Jessica Broitman
Miranda Melcher
Amy Margolis
John M. Davis

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Clinical Guide to Assessment and Treatment

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Jessica Broitman
International Control Mastery Therapy Center (CMT)
Berkeley, CA, USA

Miranda Melcher
Department of Defense Studies
King's College London
London, UK

Amy Margolis
Brooklyn Learning Center
Columbia University Irving Medical Center
Brooklyn, NY, USA

John M. Davis
California State University, East Bay
Hayward, CA, USA

ISBN 978-3-030-56107-9 ISBN 978-3-030-56108-6 (eBook)
https://doi.org/10.1007/978-3-030-56108-6

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

We dedicate this book to Brett and Moira, without whom this book would not have been written. We so appreciate that they trusted us to share their journey. Also, that they were willing to teach us what we needed to know, to help them become the amazing, successful adults they currently are. It is our hope that we are accurately taking the ideas we developed together in order to share them with the rest of our patients and colleagues to increase the knowledge and understanding of NVLD.

Foreword

Early in my career, I found Nonverbal Learning Disability (NVLD) to be a puzzle that frequently generated arguments but rarely yielded solutions. This book, from Drs. Broitman, Melcher, Margolis, and Davis, four experts who have given their careers to the evaluation and treatment of NVLD, does not spend its time quibbling about the puzzling pieces of NVLD but is instead explicitly focused on helping children to succeed—in school and in life. Its practical approach will make it a book that lives in the hands of clinicians and educators, rather than on a library shelf.

One of the more vexing challenges to those of us who evaluate and treat children is understanding what Nonverbal Learning Disability actually is. Without being included in our Diagnostic and Statistical Manual (DSM5), its diagnosis and definition can vary from clinician to clinician. Its name can also generate confusion, seemingly representing a double negative. Children with NVLD and their families often have to go on a diagnostic odyssey before they receive a diagnosis that is sometimes contradicted by the next clinician. Here, a rigorously refined definition is provided, together with a new name that describes the core symptoms of NVLD for what they are: Developmental Visual-Spatial Disorder (DVSD).

After providing a clear definition of what NVLD/DVSD is, the authors lay out how to evaluate and intervene with affected children. Importantly, I have never seen a child who has only ever received a diagnosis of NVLD. Before—or after—receiving this diagnosis, they often have been diagnosed with an anxiety disorder, Attention Deficit Hyperactivity Disorder (ADHD), a mood disorder, Autism Spectrum Disorder (ASD), Social (Pragmatic) Communication Disorder, or a nonspecific learning disorder. Sometimes, these diagnoses are also correct—NVLD/DVSD seems to frequently co-occur with other conditions. Other times, an accurate diagnosis might have prevented or ameliorated school-related anxiety, social difficulties, or a depressive episode.

Here, the authors provide explicit guidance on how to differentiate NVLD/DVSD, even in the presence of other conditions. They even provide guidance for interpreting neuropsychology results from another provider to clarify a diagnosis. Importantly, they do not stop at defining NVLD/DVSD for clinicians but also describe explicitly how to explain and work with children and families who are

trying to conceptualize their own experiences. I have found in my own clinical work that framing a child's difficulties in a brain-based conceptualization can be transformative, both for themselves and for their parents. Too often, children—and their parents—think that they lack intelligence, or effort, or moral fiber, instead of recognizing that they struggle with a specific domain of learning.

Educational intervention and treatment in NVLD/DVSD is an art form. These four authors are artists who have each approached it from different directions, whether as a psychotherapist, a teacher and tutor, a neuropsychologist, or a director of an educational program and clinic, and often multiple of the above. They synthesize these perspectives to provide straightforward guidance on approaches that have worked with children. This practical approach extends to how to work around challenges, how to engage and persist with homework, and specific interventions that target 11 categories of difficulty commonly seen in NVLD/DVSD.

I very much appreciate the practical—and humble—approach taken by the authors. Unfortunately, NVLD/DVSD is a few decades behind other conditions, like Autism Spectrum Disorder, which used to generate a similar diagnostic odyssey but are now the focus of evidence-based treatment approaches that are sometimes implemented as early as 18 months. Like in ASD, advocacy on the part of individuals and parents is pushing the field of NVLD/DVSD forward, as evidenced by the efforts of Dr. Lemle of The NVLD Project, who provides the Afterword for this text. I fully expect that this will just be the first edition of this text, with refinements to come as Drs. Broitman, Melcher, Margolis, Davis, and Lemle continue to push this field forward to better understand the early signs, refine the patterns of risk for co-occurring disorders, and develop evidence-based treatments for this important condition.

Jeremy Veenstra-VanderWeele
Ruane Professor of Child and Adolescent Psychiatry at Columbia University
New York, USA

Director of the Division of Child & Adolescent Psychiatry at
New York-Presbyterian/Morgan Stanley Children's Hospital, New York State
Psychiatric Institute (NYSPI)
Columbia University, New York, USA

Co-Director of both the NIMH T32 Postdoctoral Fellowship for Translational
Research in Child Psychiatric Disorders and the Whitaker Scholar Program in
Developmental Neuropsychiatry NYSPI/Columbia University Medical Center
New York, USA
Jeremy.Veenstra-VanderWeele@nyspi.columbia.edu

Acknowledgments

We would like to thank all of our patients and colleagues who, over the years, have shared their experiences and ideas with us and, in particular, Mariah DeSerisy, who provided crucial clinical insight. We also thank Gibor Basri, once again, for his assistance in editing.

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About the Authors

Jessica Broitman is a psychoanalyst practicing in Berkeley since 1980. She began her career in Boulder, Colorado, in 1973. As a member of the Intensive Treatment Team of the Boulder Mental Health Center, she ran the Gordon Beyer project, which was one of the first residential treatment programs for young people with schizophrenia and bi-polar illness in the country. After moving to California in 1980, she became the Program Coordinator for the Creative Living Center, a day treatment program for adults with mental illness. During this time, she became involved with Joseph Weiss and Control Mastery Theory. She formalized the San Francisco Psychotherapy Research Group (http://sfprg.org) as a non-profit organization in 1993. She is President Emerita of SFPRG. She was instrumental in the initiation of SFPRG's Psychotherapy Training Center and Clinic, and served as the Executive Director for 15 years. In 2017 she helped create the International Control Mastery Therapy Center (CMT Center—https://cmtcenter.net) and currently serves as the President of the CMT Center. She frequently lectures on Weiss's Control Mastery Theory worldwide.

Dr. Broitman has been involved in researching and treating children with nonverbal learning disabilities and their families for more than 20 years. She is the co-author of *Nonverbal Learning Disabilities in Children: Bridging the Gap Between Science and Practice* (2011), and is the coeditor of *Treating NVLD in Children* (2013) as well as numerous chapters and articles. She is currently involved in several research projects concerning the treatment and understanding of NVLD and has a special interest in helping professionals and families understand and treat this disorder. She is available for consultations and can be reached at: drjess@comcast.net.

For more information on her work on NVLD see: Click on each book for more information.

For a half-hour video on NVLD featuring the authors, please see https://www.youtube.com/watch?v=vymdZUuB-T4&feature=youtu.be

Miranda Melcher is a teacher, security researcher, analyst, consultant, and author. She is currently pursuing her PhD on post-conflict military reconstruction at King's College London's Defence Studies Department with a planned graduation in May 2021. Her research identifies methods for integrating opposing forces into unified post-conflict security institutions. The aim of her PhD is to develop viable methods for rebuilding militaries and security institutions following civil wars. Miranda has also been a committed teacher and tutor for students ranging from 13 to 70 years of age, across a variety of subjects, focusing particularly on developing teaching practices around learning disabilities in both secondary and higher education. She is available for consultations and can be reached at: miranda.melcher@gmail.com

Amy E. Margolis is Assistant Professor of Medical Psychology at Columbia University Irving Medical Center and the Director of the Environment, Brain, and Behavior Lab. She has a doctorate in Applied Educational Psychology—School Psychology from Teacher's College and is trained as a clinical neuropsychologist with two decades of experience assessing and treating children with learning and attention disorders.

In 2013 she completed a T32 Fellowship in Translational Psychiatry at Columbia University and now conducts research as well as clinical practice. Dr. Margolis is an expert in human neuroimaging and focuses her learning disability research program on the brain basis of NonVerbal Learning Disability and the psychological factors that affect children with learning disorders such as anxiety and executive function problems.

Dr. Margolis is Principal or Co-investigator of several federally funded projects that use neuroimaging in longitudinal birth cohorts to study the effects of prenatal exposure to neurotoxicants on brain and behavior outcomes. Most recently she has served as the text reviser for the chapter on Specific Learning Disorder for DSM 5TR and is Co-chair of the ECHO (Environmental Influences on Children's Health Outcomes) National Neurodevelopment Working Group.

Recent publications from her lab include papers using functional MRI to study the neural correlates of NonVerbal Learning Disability as well as executive functions in reading disorder, anxiety in reading disorder, and the effects of prenatal exposure to commonly used flame retardants on the efficiency of the brain's reading network.

For more information on her work on NVLD see: https://www.ncbi.nlm.nih.gov/myncbi/amy.margolis.1/bibliography/public/; https://www.ebblab.com

And a webinar on NVLD at ADDitude Magazine:
https://www.additudemag.com/nonverbal-learning-disability-nvld-amy-margolis/

John M. Davis is currently a Full Professor and Chair of the Educational Psychology Department at California State University East Bay, and is teaching and supervising in their graduate programs. He is also in private practice in Lafayette, CA, where he specializes in the assessment of and consultation around learning disorders and disabilities in children, adolescents, and adults. He has also written and co-written over 40 articles and book chapters on a number of areas and co-authored 4 books, three of which are on learning disorders. He received his PhD

from U.C. Berkeley in School Psychology, received postdoctoral training at U.C. Davis in Clinical/Family Psychology, and interned at the U.C. Davis Medical Center in Sacramento and at Children's Hospital in Oakland. He has worked in public schools, in a hospital-based Psychiatry Department at Kaiser in San Rafael, taught at a number of universities, and was Director of the Raskob Learning Institute in Oakland, CA, an assessment and remediation clinic and a day school for children with learning disorders. He can be reached at: davisjackm@aol.com or jack.davis@csueastbay.edu.

Chapter 1
Introduction

Nonverbal learning disability (NVLD) has been written about and discussed for roughly 60 years since it was named and described by Johnson and Myklebust (Johnson & Myklebust, 1967). Our recent work shows that 3–4% of the population of children in the United States are likely to have NVLD (Margolis et al. 2020). Nevertheless, there have been few empirically validated treatment options (Matte & Bolaski, 1998; Little, 1993; Davis and Broitman, 2016). *Treating NVLD in Children* (Broitman & Davis, 2013) provided practitioners with an understanding of the treatment needs of children with nonverbal learning disabilities and most importantly advocated for a team approach to treatment. This current book is intended to be a useful resource that follows up on that volume, as well as *NVLD in Children: Bridging the Gap Between Science and Practice* (Davis & Broitman, 2011). Although some books and articles begin to address the importance of a team approach for treating NVLD (Davis & Broitman, 2006, 2007, 2008; Forrest, 2004; Myklebust, 1975; Palombo, 2006; Tanguay, 2002), and some present treatments developed for classroom teachers and school-based professionals such as *Nonverbal Learning Disabilities and Their Clinical Subtypes: A Handbook for Parents and Professionals* (Mamen, 2006) and *Nonverbal Learning Disabilities at School, and Home* (Tanguay, 2002), there has yet to be a guide to a psychologically based specific treatment for the estimated 2.2 million to 2.9 million children and adolescents who may have a NVLD (Margolis et al. 2020).

Rourke's (1995) book on the *Syndrome of Nonverbal Learning Disabilities* offered a 15-point approach to treatment (amended by Tsatsanis & Rourke, 2003), most of which we would agree with from our clinical experience. He emphasized the need to utilize the child's strengths to remediate the areas of weakness and to plan for success using a realistic perspective to prepare the child with NVLD for adult life. Rourke (1995) differentiates the role of a psychologist from that of educators who have a particular curriculum to follow and teach. He states that the domain of the psychologist is as vast as the lifespan and that the child with NVLD very well may need help accruing all of life's social and survival skills.

J. Broitman et al., *NVLD and Developmental Visual-Spatial Disorder in Children*, https://doi.org/10.1007/978-3-030-56108-6_1

Like Rourke, we also think that the role of the psychologist is important in the treatment of NVLD, and this book outlines specifically how that can be accomplished using a team approach, working closely with patients; their families, schools, and tutors; and the many professionals that a child with NVLD will meet along their path. Accurate diagnostics, carefully chosen appropriate and individualized psychotherapeutic techniques, and interventions are required. We believe that mental health professionals have a unique and crucial role in helping the child with NVLD plan for and achieve success. We believe that sharing a transparent, psychologically minded approach offers the best chance of creating a successful collaboration with your patient and their family. In particular, when working with children with NVLD, practitioners must consider how the child's psychology (thoughts, feelings, and beliefs) affects their functioning and learning and how their experience is processed through their individual personality, psychology, culture, economic circumstances, and family dynamics. Utilizing these psychological organizing principles, this book describes how psychologists and other mental health professionals can best help their patients with NVLD.

1.1 Historical Overview of NVLD

The first mention of a potential NVLD-like syndrome was the Gerstmann syndrome in 1940, although he attributed it to a left hemisphere disorder. Gerstmann syndrome was characterized by difficulties in the areas of finger agnosia, right–left orientation, agraphia, and acalculia. Johnson and Myklebust noted "social perception disabilities" which they thought explained limitations in understanding nonverbal cues which impacted individuals' abilities to understand and respond to social interactions. They refined and renamed this syndrome nonverbal learning disability in 1967 (Johnson & Myklebust, 1967). In the 1970s, Rourke (1995) and his colleagues introduced a developmental neurological approach to studying learning disabilities and proposed the "white matter model" for the etiology of NVLD. Since then, there has been increased interest in understanding, defining, and treating NVLD. Our most recent consensus definition is presented in Chap. 3. Our latest understanding of the etiology of NVLD is presented in Chap. 4.

NVLD has no obvious visible effects on appearance that would identify its presence. It is primarily an invisible disability, which frequently confounds patients' access to early and accurate diagnosis and treatment. Adding to this, children with NVLD are often described as "precocious in verbal reasoning and language development," leading to them being seen as linguistically advanced rather than suffering from an impairment. As our methods for recognizing and diagnosing these children improve, we anticipate clarification and refinements of the profile of NVLD. We do, however, continue to see a unique pattern of strengths and challenges. Assets of children with NVLD often include early speech and vocabulary development, a relative strength in auditory/verbal rote memory, and strong attention to detail, and

some would say an overfocusing on detail, often early reading skills, and often excellent spelling skills. Difficulties usually include problems in visual–spatial (core deficit) processing, organizational/executive function challenges, academic struggles (typically math), social functioning, and motor coordination issues. Associated difficulties include psychological issues and environmental sensitivities. Visual–spatial challenges reflect particular challenges with *visuospatial awareness* such as awareness of own body in space or personal space of others; *visuospatial construction* such as copying visually presented materials; *visuospatial working memory* such as holding spatial information in mind while simultaneously acting on that information; *visuospatial scanning/tracking* such as finding information on a page/poster or screen; *spatial estimation* such as judging distance, quantity, or time; *three-dimensional thinking* such as imagining how things will look when rotated; and *interpreting information presented pictorially* such as diagrams or maps.

Executive functioning challenges may include aspects of processing/regulation such as decision-making, planning, initiation, assigning priority, sequencing, emotional regulation, problem-solving, planning, impulse control, establishing goals, monitoring results of action, and self-correcting.

Social challenges can include difficulties with comprehending nonverbal communication, pragmatic language, adjusting to transitions, and coping with new or novel situations, along with some deficits in social judgment and social interaction.

Motor challenges may include gross or fine motor skills, poor coordination, balance problems, and difficulty learning gross motor skills such as riding a bike. In addition, difficulties with fine motor skills such as learning to tie one's shoes or graphomotor skills may also be present.

Academic difficulties, when they exist, are often in areas that require understanding or "reading" visual diagrams, such as in math, geography, and science. These subjects often require interpreting graphic material and integrating information into novel concepts or procedures. Difficulty with reading can also occur, not at the word-reading level but more often at the comprehension level. One hypothesis is that students with NVLD may have difficulty generating an internal visual image of what they are reading – seeing the story in their mind's eye. Developing written expression skills can also be hard for students with NVLD for many reasons, including difficulty organizing and sequencing ideas or motor difficulties that interfere with written expression (note: with respect to the range of gender identities, we will use the pronoun "they" when referring to students and patients throughout the manuscript).

Associated psychological difficulties or diagnoses may include attention deficit hyperactivity disorder (ADHD) and anxiety disorder. Other associated developmental disorders could be a specific learning disorder in math, developmental coordination disorder, autism spectrum disorder, and social communication disorder.

There have been many other observed and anecdotally reported associated features of NVLD including difficulty with pragmatic language, understanding whole–part relationships, contending with novelty, and environmental sensitivity to light brightness, screen color/brightness, temperature and humidity, sound, feel/touch of

textures, and taste, to name a few (see Chap. 13 for an additional discussion of these). Once a consensus is reached for a clinical definition, further research will allow empirical tests of all of these areas of associated difficulties.

1.2 Book Overview

In this section, we describe the outline of the book beginning with Chap. 2: *Markers of NVLD Within a Developmental Framework*, wherein we introduce two of our patients, Brett and Moira, who will accompany you throughout the book, as we offer you a glimpse into the developmental signs of NVLD from infancy through high school.

In Chap. 3: *What Is a Nonverbal Learning Disability (NVLD)/Developmental Visual–Spatial Disorder* we suggest a new definition for *nonverbal learning disorders (NVLD)*. We report on the current project to create a new name/definition for NVLD and our work to gain inclusion in the *Diagnostic and Statistical Manual (DSM)*. This work is being done by a consortium led by Prudence W. Fisher, PhD, Division of Child and Adolescent Psychiatry, Columbia University College of Physicians and Surgeons, and NVLD global experts: Drs. Amy Margolis Jessica Broitman, Joseph Casey, John (Jack) M. Davis, Jodene Goldenring Fine, Irene Mammarella, M. Douglas Ris, and Margaret Semrud-Clikeman, and members of The NVLD Project's Board of Directors and Advisory Board.

In Chap. 4, *The Etiology and Pathophysiology of NVLD*, we discuss our most recent understanding of these issues. We also consider common comorbidities with NVLD and their relevance for treatment considerations.

In Chap. 5, *The Initial Contact and the Intake Process*, we lay out the specific steps one must take to determine what treatment and/or assessment is needed.

In Chap. 6, *A Screening and Diagnostic Assessment for NVLD*, we lay out the assessment process, which is critical for the diagnosis of NVLD, and address how you present the results to the family and/or patient with NVLD.

In Chap. 7, *Reading and Interpreting a Neuropsychological Assessment Report*, we discuss how to interpret and read the results of an assessment report. We present the common composition of a test report. We offer a guide to the structure and types of scores utilized in the report and how to use the data and results to read and understand a test report. Lastly, we offer a "how to" for professionals to make provisional diagnosis of NVLD using prior documentation when new testing is not available.

In Chap. 8, *The Need for Treatment*, we present our current understanding regarding the need for early and specific intervention.

In Chap. 9, *Working with a Consistent Psychological Theory*, we discuss the importance of working from a shared theoretical orientation. This chapter addresses how all of the professionals on the team must be well versed in understanding the underlying psychological issues that are presented when someone has NVLD. A model theory, Weiss' control mastery theory (CMT), is presented.

In Chap. 10, *Creating a Treatment Plan and Team*, we offer a step-by-step guide to creating your team and treatment plan using the diagnostic information at hand.

In Chap. 11, *Working with Your Patient's Family*, we offer specific tips for helping families navigate the complexity of family dynamics.

In Chap. 12, *Learning from Our Patients*, we offer techniques to work with our patients to tailor their treatment to their specific needs.

In Chap. 13, *Choosing What to Work On First in Therapy/Tutoring*, we consider the timing of interventions. This chapter helps you navigate how to decide which issues to address, in what order, including how to break them down and create a plan for each specific problem your patient faces.

In Chap. 14, *The Brooklyn Learning Center Model*, we describe a model for psychological treatment for NVLD that incorporates academic tutoring and cognitive remediation, and we offer specific strategies for working with students with NVLD.

In Chap. 15, *Specific Interventions*, we offer guidelines and possible interventions to consider in the categories of visual–spatial, executive functioning, academics, social/emotional challenges, motor coordination, and sensory issues.

And lastly in Chap. 16, *Conclusions*, we offer our closing thoughts. The appendices include copies of our forms and checklists for you to use. Join us now to meet Brett and Moira, the stars of this book, in Chap. 2.

References

Broitman, J., & Davis, J. M. (2013). *Treating NVLD in children: Professional collaborations for positive outcomes*. New York: Springer.

Davis, J., & Broitman, J. (2006). A brief overview of nonverbal learning disorders. *The Educational Therapist, 27*(3), 5–10.

Davis, J., & Broitman, J. (2007). Nonverbal learning disabilities: Models of proposed subtypes, part II. *The Educational Therapist, 27*(4), 5–10.

Davis, J., & Broitman, J. (2008). *Nonverbal learning disabilities: Diagnosis and history*. Hawaii: Paper presented at the International Neuropsychological Society Annual Convention.

Davis, J., & Broitman, J. (2011). *Nonverbal learning disabilities in children: Bridging the gap between science and practice*. New York: Springer Publications.

Davis, J., & Broitman, J. (2016). *Team collaborations for the best-practice treatment of NVLD across three systems: School. Hospital and family based*. In B. Rissman (Ed.), *Medical and educational perspectives on NVLD in children and young adults*. Hershey, PA: IGI Global.

Forrest, B. (2004). The utility of math difficulties, internalized psychopathology, and visual spatial deficits to identify children with the nonverbal learning disability syndrome: Evidence for a visual-spatial disability. *Child Neuropsychology, 10*(2), 129–146. https://doi.org/10.1080/09297040490911131.

Johnson, D. J., & Myklebust, H. R. (1967). *Learning disabilities: Educational principles and practices*. New York: Grune & Stratton.

Little, S. S. (1993). Nonverbal learning disabilities and socioemotional functioning: A review of recent literature. *Journal of Learning Disabilities, 26*, 653–665.

Mamen, M. (2006). *Nonverbal learning disabilities and their clinical subtypes: A handbook for parents and professionals*. Nepean, ON: Centrepointe Professional Services.

Margolis, A. E., Broitman, J., Davis, J. M., Alexander, L., Hamilton, A., Liao, Z., et al. (2020). Estimated prevalence of nonverbal learning disability among north American children and adolescents. *JAMA Network Open, 3*(4), e202551. https://doi.org/10.1001/jamanetworkopen.2020.2551.

Matte, R. R., & Bolaski, J. A. (1998). Nonverbal learning disabilities: An overview. *Intervention in School and Clinic, 34*(1), 39–43.

Myklebust, H. R. (1975). Nonverbal learning disabilities: Assessment and intervention. In H. R. Myklebust (Ed.), *Progress in learning disabilities* (Vol. III, pp. 85–121). New York: Grune & Stratton.

Palombo, J. (2006). *Nonverbal learning disabilities: A clinical perspective*. New York: W.W. Norton.

Rourke, B. P. (1995). The NLD syndrome and the white matter model. In B. P. Rourke (Ed.), *Syndrome of nonverbal learning disabilities: Neurodevelopmental manifestations* (pp. 1–27). New York: Guilford Press.

Tanguay, P. B. (2002). *Nonverbal learning disabilities at school*. London: Jessica Kingsley, Publishers.

Tsatsanis and Rourke. (2003). *Syndrome of nonverbal learning disabilities: Effects on learning*. In A. H. Fine & R. A. Kotkin (Eds.), *Therapist's guide to learning and attention disorders*. Amsterdam: Elsevier.

Chapter 2
Markers of NVLD Within a Developmental Framework

We first must stress that no two children with NVLD look exactly the same or fit the same developmental pattern (Rourke, 1995). With possible challenges in four major areas (executive functions, social, academic, and motor coordination) in conjunction with a spatial deficit, people with NVLD can end up presenting with very different clinical pictures, as outlined in the previous chapter.

In many cases, children are first identified as having NVLD in the third or fourth grade when difficulties with math and/or reading comprehension emerge. If not identified then, they can be identified later, even in high school or college, when difficulties with complex math or written expression can emerge. Moreover, individuals with NVLD struggle in school with issues that are not strictly academic (related to impairment in executive function, motor, social difficulties), and thus, they can go without assessment or intervention for long periods of time even though they are struggling. Advanced verbal skills in children with NVLD often compound this phenomenon. Their strong verbal skills can be a source of confusion for the adults around them, who can misunderstand their challenges, attributing them incorrectly to not trying hard enough or not paying attention.

Individuals with NVLD are also known for getting along very well with adults, and this fact may delay recognition that they are having social problems. This likely happens when adults provide scaffolding for children with NVLD without even realizing they are doing so. For example, adults may fill in missing transitions during a conversation or support the idiosyncratic interests that children with NVLD may have. We have also seen differences in presentations between girls and boys, with girls sometimes being better able to manage their social challenges.

In the next section, we offer some early indicators that can help identify the needs of children with NVLD. We introduce two of our patients, *Brett and Moira* (names and details altered to protect patients' privacy). Anecdotes from their lives will be used throughout the book to illustrate some of the differences in profiles. Brett was formally diagnosed with NVLD in fourth grade, while Moira did not receive a diagnosis of NVLD until her sophomore year of college.

J. Broitman et al., *NVLD and Developmental Visual-Spatial Disorder in Children*, https://doi.org/10.1007/978-3-030-56108-6_2