroke, cleft palate, learning disorders, and other acquired, organic, or genetic disorders that impact speech, language, and/or hearing.

Speech refers to sound production and includes **articulation** or the way we form sounds to produce words. You will learn more about speech sound disorders in Chapters 5 and 6. Language includes the form (**syntax** or grammar, **morphology**, and **phonology**), function (**semantics** or word meaning), and use (**pragmatics** or use of language in social contexts) of symbol systems, including spoken and written words, sign language, and pictures that are rule governed (American Psychiatric Association, 2022). You will learn more about a variety of language disorders in Chapters 7, 8, and 9.

There are several terms used to describe a person with a communication disorder. The words you will hear most often are impairment, disorder, disability, difference, and **neurodiverse**. **Impairment** typically refers to a loss of function or some difference in structure that impedes behavior, in this case communication (World Health Organization, 2011). For example, someone with a hearing loss may have difficulty hearing but will still be able to function, such as going to school, having a job, developing friendships, and so on. **Disorder** suggests the inability to function in a way we would expect in daily activities. In the case of someone who is hard of hearing, they may not have sufficient hearing to talk on the phone even when they wear hearing aids. The term **disability** suggests the need to understand how much support would

be needed for a person to engage in daily life activities (Prelock & Hutchins, 2018). Again, in the case of someone who is deaf or hard of hearing, they may require a notetaker in the classroom or interpreter services during health care visits.

You will most often hear the term communication disorder used by speech-language pathologists (SLPs) and audiologists, and it is sometimes used synonymously with impairment and disability. We think of it as a limitation in communication structure or function (Gillam & Marquardt, 2016).

A **communication difference** suggests that a child communicates in a way that is different than you might expect in English. For example, second language learners may exhibit typical development in their native language (e.g., Italian), yet their English might not be as fluid, an accent might interfere with intelligibility, and word selection might not always be accurate. Learning English as a second language, however, is not considered a communication disorder.

Many of these terms suggest a medical model approach to understanding communication, identifying a deficit or impairment in function. A more recent neurodiversity movement has suggested that we should acknowledge that we are made up of diverse neurotypes with unique strengths and challenges (Dwyer, 2022). This has been an area of particular focus in the autistic population. We talk more about this in Chapter 2.

Cultural Considerations

There appears to be a greater incidence of communication disorders in children identified as males versus females, although it remains unclear if symptom recognition may look different across genders, creating greater ease and access to diagnosis, or if, in fact, there is a true gender difference. This is an important question for researchers and clinicians to continue to examine. Interestingly, however, there are also higher incidences of communication disorders for Black versus White children and slightly less for Hispanic children, although these percentages are also higher than the percentage for females alone. Most important, however, is the access to services for those with communication disorders. For example, although the percentage of communication disorders is greater among Black than White children, the percentage of services they receive is less. This is also true for Hispanic children, and it suggests the existence of health disparities in the delivery of services for diverse populations, which is an issue that needs to be addressed.

What Are the Career Pathways for Audiologists and Speech-Language Pathologists?

The professional organization for audiologists and SLPs is the American Speech-Language-Hearing Association (ASHA). ASHA has a public website on which you can access specific information about a career in communication sciences and disorders.

🕢 www



Careers in Communication Sciences and Disorders

You might ask, why should I choose a career in this field? There are several reasons to consider, and answering the following questions might help you think about the opportunities:

- Do I have the skill set to be successful in this career?
 - If you like science, enjoy working with others and solving problems, and are curious about how people think, communicate, and learn, then this career is worth your consideration.
- Does this career offer a competitive salary?
 - Yes, and salaries continue to increase for both SLPs and audiologists as per the U.S. Bureau of Labor Statistics

Bureau of Labor Statistics

- Would I have job security?
 - The need for SLPs and audiologists is strong and continues to grow. Those who can speak more than one language are in demand.
- How will I serve my community and make a difference in this career?
 - In this career, you will have an opportunity to improve the quality of life of those with whom you work who have communication disorders. We want individuals to pursue this career who are passionate about ensuring communication for all.
- Is there flexibility in the kind of job I would do?
 - Yes, as a certified SLP, audiologist, or speech and hearing scientist, you could work across several different environments—schools, hospitals, clinics, private practice, industry, colleges/universities, and so on. You can choose the environment that will give you the greatest flexibility in terms of hours to fit your lifestyle.

Audiologists

The median salary for audiologists in 2021 was \$78,950, with a professional doctorate and state license required. The job outlook is strong, with an expected growth of 10% between 2021 and 2031. There are approximately 800 openings for audiologists each year (U.S. Bureau of Labor Statistics, 2023).

See the "Audiology Service Delivery Areas" section of the **ASHA Scope of Practice in Audiology** and ASHA's **Hearing and Speech Careers** website for more information on a career in audiology.



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