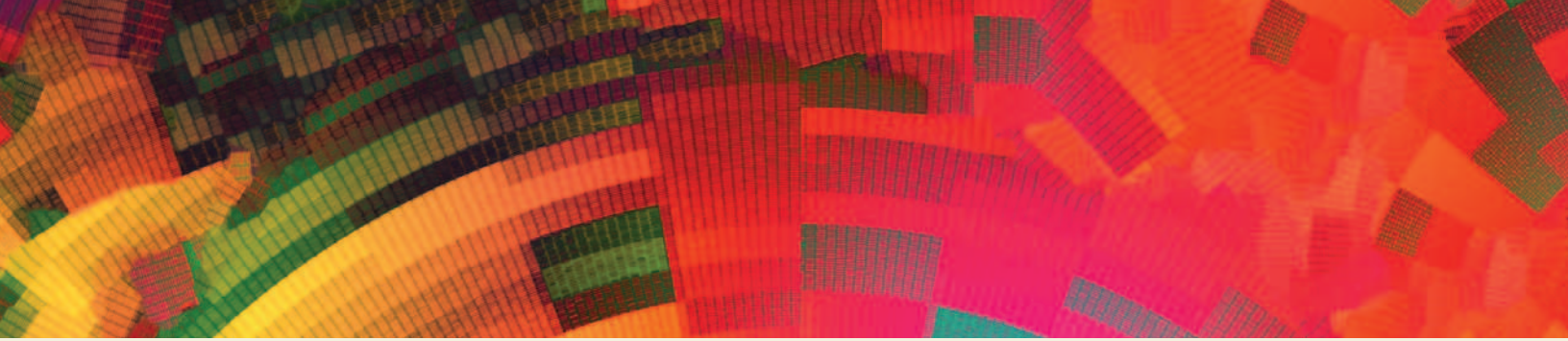




# ABNORMAL CHILD PSYCHOLOGY

sixth edition

Eric J. Mash  
David A. Wolfe



# Abnormal Child Psychology







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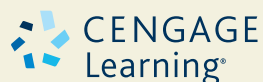
**SIXTH EDITION**

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and  
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Australia • Brazil • Mexico • Singapore • United Kingdom • United States

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# Preface

We are delighted with the momentous success of *Abnormal Child Psychology*, leading to the release of this sixth edition. Over the past 15 years, we have become closely connected to the diversity and significance of topics covered by this vibrant and active field, which (in our humble opinion) has established essential core knowledge for students interested in the many diverse areas of psychology that are influenced by normal and abnormal developmental processes. To keep pace with this expanding knowledge base, we have reviewed literally thousands of new studies across major and minor areas in this field, resulting in the most up-to-date and comprehensive text on the market.

The positive reception to previous editions of our book and the helpful feedback from students and instructors continues to shape *Abnormal Child Psychology* into a comprehensive yet student-friendly textbook. The sixth edition maintains its focus on the child, not just the disorders, while continuing to keep the text on the cutting edge of scholarly and practical advancements in the field. Because reading textbooks can be demanding, we think you will find that the full color presentation, graphics, and artwork increase your engagement with and enjoyment of the material from the moment you pick up the book.

Major changes in diagnostic terminology and criteria are reflected in the new organization and content of the sixth edition, consistent with the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-5). For example, chapters on specific disorders are organized developmentally, beginning with Neurodevelopmental Disorders (i.e., intellectual disability, autism spectrum disorder, communication and specific learning disorders, and attention-deficit/hyperactivity disorder). A new chapter on Trauma- and Stressor-Related Disorders was added to reflect the DSM-5 consensus that such disorders are distinct from other behavioral and emotional disorders. Also, this edition continues to expand on important new developments over the past few years. Recent findings on diagnosis, prevalence, causes, subtypes, comorbidity, developmental pathways, risk and protective factors, gender, ethnicity, evidence-based treatments, and early intervention and prevention are noted throughout. A recent upsurge of research into the role of genes and gene-environment interactions (G×E) as well as new studies of brain structure, functioning, and connectivity have contributed enormously to our understanding of the childhood disorders covered in this book.

At the same time, the sixth edition retains the hallmark features that make it one of the most successful texts in courses on child psychopathology, abnormal child and adolescent psychology, developmental psychopathology, atypical development, and behavior disorders of childhood and adolescence. Among these features are engaging first-person accounts and case histories designed to create powerful links between key topics and the experiences of individual children and their families. The features that follow are also foundational to the text.

## ATTENTION TO ADVANCES IN ABNORMAL CHILD AND ADOLESCENT PSYCHOLOGY

The past decade has produced extraordinary advances in understanding the special issues pertaining to abnormal child and adolescent psychology. Today, we have a much better ability to distinguish among different disorders of children and adolescents, as well as increased recognition of common features and underlying mechanisms for these supposedly different disorders. Research advances have given rise to increased recognition of poorly understood or underdetected problems such as intellectual disabilities, autism spectrum disorder, communication and specific learning disorders, attention-deficit/hyperactivity disorder, motor disorders, oppositional and conduct disorders, depressive and bipolar disorders, teen suicide and substance abuse, anxiety disorders, obsessive-compulsive disorder, trauma- and stressor-related disorders, feeding and eating disorders, and disorders stemming from chronic health problems. Similarly, the field of abnormal child psychology is now more aware of the ways children's and adolescents' psychological disorders are distinguishable from those of adults, and how important it is to maintain a strong developmental perspective in understanding the course of childhood disorders over the life span.<sup>1</sup>

In a relatively short time, the study of abnormal child and adolescent psychology has moved well beyond the individual child and family to consider the roles of community, social, and cultural influences in an integrative

<sup>1</sup> Note: *Abnormal Child Psychology* (6th ed.) spans the age period from infancy through young adulthood. "Child" often is used as shorthand for this broader age range.

and developmentally sensitive manner. Similarly, those of us working in this field are more attuned to the many struggles faced by children and adolescents with psychological disorders and their families, as well as to the demands and costs such problems place on the mental health, education, medical, and juvenile justice systems.

## **A FOCUS ON THE CHILD, NOT JUST THE DISORDERS**

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We believe that one of the best ways to introduce students to a particular problem of childhood or adolescence is to describe a real child. Clinical descriptions, written in an accessible, engaging fashion, help students understand a child's problem in context and provide a framework in which to explore the complete nature of the disorder. In each chapter, we introduce case examples of children and adolescents with disorders from our own clinical files and from those of colleagues. We then refer to these children when describing the course of the disorder, which provides the student with a well-rounded picture of the child or adolescent in the context of his or her family, peers, community, and culture.

In addition to clinical case material, we use extracts, quotes, and photos throughout each chapter to help the student remain focused on the real challenges faced by children with disorders and their families. First-person accounts and case descriptions enrich the reader's understanding of the daily lives of children and adolescents with problems and allow for a more realistic portrayal of individual strengths and limitations.

## **A COMPREHENSIVE AND INTEGRATIVE APPROACH**

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To reflect the expansion of this field, the causes and effects of various childhood disorders are explained from an integrative perspective that recognizes biological, psychological, social, and emotional influences and their interdependence. This strategy was further guided by a consideration of developmental processes that shape and are shaped by the expression of each disorder. Considering the broader contexts of family, peers, school, community, culture, and society that affect development is also important for understanding child and adolescent disorders; they are a critical feature of this text.

We use both categorical and dimensional approaches in describing disorders because each method offers unique and important definitions and viewpoints. Each topic area is defined using DSM-5 criteria accompanied by clinical descriptions, examples, and empirically derived dimensions. The clinical features of each disorder are

described in a manner that allows students to gain a firm grasp of the basic dimensions and expression of the disorder across its life span. Since children and adolescents referred for psychological services typically show symptoms that overlap diagnostic categories, each chapter discusses common comorbidities and developmental norms that help inform diagnostic decisions.

## **ATTENTION TO BOTH DEVELOPMENTAL PATHWAYS AND ADULT OUTCOMES**

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To provide balance, we approach each disorder from the perspective of the whole child. Diagnostic criteria are accompanied by added emphasis on the strengths of the individual and on the environmental circumstances that influence the developmental course of each disorder, which is followed from its early beginnings in infancy and childhood through adolescence and into early adulthood. We highlight the special issues pertaining to younger and older age groups and the risk and protective factors affecting developmental pathways. In this manner, we examine developmental continuities and discontinuities and attempt to understand why some children with problems continue to experience difficulties as adolescents and adults and others do not.

## **EMPHASIS ON DIVERSITY**

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The importance of recognizing diversity in understanding and helping children with problems and their families is emphasized throughout. New research continues to inform and increase our understanding of the crucial role that factors such as socioeconomic status (SES), gender, sexual orientation, race, ethnicity, and culture play in the identification, expression, prevalence, causes, treatments, and outcomes for child and adolescent problems. To sharpen our emphasis on these factors, we were fortunate to receive input from Sumru Erkut, Ph.D., of Wellesley College, an expert in diversity and abnormal child development. As a result of Dr. Erkut's input, we examine differences related to SES, gender, race, ethnicity, and culture for each childhood problem under discussion. In addition, we also recognize the importance of studying distinct groups in their own right as a way of understanding the processes associated with specific problems for each gender, ethnic, or cultural group. While emphasizing new knowledge about diversity issues and childhood disorders, we also caution throughout this text that relatively few studies have examined the attitudes, behaviors, and biological and psychological processes of children and adolescents with mental disorders and problems across different cultures, and we indicate places where this situation is beginning to change.

## COVERAGE OF TRAUMA- AND STRESSOR-RELATED DISORDERS, CHILD MALTREATMENT, AND RELATIONSHIP-BASED DISORDERS

A distinguishing feature of this textbook is its expansion and emphasis on several of the more recent and important areas of developmental psychopathology that do not easily fit into a deficits model or a categorical approach. One of these new areas concerns trauma- and stressor-related disorders, which are now recognized in DSM-5 as specific disorders stemming from many forms of tragic events that affect children's development and life course. The sixth edition expands on the role of stressful and traumatic events in children's lives and how such events may be direct or contributing causes to psychological disorders. We discuss the nature of child maltreatment to illustrate how major forms of childhood stress and trauma often stem from unhealthy relationships with significant others. Along with recognition of the importance of biological dispositions in guiding development and behavior, we discuss the strong connection between children's behavior patterns and the availability of a suitable child-rearing environment and how early experience can influence both gene expression and brain development. Students are made aware of how children's overt symptoms can sometimes be adaptive in particular settings or in caregiving relationships that are atypical or abusive and how traditional diagnostic labels may not be helpful.

## INTEGRATION OF TREATMENT AND PREVENTION

Treatment and prevention approaches are integral parts of understanding a particular disorder. Applying knowledge of the clinical features and developmental courses of childhood disorders to benefit children with these problems and their families always intrigues students and helps them make greater sense of the material. Therefore, we emphasize current approaches to treatment and prevention in each chapter, where such information can be tailored to the particular childhood problem. Consistent with current health system demands for accountability, we discuss best practice guidelines and emphasize interventions for which there is empirical support.

## A FLEXIBLE, EVEN MORE USER-FRIENDLY TEXT

The book is organized into a logical four-part framework to facilitate understanding of the individual disorders and mastery of the material overall. Following the

introductory chapters that comprise Part I, the contents can be readily assigned to students in any order that suits the goals and preferences of the instructor. The following is an overview of the book's four parts:

- I. Understanding Abnormal Child Psychology (definitions, theories, clinical description, research, assessment, and treatment issues);
- II. Neurodevelopmental disorders (intellectual disability, autism spectrum disorder and childhood-onset schizophrenia, communication and specific learning disorders, attention-deficit/hyperactivity disorder);
- III. Behavioral and Emotional Disorders (conduct problems, depressive and bipolar disorders, anxiety and obsessive-compulsive disorders, trauma- and stressor-related disorders);
- IV. Problems Related to Physical and Mental Health (health related and substance-use disorders, feeding and eating disorders)

The overall length of the text is completely student-centered and manageable without sacrificing academic standards of content and coverage. Dozens of first-person accounts and case histories help students grasp the real-world impact of disorders. Two guides—"Cases by Chapter" and "Cases by Clinical Aspect"—have been provided at the front of the text to help teachers and students navigate the book as easily as possible.

In addition, chapters are consistently organized to help instructors avoid assigning sections of each chapter (e.g., biological causes) that may not appeal to the level of their students or that address particular subtopics that fall outside the parameters of a given course (e.g., childhood-onset schizophrenia or pediatric bipolar disorder). For instructors wanting a more detailed presentation of research findings, supplementary readings can be drawn from the many up-to-date citations of original research.

Related but less critical information that enhances each topic appears in the "A Closer Look" features, so that students can easily recognize that the material is presented to add further insight or examples to the major content areas of the chapter.

Finally, chapters provide many useful pedagogical features to help make students' encounters with and learning of the material an agreeable experience: *key terms* are highlighted and defined where they appear in the text, listed at the chapter's end, and defined in a separate glossary at the back of the book to help students grasp important terminology; DSM-5 tables are provided in addition to general tables to summarize diagnostic criteria; *bullet points* guide students to key concepts throughout the chapters; and interim "Section Summaries" help students consolidate each chapter's key concepts. In addition to the lists of key terms, students

will find a listing of “Section Summaries” at the end of each chapter for easy reference while studying.

## SUMMARY OF KEY FEATURES

- ▶ “A Closer Look” features, mentioned above, are found throughout the book to draw students into the material and enrich each topic with engaging information. Some examples include: “What Are the Long-Term Criminal Consequences of Child Maltreatment?” “Common Fears in Infancy, Childhood, and Adolescence,” and “Did Darwin Have a Panic Disorder?”
- ▶ Visual learning aids such as cartoons, tables, and eye-catching chapter- and section-opening quotes, as well as numerous photos and figures, in full color, illustrate key concepts throughout the text to complement student understanding.
- ▶ The authors’ in-depth coverage of the role of the normal developmental process in understanding each disorder, as well as their close attention to important sex differences in the expression, determinants, and outcomes of child and adolescent disorders, promote greater understanding.
- ▶ Current findings regarding the reliability and validity of DSM diagnostic criteria for specific disorders are discussed, with attention to issues, features, and disorders that are new to DSM-5.

## NOTABLE CONTENT CHANGES AND UPDATES IN THE SIXTH EDITION

Highlights of the content changes and updates to this edition include the following:

- ▶ The most current information concerning prevalence, age at onset, and gender distribution for each disorder, including a discussion of issues surrounding the reported increase in the prevalence of autism spectrum disorder.
- ▶ Enriched coverage of gender and culture, including exciting new findings related to the expression, development, and adolescent outcomes for girls with attention-deficit/hyperactivity disorder (ADHD), conduct problems, and anxiety and mood disorders and for children from different ethnic and cultural groups.
- ▶ The most recent theories about developmental pathways for different disorders, including the childhood precursors of eating disorders.
- ▶ Integrative developmental frameworks for ADHD, conduct problems, anxiety disorders, depressive disorders, autism spectrum disorder, and child maltreatment.
- ▶ Exciting new findings on the interplay between early experience and brain development, including how early stressors, such as abuse, alter the brain systems associated with regulating stress and how they place the child at risk for developing later problems, such as anxiety or mood disorders.
- ▶ Recent genetic discoveries regarding neurodevelopmental disorders such as autism spectrum disorder, ADHD, and specific learning and communication disorders.
- ▶ Findings from neuroimaging studies of ADHD, autism spectrum disorder, anxiety, and depression that illuminate neurobiological causes.
- ▶ New information on family factors in externalizing and internalizing disorders, and on developmental disabilities.
- ▶ New findings on different presentation types, dimensions, and specifiers for disorders such as ADHD, oppositional defiant disorder, and conduct disorders.
- ▶ Recent findings on the development of precursors of psychopathy in young people.
- ▶ Recent findings on patterns of use and misuse of medications for treating ADHD and childhood depression.
- ▶ New definitions of intellectual disabilities and adaptive behavior.
- ▶ Current findings from neuroimaging studies showing the harmful effects of abuse and neglect and similar forms of stress and trauma on neurocognitive development.
- ▶ Discussion of the new DSM-5 categories Reactive Attachment Disorder (RAD) and Disinhibited Social Engagement Disorder (DSED).
- ▶ The most recent follow-up findings from groundbreaking early intervention and prevention programs, such as early interventions for children with autism spectrum disorder, Fast Track for conduct disorders, and the Multimodal Treatment Study for Children with ADHD.
- ▶ An enhanced focus on evidence-based assessment and treatments including:
  - Advances in early identification and new treatments for autism spectrum disorder (Chapter 6)
  - Descriptions of new/revised communication and learning disorders, such as social (pragmatic) communication disorder



- Behavior therapy, psychopharmacological, and combined treatments for ADHD (Chapter 8)
  - Parent management training, problem-solving skills training, and multisystemic therapy for oppositional and conduct disorders (Chapter 9)
  - Cognitive-behavioral therapy and interpersonal therapy for depression (Chapter 10)
  - Cognitive-behavioral therapy, exposure, and modeling for anxiety disorders (Chapter 11)
  - Treatment for child and adolescence substance-abuse problems (Chapter 13)
  - Treatment outcome studies with anorexia and bulimia (Chapter 14)
- Added coverage on important, contemporary topics including:
- Presentation types of disorders such as the predominantly inattentive presentation of ADHD and new findings on emotional impulsivity (Chapter 8)
  - Temperament and personality disorders (Chapters 2 and 4)
  - Different symptom clusters for oppositional defiant disorder (Chapter 9)
  - Parenting styles (Chapters 2, 9, 10, 11, and 12)
  - The stigma of mental illness (Chapters 1 and 4)
  - The interplay between research findings in abnormal child psychology and public policy implications throughout the book.
- Coverage of many significant reports from the Surgeon General, the World Health Organization, and others that will shape the future of research and practice in children's mental health (Chapters 1 and 2)
- Support organizations for parents and children are now listed in the Instructor's Manual, along with a greatly expanded selection of multimedia and interactive learning resources, foremost among these numerous new video clips—selected by the authors. Unique in this market, these current, high-interest videos focus on topics such as ADHD, autism, bullying, life skills, and Down syndrome.

## A COMPREHENSIVE TEACHING AND LEARNING PACKAGE

*Abnormal Child Psychology*, sixth edition, is accompanied by an array of supplements developed to facilitate both the instructors' and the students' best possible experience, inside as well as outside the classroom. Supplements continuing from the fourth edition have been thoroughly revised and updated; other supplements are new to this

edition. Cengage Learning invites you to take full advantage of the teaching and learning tools available to you and has prepared the following descriptions of each.

### Instructor's Manual with Test Bank

The Instructor's Manual with Test Bank closely matches the text and consists of lecture outlines and notes, learning objectives, myriad activities and handouts, video and website recommendations, "Warning Signs" transparency masters, and new listings of support organizations for parents and children. In addition to a comprehensive test bank, this resource also includes a set of extras called "Five Minutes More," which comprises additional lecture ideas, transparency/digital slide masters, and activities on selected topics such as the brain, day care, and bilingualism. The Instructor's Manual is available in print and in electronic format on the book's companion website (password-protected).

### CourseMate

*Abnormal Child Psychology*, sixth edition, includes Psychology CourseMate, a complement to your textbook.

Psychology CourseMate includes:

- An interactive eBook, with highlighting, note taking and search capabilities
- Interactive learning tools including:
  - Quizzes
  - Flashcards
  - Videos
  - and more
- Engagement Tracker, a first-of-its-kind tool that monitors student engagement in the course

Go to [cengagebrain.com](http://cengagebrain.com) to access these resources.

## ACKNOWLEDGMENTS

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# Introduction to Normal and Abnormal Behavior in Children and Adolescents

*Mankind owes to the child the best it has to give.*

—UN Convention on the Rights of the Child (1989)

## CHAPTER PREVIEW

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### LOOKING AHEAD

**A**FTER CENTURIES OF SILENCE, misunderstanding, and outright abuse, children's mental health problems and needs now receive greater attention, which corresponds to society's recent concern about children's well-being. Fortunately, today more people like you want to understand and address the needs of children and adolescents. Perhaps you have begun to recognize that children's mental health problems differ in many ways from those of adults, so you have chosen to take a closer look. Maybe you are planning a career in teaching, counseling, medicine, law, rehabilitation, or psychology—all of which rely somewhat on knowledge of children's special needs to shape their focus and practice. Whatever your reason is for reading this book, we are pleased to welcome you to an exciting and active field of study, one that we believe will expose you to concepts and issues that will have a profound and lasting influence. Child and adolescent mental health issues are becoming relevant to many of us in

our current and future roles as professionals, community members, and parents, and the needs for trained personnel are increasing (McLearn, Knitzer, & Carter, 2007).

Let's begin by considering Georgina's problems, which raise several fundamental questions that guide our current understanding of children's **psychological disorders**. Ask yourself: Does Georgina's behavior seem abnormal, or are aspects of her behavior normal under certain circumstances?

How would you describe Georgina's problem? Is it an emotional problem? A learning problem? A developmental disability? Could something in her environment cause these strange rituals, or is she more likely responding to internal cues we do not know about? Would Georgina's behavior be viewed differently if she were a boy, or African American or Hispanic? Will she continue to display these behaviors and, if so, what can we do to help?

## GEORGINA

### Counting for Safety

At age 10, Georgina's strange symptoms had reached the point where her mother needed answers—and fast. Her behavior first became a concern about 2 years ago, when she started talking about harm befalling herself or her family. Her mother recalled how Georgina would come home from the third grade and complain that “I need to finish stuff but I can't seem to,” and “I know I'm gonna forget something so I have to keep thinking about it.” Her mother expressed her own frustration and worry: “As early as age 5, I remember Georgina would touch and arrange things a certain way, such as brushing her teeth in a certain sequence. Sometimes I'd notice that she would walk through doorways over and over, and she seemed to need to check and arrange things her way before she could leave a room.” Georgina's mother had spoken to their family doctor about it back then and was told, “It's probably a phase she's going through, like stepping on cracks will break your mother's back. Ignore it and it'll stop.”

But it didn't stop. Georgina developed more elaborate rituals for counting words and objects, primarily in groups of four. She told her mom, “I need to count things out and group them a certain way—only I know the rules how to do it.” When she came to my office, Georgina told me, “When someone says something to me or I read something, I have to count the words in groups of four and then organize these groups into larger and larger groups of four.” She looked at the pile of magazines in my office and the books on my shelf and explained, matter-of-factly, that she was counting and grouping these things while we talked! Georgina was constantly terrified of forgetting a passage or objects or being interrupted. She believed that if she could not complete her counting, some horrible



Even at age 5, Georgina's strange counting ritual was a symptom of her obsessive-compulsive disorder.

tragedy would befall her parents or herself. Nighttime was the worst, she explained, because “I can't go to sleep until my counting is complete, and this can take a long time.” (In fact, it took up to several hours, her mother confirmed.) Understandably, her daytime counting rituals had led to decline in her schoolwork and friendships. Her mother showed me her report cards: Georgina's grades had gone from above average to near failing in several subjects. (Based on Piacentini & Graae, 1997)



When seeking assistance or advice, parents often ask questions similar to these about their child's behavior, and understandably they need to know the probable course and outcome. These questions also exemplify the following issues that research studies in abnormal child psychology seek to address:

- ▶ Defining what constitutes normal and abnormal behavior for children of different ages, sexes, and ethnic and cultural backgrounds
- ▶ Identifying the causes and correlates of abnormal child behavior
- ▶ Making predictions about long-term outcomes
- ▶ Developing and evaluating methods for treatment and/or prevention

How you choose to describe the problems that children show, and what harm or impairments such problems may lead to, is often the first step toward understanding the nature of their problems. As we discuss in Chapter 11, Georgina's symptoms fit the diagnostic criteria for obsessive-compulsive disorder. This diagnostic label, although far from perfect, tells a great deal about the nature of her disorder, the course it may follow, and the possible treatments.

Georgina's problems also illustrate important features that distinguish most child and adolescent disorders:

- ▶ *When adults seek services for children, it often is not clear whose "problem" it is.* Children usually enter the mental health system as a result of concerns raised by adults—parents, pediatricians, teachers, or school counselors—and the children themselves may have little choice in the matter. Children do not refer themselves for treatment. This has important implications for how we detect children's problems and how we respond to them.
- ▶ *Many child and adolescent problems involve failure to show expected developmental progress.* The problem may be transitory, like most types of bed-wetting, or it may be an initial indication of more severe problems ahead, as we see in Georgina's case. Determining the problem requires familiarity with normal, as well as abnormal, development.
- ▶ *Many problem behaviors shown by children and youths are not entirely abnormal.* To some extent, most children and youth commonly exhibit certain problem behaviors. For instance, worrying from time to time about forgetting things or losing track of thoughts is common; Georgina's behavior, however, seems to involve more than these normal concerns. Thus, decisions about what to do also require familiarity with known psychological disorders and troublesome problem behaviors.

- ▶ *Interventions for children and adolescents often are intended to promote further development, rather than merely to restore a previous level of functioning.* Unlike interventions for most adult disorders, the goal for many children is to boost their abilities and skills, as well as to eliminate distress.

Before we look at today's definitions of abnormal behavior in children and adolescents, it is valuable to discover how society's interests and approaches to these problems during previous generations have improved the quality of life and mental health of children and youths. Many children, especially those with special needs, fared poorly in the past because they were forced to work as coal miners, field hands, or beggars. Concern for children's needs, rights, and care requires a prominent and consistent social sensitivity and awareness that simply did not exist prior to the twentieth century (Aries, 1962). As you read the following historical synopsis, note how the relatively short history of abnormal child psychology has been strongly influenced by philosophical and societal changes in how adults view and treat children in general (Borstelmann, 1983; V. French, 1977).

## HISTORICAL VIEWS AND BREAKTHROUGHS

*These were feverish, melancholy times; I cannot remember to have raised my head or seen the moon or any of the heavenly bodies; my eyes were turned downward to the broad lamplit streets and to where the trees of the garden rustled together all night in undecipherable blackness; . . .*

—Robert Louis Stevenson, describing memories of childhood illness and depression (quoted in Calder, 1980)

We must recognize children as valuable, independent of any other purpose, to help them develop normal lives and competencies. Although this view of children should seem self-evident to us today, valuing children as persons in their own right—and providing medical, educational, and psychological resources to encourage their progress—has not been a priority of previous societies. Early writings suggest that children were considered servants of the state in the city-states of early Greece. Ancient Greek and Roman societies believed that any person—young or old—with a physical or mental handicap, disability, or deformity was an economic burden and a social embarrassment, and thus was to be scorned, abandoned, or put to death (V. French, 1977).

Prior to the eighteenth century, children's mental health problems—unlike adult disorders—were seldom

mentioned in professional or other forms of communication. Some of the earliest historical interest in abnormal child behavior surfaced near the end of the eighteenth century. The Church used its strong influence to attribute children's unusual or disturbing behaviors to their inherently uncivilized and provocative nature (Kanner, 1962). In fact, during this period, nonreligious explanations for disordered behavior in children were rarely given serious consideration because possession by the devil and similar forces of evil was the only explanation anyone needed (Rie, 1971). No one was eager to challenge this view, given that they too could be seen as possessed and dealt with accordingly.

Sadly, during the seventeenth and eighteenth centuries, as many as two-thirds of children died before their fifth birthday, often because there were no antibiotics or similar medications to treat deadly diseases (Zelizer, 1994). Many children were treated harshly or indifferently by their parents. Cruel acts ranging from extreme parental indifference and neglect to physical and sexual abuse of children went unnoticed or were considered an adult's right in the education or disciplining of a child (Radbill, 1968). For many generations, the implied view of society that children are the exclusive property and responsibility of their parents was unchallenged by any countermovement to seek more humane treatment for children. A parent's prerogative to enforce child obedience, for example, was formalized by Massachusetts' Stubborn Child Act of 1654, which permitted parents to put "stubborn" children to death for misbehaving. (Fortunately, no one met this ultimate fate.) Into the mid-1800s, specific laws allowed children with severe developmental disabilities to be kept in cages and cellars (Donohue, Hersen, & Ammerman, 2000).

## The Emergence of Social Conscience

*"It is easier to build strong children than to fix broken men."*

—Attributed to Frederick Douglass

Fortunately, the situation gradually improved for children and youths throughout the nineteenth century and progressed significantly during the latter part of the twentieth century. However, until very recent changes in laws and attitudes, children (along with women, members of minority groups, and persons with special needs) were often the last to benefit from society's prosperity and were the primary victims of its shortcomings. With the acuity of hindsight, we now know that before any real change occurs, it requires a philosophy of humane understanding in how society recognizes and addresses the special needs of some of its members. In addition to humane beliefs, each

society must develop ways and means to recognize and protect the rights of individuals, especially children, in the broadest sense (UN Convention on the Rights of the Child, 1989). An overview of some of these major developments provides important background for understanding today's approaches to children's mental health issues.

In Western society, an inkling of the prerequisites for a social conscience first occurred during the seventeenth century, when both a philosophy of humane care and institutions of social protection began to take root. One individual at the forefront of these changes was John Locke (1632–1704), a noted English philosopher and physician who influenced present-day attitudes and practices of childbirth and child-rearing. Locke believed in individual rights, and he expressed the novel opinion that children should be raised with thought and care instead of indifference and harsh treatment. Rather than seeing children as uncivilized tyrants, he saw them as emotionally sensitive beings who should be treated with kindness and understanding and given proper educational opportunities (Illick, 1974). In his words, "the only fence [archaic use, meaning "defense"] against the world is a thorough knowledge of it."

Then, at the turn of the nineteenth century, one of the first documented efforts to work with a special child was undertaken by Jean Marc Itard (1774–1838). A Closer Look 1.1 explains how Itard treated Victor (discovered living in the woods outside Paris) for his severe developmental delays rather than sending him to an asylum. Symbolically, this undertaking launched a new era of a helping orientation toward special children, which initially focused on the care, treatment, and training of the people then termed "mental defectives."

As the influence of Locke and others fostered the expansion of universal education throughout Europe and North America during the latter half of the nineteenth century, children unable to handle the demands of school became a visible and troubling group. Psychologists such as Leta Stetter Hollingworth (1886–1939) argued that many mentally defective children were actually suffering from emotional and behavioral problems primarily due to inept treatment by adults and lack of appropriate intellectual challenge (Benjamin & Shields, 1990). This view led to an important and basic distinction between persons with intellectual disability ("imbeciles") and those with psychiatric or mental disorders ("lunatics"), although this distinction was far from clear at the time. Essentially, local governments needed to know who was responsible for helping children whose cognitive development appeared normal but who showed serious emotional or behavioral problems. The only guidance they had previously had in distinguishing children with intellectual deficits

## Victor of Aveyron

Victor, often referred to as the “wild boy of Aveyron,” was discovered in France by hunters when he was about 11 or 12 years old, having lived alone in the woods presumably all of his life. Jean Marc Itard, a young physician at the time, believed the boy was “mentally arrested” because of social and educational neglect, and set about demonstrating whether such retardation could be reversed. Victor—who initially was mute, walked on all fours, drank water while lying flat on the ground, and bit and scratched—became the object of popular attention as rumors spread that he had been raised by animals. He was dirty, nonverbal, incapable of attention, and insensitive to basic sensations of hot and cold. Despite the child’s appearance and behavior, Itard believed that environmental stimulation could humanize him. Itard’s account of his efforts poignantly reveals the optimism, frustration, anger, hope, and despair that he experienced in working with this special child.

Itard used a variety of methods to bring Victor to an awareness of his sensory experiences: hot baths, massages, tickling, emotional excitement, even electric shocks. After 5 years of training by Dr. Itard, Victor had learned to identify objects, identify letters of the alphabet, comprehend many words, and apply names to objects and parts of objects. Victor also showed a preference for social life over the isolation of the wild. Despite his achievements, Itard felt his efforts had failed, because his goals of socializing the boy to make him normal were never reached. Nevertheless, the case of Victor was a landmark in the effort to assist children with special needs. For the first time an adult had tried to really understand—to feel and know—the



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mind and emotions of a special child, and had proved that a child with severe impairments could improve through appropriate training. This deep investment on the part of an individual in the needs and feelings of another person’s child remains a key aspect of the helping orientation to this day.

Source: From *A History of the Care and Study of the Mentally Retarded*, by L. Kanner, 1964, p. 15. Courtesy of Charles C Thomas, Publisher, Springfield, Illinois.

from children with behavioral and emotional problems was derived from religious views of immoral behavior: children who had normal cognitive abilities but who were disturbed were thought to suffer from moral insanity, which implied a disturbance in personality or character (Pritchard, 1837). Benjamin Rush (1745–1813), a pioneer in psychiatry, argued that children were incapable of true adult-like insanity, because the immaturity of their developing brains prevented them from retaining the mental events that caused insanity (Rie, 1971). Consequently, the term *moral insanity* grew in acceptance as a means of accounting for nonintellectual forms of abnormal child behavior.

The implications of this basic distinction created a brief yet significant burst of optimism among professionals. Concern for the plight and welfare of children with mental and behavioral disturbances began to rise in conjunction with two important influences. First, with advances in general medicine, physiology, and neurology, the moral insanity view of psychological disorders was replaced by the organic disease model,

which emphasized more humane forms of treatment. This advancement was furthered by advocates such as Dorothea Dix (1802–1887), who in the mid-nineteenth century established 32 humane mental hospitals for the treatment of troubled youths previously relegated to cellars and cages (Achenbach, 1982). Second, the growing influence of the philosophies of Locke and others led to the view that children needed moral guidance and support. With these changing views came an increased concern for moral education, compulsory education, and improved health practices. These early efforts to assist children provided the foundation for evolving views of abnormal child behavior as the result of combinations of biological, environmental, psychological, and cultural influences.

## Early Biological Attributions

The successful treatment of infectious diseases during the latter part of the nineteenth century strengthened the emerging belief that illness and disease, including

## Masturbatory Insanity

Today, most parents hardly balk at discovering their child engaging in some form of self-stimulation—it is considered a normal part of self-discovery and pleasant-sensation seeking. Such tolerance was not always the case. In fact, children's masturbation is historically significant because it was the first "disorder" unique to children and adolescents (Rie, 1971). Just over a hundred years ago, *masturbatory insanity* was a form of mental illness and, in keeping with the contemporaneous view that such problems resided within the individual, it was believed to be a very worrisome problem (Rie, 1971; Szasz, 1970).

By the eighteenth century, society's objections to masturbation originated from religious views that were augmented by the growing influence of science (Rie, 1971; Szasz, 1970). Moral convictions regarding the wrongfulness of masturbation led to a physiological explanation with severe medical ramifications, based on pseudoscientific papers such as *Onania, or the Heinous Sin of Self-Pollution* (circa 1710) (Szasz, 1970). The medical view

of masturbation focused initially on adverse effects on physical health, but by the mid-nineteenth century the dominant thought shifted to a focus on the presumed negative effects on mental health and nervous system functioning. With amazing speed, masturbation became the most frequently mentioned "cause" of psychopathology in children.

Interest in masturbatory insanity gradually waned toward the end of the nineteenth century, but the argument still remained tenable as psychoanalytic theory gained acceptance. Eventually, the notion of masturbatory insanity gave way to the concept of neurosis. It was not until much later in the twentieth century that the misguided and illusory belief in a relationship between masturbation and mental illness was dispelled. Let this example remind us of the importance of scientific skepticism in confirming or disconfirming new theories and explanations for abnormal behavior.

*Source:* Based on author's case material.

mental illness, were biological problems. However, early attempts at biological explanations for deviant or abnormal behavior were highly biased in favor of the cause being the person's fault. The public generally distrusted and scorned anyone who appeared "mad" or "possessed by the devil" or similar evil forces. A Closer Look 1.2 describes masturbatory insanity, a good illustration of how such thinking can lead to an explanation of abnormal behavior without consideration of objective scientific findings and the base rate of masturbation in the general population. The notion of masturbatory insanity also illustrates how the prevailing political and social climates influence definitions of child psychopathology, which is as true today as it was in the past. Views on masturbation evolved from the moral judgment that it was a sin of the flesh, to the medical opinion that it was harmful to one's physical health, to the psychiatric assertion that sexual overindulgence caused insanity.

In contrast to the public's general ignorance and avoidance of issues concerning persons with mental disorders that continued during the late nineteenth century, the mental hygiene movement provides a benchmark of changing attitudes toward children and adults with mental disorders. In 1909, Clifford Beers, a layperson who had recovered from a severe psychosis, spearheaded efforts to change the plight of others also afflicted. Believing that mental disorders were a form of disease, he criticized society's ignorance and indifference and sought to prevent mental disease by

raising the standards of care and disseminating reliable information (M. Levine & Levine, 1992). As a result, detection and intervention methods began to flourish, based on a more tempered—yet still quite frightened and ill-informed—view of afflicted individuals.

Unfortunately, because this paradigm was based on a biological disease model, intervention was limited to persons with the most visible and prominent disorders, such as psychoses or severe intellectual disability. Although developmental explanations were a part of this early view of psychopathology, they were quite narrow. The development of the disease was considered progressive and irreversible, tied to the development of the child only in that it manifested itself differently as the child grew, but remained impervious to other influences such as treatment or learning. All one could do was to prevent the most extreme manifestations by strict punishment and to protect those not affected.

Sadly, this early educational and humane model for assisting persons with mental disorders soon reverted to a custodial model during the early part of the twentieth century. Once again, attitudes toward anyone with mental or intellectual disabilities turned from cautious optimism to dire pessimism, hostility, and disdain. Particularly children, youths, and adults with intellectual disability were blamed for crimes and social ills during the ensuing alarmist period (Achenbach, 1982). Rather than viewing knowledge as a form of protection, as Locke had argued, society returned to the view that mental illness and retardation were



diseases that could spread if left unchecked. For the next two decades, many communities opted to segregate or institutionalize people with mental disabilities and to prevent them from procreating (eugenics). We will return to these important developments in our discussion of the history of intellectual disability (formerly known as mental retardation) in Chapter 5.

## Early Psychological Attributions

To conceptualize and understand abnormal child psychology, biological influences must be balanced with important developmental and cultural factors, including the family, peer group, and school. Of course, this perception was not always the case. The long-standing, medically based view that abnormal behavior is a disorder or disease residing within the person unfortunately led to neglect of the essential role of a person's surroundings, context, and relations, and of the interactions among these variables.

The recognition of psychological influences emerged early in the twentieth century, when attention was drawn to the importance of major psychological disorders and to formulating a taxonomy of illnesses. Such recognition allowed researchers to organize and categorize ways of differentiating among various psychological problems, resulting in some semblance of understanding and control. At the same time, there was concern that attempts to recognize the wide range of mental health needs of children and adults could easily backfire and lead to the neglect of persons with more severe disorders. This shift in perspective and increase in knowledge also prompted the development of diagnostic categories and new criminal offenses, the expansion of descriptions of deviant behavior, and the addition of more comprehensive monitoring procedures for identified individuals (Costello & Angold, 2006). Two major theoretical paradigms helped shape these emerging psychological and environmental influences: psychoanalytic theory and behaviorism. We'll limit our discussion here to their historical importance, but additional content concerning their contemporary influence appears in the Chapter 2 discussion of theories and causes.

### Psychoanalytic Theory

In Sigmund Freud's day, near the beginning of the twentieth century, many child psychiatrists and psychologists had grown pessimistic about their ability to treat children's mental disorders other than with custodial or palliative care. Freud was one of the first to reject such pessimism and raise new possibilities for treatment as the roots of these disorders were traced to early childhood (Fonagy, Target, & Gergely, 2006).

Although he believed that individuals have inborn drives and predispositions that strongly affect their development, he also believed that experiences play a necessary role in psychopathology. For perhaps the first time, the course of mental disorders was not viewed as inevitable; children and adults could be helped if provided with the proper environment, therapy, or both.

Psychoanalytic theory significantly influenced advances in our ways of thinking about the causes and treatment of mental disorders. Perhaps the most important of these advances from the perspective of abnormal child psychology was that Freud was the first to give meaning to the concept of mental disorder by linking it to childhood experiences (Rilling, 2000). His radical theory incorporated developmental concepts into an understanding of psychopathology at a time when early childhood development was virtually ignored by mainstream child psychiatry and psychology. Rather than focusing on singular, specific causes (a hallmark of the disease model in vogue at the time), psychoanalytic theory emphasized that personality and mental health outcomes had multiple roots. Outcomes depended to a large degree on the interaction of developmental and situational processes that change over time in unique ways (Fonagy et al., 2006). In effect, Freud's writings shifted the view from one of children as innocent or insignificant to one of human beings in turmoil, struggling to achieve control over biological needs and to make themselves acceptable to society through the microcosm of the family (Freud, 1909/1953).

Contributions based on Freud's theory continued to expand throughout the early part of the twentieth century, as clinicians and theorists broke from some of his earlier teachings and brought new insights to the field. His daughter, Anna Freud (1895–1982), was instrumental in expanding his ideas to understanding children, in particular by noting how children's symptoms were related more to developmental stages than were those of adults. Anna Freud's contemporary, Melanie Klein (1882–1960), also took an interest in the meaning of children's play, arguing that all actions could be interpreted in terms of unconscious fantasy. The work of both women made possible the analysis of younger children and the recognition of nonverbal communication for patients of all ages (Mason, 2003).

In recent years, psychoanalytic theory's approach to abnormal child psychology has had less influence on clinical practice and teaching, largely because of the popularity of the phenomenological (descriptive) approach to psychopathology (Costello & Angold, 2006). Nevertheless, it is important to remember that current **nosologies** (the efforts to classify psychiatric disorders into descriptive categories) are essentially nondevelopmental in their approaches. Rather than attempting, as the Freudian



approach does, to describe the development of the disease in the context of the development of the individual, nosologies such as those in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013) attempt to find common denominators that describe the manifestations of a disorder at any age (Achenbach & Rescorla, 2006). Despite valid criticism and a lack of empirical validation of the content of psychoanalytic theory and its many derivatives, the idea of emphasizing the interconnection between children's normal and abnormal development retains considerable attraction as a model for abnormal child psychology.

## Behaviorism

The development of evidence-based treatments for children, youths, and families can be traced to the rise of behaviorism in the early 1900s, as reflected in Pavlov's experimental research that established the foundations for classical conditioning, and in the classic studies on the conditioning and elimination of children's fears (Jones, 1924; J. B. Watson & Rayner, 1920). Initially, John Watson (1878–1958), the “Father of Behaviorism,” intended to explain Freud's concepts in more scientific terms, based on the new learning theory of classical conditioning.

Ironically, Watson was perhaps more psychoanalytically inspired by Freud's theories than he intended. As he attempted to explain terms such as *unconscious* and *transference* using the language of conditioned emotional responses (and thereby discredit Freud's theory of emotions), he in fact pioneered the scientific investigation of some of Freud's ideas (Rilling, 2000). A Closer Look 1.3 highlights some of Watson's scientific ambitions and his famous study with Little Albert, as well as some of the controversy surrounding his career.

Watson is known for his theory of emotions, which he extrapolated from normal to abnormal behavior. His infamous words exemplify the faith some early researchers—and the public—placed in laboratory-based research on learning and behavior: “Give me a dozen healthy infants . . . and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors.” (J. B. Watson, 1925, p. 82)

Beyond the work in their lab, the Watson household must have been an interesting place. Consider the following contrasting views and advice on raising children from one of America's first “child experts” and his wife:

John Watson (1925): Never hug and kiss them, never let them sit in your lap. If you must, kiss them once on

the forehead when they say goodnight. Shake hands with them in the morning.

Rosalie Rayner Watson (1930): I cannot restrain my affection for the children completely. . . . I like being merry and gay and having the giggles. The behaviorists think giggling is a sign of maladjustment, so when the children want to giggle I have to keep a straight face or rush them off to their rooms.

This example and the study of Little Albert illustrate the importance of keeping in perspective any new advances and insights that at first may seem like panaceas for age-old problems. As any soiled veteran of parenting would attest, no child-rearing shortcuts or uniform solutions guide us in dealing with children's problems—raising children is part skill, part wisdom, and part luck. Nonetheless, families, communities, and societal and cultural values play a strong role in determining how successful current child-rearing philosophies are at benefiting children.

## Evolving Forms of Treatment

Compared with the times that followed, the period from 1930 to 1950 was a quiet time for research and treatment in abnormal child psychology. A few reports in the 1930s described the behavioral treatment of isolated problems such as bed-wetting (O. H. Mowrer & Mowrer, 1938), stuttering (Dunlap, 1932), and fears (F. B. Holmes, 1936). Other than these reports, psychodynamic approaches were the dominant form of treatment during this period. As a carryover from the 1800s, most children with intellectual or mental disorders were still institutionalized. This practice had come under mounting criticism by the late 1940s, when studies by René Spitz raised serious questions about the harmful impact of institutional life on children's growth and development (R. Spitz, 1945). He discovered that infants raised in institutions without adult physical contact and stimulation developed severe physical and emotional problems. Efforts were undertaken to close institutions and place dependent and difficult children in foster family homes or group homes. Within a 20-year period, from 1945 to 1965, there was a rapid decline in the number of children in institutions, while the number of children in foster family homes and group homes increased.

During the 1950s and early 1960s, behavior therapy emerged as a systematic approach to the treatment of child and family disorders. The therapy was originally based on operant and classical conditioning principles established through laboratory work with animals. In their early form, these laboratory-based techniques to modify undesirable behaviors and shape adaptive

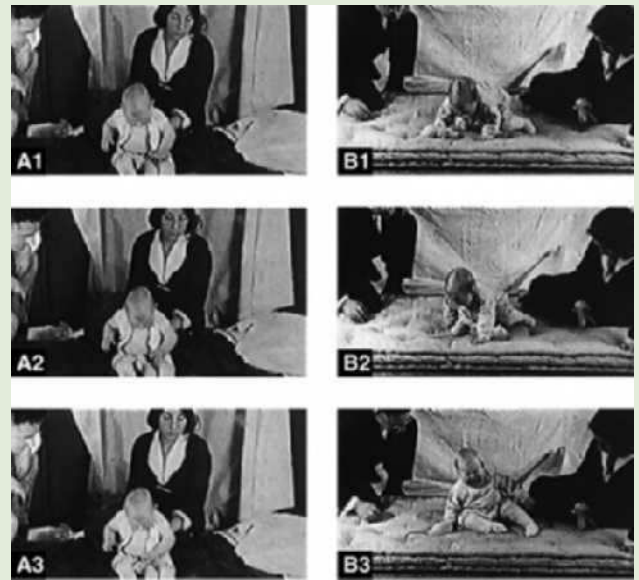
## Little Albert, Big Fears, and Sex in Advertising

Most of us are familiar with the story of Little Albert and his fear of white rats and other white furry objects, thanks to the work of John Watson and his graduate assistant (and then wife) Rosalie Rayner. However, understanding the times and background of John Watson helps put these pioneering efforts into a broader historical perspective, and highlights the limited concern for ethics in research that existed in his day.

Watson's fascination with and life dedication to the study of fears may have stemmed from his own acknowledged fear of the dark, which afflicted him throughout his adult life. His career break arrived when he was given an opportunity to create a research laboratory at Johns Hopkins University for the study of child development. Instead of conditioning rats, he could now use humans to test his emerging theories of fear conditioning. However, at that time the only source of human subjects was persons whose rights were considered insignificant or who had less than adequate power to protect themselves, such as orphans, mental patients, and prisoners. Just as he had studied rats in their cages, Watson now studied babies in their cribs.

Clearly, his method of obtaining research subjects and experimenting with them would be considered highly unethical today. To demonstrate how fear might be conditioned in a baby, Watson and Rayner set out to condition fear in an 11-month-old orphan baby they named Albert B., who was given a small white rat to touch, toward which he showed no fear. After this warm-up, every time the infant reached to touch the rat, Watson would strike a steel bar with a hammer. After repeated attempts to touch the rat brought on the same shocking sounds, "the infant jumped violently, fell forward and began to whimper." The process was repeated intermittently, enough times that eventually Albert B. would break down and cry, desperately trying to crawl away, whenever he saw the rat. Watson and Rayner had successfully conditioned the child to fear rats. They then conditioned him to fear rabbits, dogs, fur coats, and—believe it or not—Santa Claus masks (Karier, 1986).

It is disconcerting that Albert B. moved away before any deconditioning was attempted, resulting in decades of speculation as to his identity and the strange set of fears he might have suffered. In 2009 a team of psychologists tracked down Little Albert's identity and fate: he was identified as Douglas



Source: Neurobiology of Pavlovian Fear Conditioning Annual Review of Neuroscience Vol. 24: 897–931, by Stephen Maren; Annual Review of Neuroscience ©2011 Annual Reviews. All rights reserved.

Merritte, whose mother worked at the campus hospital and was paid \$1 for her baby's research participation. Sadly, the team discovered that Douglas died at age 6 of acquired hydrocephalus (Beck, Levinson, & Irons, 2009).

It is ironic, moreover, that Watson went on to develop a career in advertising after he was ousted from the university (presumably as a result of concerns over his extramarital relationship with his graduate student; Benjamin et al., 2007). His brand of behaviorism, with its emphasis on the prediction and control of human behavior, met with unqualified success on Madison Avenue. As he explained, "No matter what it is, like the good naturalist you are, you must never lose sight of your experimental animal—the consumer." We can thank John B. Watson for advertising's dramatic shift in the 1930s toward creating images around any given product that exploited whenever possible the sexual desires of both men and women.

Source: Based on Karier, 1986.

abilities stood in stark contrast to the dominant psychoanalytic approaches, which stressed resolution of internal conflicts and unconscious motives. Behavior therapy focused initially on children with intellectual disability or severe disturbances. Psychoanalytic practices for these children were perceived as ineffective or inappropriate. Much of this early work took place in

institutions or classroom settings that were thought to provide the kind of environmental control needed to change behavior effectively. Since that time, behavior therapy has continued to expand in scope, and has emerged as a prominent form of therapy for a wide range of children's disorders (Ollendick, King, & Chorpita, 2006; Weisz & Kazdin, 2010).

## Progressive Legislation

Just how far some countries have advanced in the humane and egalitarian treatment of children and youths is exemplified by the various laws enacted in the past few decades to protect the rights of those with special needs. For example, in the United States the Individuals with Disabilities Education Act (IDEA; Public Law 104–446) mandates:

- ▶ free and appropriate public education for any child with special needs in the least restrictive environment for that child;
- ▶ each child with special needs, regardless of age, must be assessed with culturally appropriate tests;
- ▶ each of these children must have an individualized education program (IEP) tailored to his or her needs, and must be re-assessed.

Similar legislation for protecting the rights of children with disabilities (and ensuring their access to appropriate resources) exists in Canada, the United Kingdom, and many other nations.

In 2007, the United Nations General Assembly adopted a new convention to protect the rights of persons with disabilities around the world. This convention represents an important shift from addressing the “special needs” of children to realizing their rights and removing the physical, linguistic, social, and cultural barriers that remain. Countries that ratify the convention agree to enact laws and other measures to improve disability rights, and also to abolish legislation, customs, and practices

that discriminate against persons with disabilities. These efforts signify a paradigm shift in attitudes toward and treatment of people with disabilities—from seeing persons with disabilities as objects of charity to considering them as individuals with human rights. Specific principles addressing the needs of children with disabilities are shown in A Closer Look 1.4.

## Section Summary

### Historical Views and Breakthroughs

- Early biological explanations for abnormal child behavior favored locating the cause of the problem within the individual, which sometimes led to simplistic or inaccurate beliefs about causes of the behavior.
- Early psychological approaches attempted to integrate basic knowledge of inborn processes with environmental conditions that shape behavior, emotions, and cognitions.
- Greater attention to the problems of children and youths in recent years has improved their quality of life and mental health. This improvement resulted from greater societal recognition of and sensitivity to children's special status and needs since the turn of the twentieth century.

## WHAT IS ABNORMAL BEHAVIOR IN CHILDREN AND ADOLESCENTS?

### ADAM LANZA

#### Early Troubles

“You could tell that he felt so uncomfortable about being put on the spot, I think that maybe he wasn’t given the right kind of attention or help. I think he went so unnoticed that people didn’t even stop to realize that maybe there’s actually something else going on here—that maybe he needs to be talking or getting some kind of mental help. In high school, no one really takes the time to look and think, ‘Why is he acting this way?’ ” (Halbfinger, 2012)

“It’s easy to understand why Adam Lanza felt at war with reality. Living was torture for the young boy—bright lights, loud sounds, even a touch could cause him to withdraw and become nonverbal. He became obsessed with violence to a degree that was abnormal even in today’s desensitized society. Violent pictures. Violent writings. Violent poetry. Hours spent playing violent video games and researching weapons and serial killers on the Internet. Adam Lanza created a world in which he was surrounded by death.”

### A CLOSER LOOK 1.4

#### UN Convention on the Rights of Persons with Disabilities (2007)

[Article 7, pertaining to children’s rights]:

1. States Parties shall take all necessary measures to ensure the full enjoyment by children with disabilities of all human rights and fundamental freedoms on an equal basis with other children.
2. In all actions concerning children with disabilities, the best interests of the child shall be a primary consideration.
3. States Parties shall ensure that children with disabilities have the right to express their views freely on all matters affecting them, their views being given due weight in accordance with their age and maturity, on an equal basis with other children, and to be provided with disability and age-appropriate assistance to realize that right.

Source: UN Convention on the Rights of Persons with Disabilities (2007). Office of the United Nations High Commissioner for Human Rights.



Lysaik (2013, December 6). Newtown massacre. Inside. Out. *Newsweek*. Available T: <http://mag.newsweek.com/2013/12/06/newtown-massacre-inside-out.html>



Kateleen Foy/Getty Images

Were there any clues in Adam Lanza's childhood that might suggest his violent behavior later on?

These comments were made by Olivia DeVivo reflecting on her time as a former student at Sandy Hook Elementary School with a boy named Adam Lanza. As she and other classmates noted, Lanza was considered a “loner,” an odd character who was very uncomfortable around others and made no effort to connect. Despite living in the same house, he communicated with his mother by e-mail. This example reveals how children's behavior can be difficult to classify into its causes, expression, and contributing factors. It also raises several key questions: First, how do we judge what is normal? A lot of kids are “loners” during adolescence and have difficulty connecting to peers. Second, when does an issue become a problem? In this instance, did anyone sense that Lanza's social isolation might lead to or be due to potentially serious social and mental problems? Finally, why are some children's abnormal patterns of behavior relatively continuous from early childhood through adolescence and into adulthood, whereas other children show more variable (discontinuous) patterns of development and adaptation? Was there anything about Lanza's behavior in childhood that indicated that he would kill innocent children and teachers at Sandy Hook Elementary years later?

Although these questions are central to defining and understanding abnormal child behavior and warrant thoughtful consideration, no simple, straightforward answers exist. (This should be familiar ground to those of you who are psychology majors.) More often than

not, childhood disorders are accompanied by various layers of abnormal behavior or development, ranging from the more visible and alarming (such as delinquent acts or physical assault), to the more subtle yet critical (such as teasing and peer rejection), to the more hidden and systemic (such as depression or parental rejection).

Moreover, mental health professionals, while attempting to understand children's weaknesses, too often unintentionally overlook their strengths. Yet, many children cope effectively in other areas of their lives, despite the limitations imposed by specific psychological disorders. An understanding of children's individual strengths and abilities can lead to ways to assist them in healthy adaptation. Also, some children may show less extreme forms of difficulty or only the early signs of an emerging problem rather than a full-blown disorder. Therefore, to judge what is abnormal, we need to be sensitive to each child's stage of development and consider each child's unique methods of coping and ways of compensating for difficulties (Achenbach, 2010).

Childhood disorders, like adult disorders, have commonly been viewed in terms of deviancies from normal, yet disagreement remains as to what constitutes normal and abnormal. While reading the following discussion, keep in mind that attempting to establish boundaries between abnormal and normal functioning is an arbitrary process at best, and current guidelines are constantly being reviewed for their accuracy, completeness, and usefulness.

## Defining Psychological Disorders

The study of abnormal behavior often makes us more sensitive to and wary of the ways used to describe the behavior of others. Whose standard of “normal” do we adopt, and who decides whether this arbitrary standard has been breached? Does abnormal behavior or performance in one area, such as mood, have implications for the whole person?

Although there are no easy answers to these questions, Georgina's real-life problems require an agreement on how to define a psychological (or mental) disorder. A **psychological disorder** traditionally has been defined as a pattern of behavioral, cognitive, emotional, or physical symptoms shown by an individual. Such a pattern is associated with one or more of the following three prominent features:

- ▶ The person shows some degree of distress, such as fear or sadness.
- ▶ His or her behavior indicates some degree of disability, such as impairment that substantially interferes with or limits activity in one or more important areas of functioning, including physical, emotional, cognitive, and behavioral areas.

- Such distress and disability increase the risk of further suffering or harm, such as death, pain, disability, or an important loss of freedom (American Psychiatric Association [APA], 2013).

To account for the fact that we sometimes show transitory signs of distress, disability, or risk under unusual circumstances (such as the loss of a loved one), this definition of a psychological disorder excludes circumstances in which such reactions are expected and appropriate as defined by one's cultural background. Furthermore, these three primary features of psychological disorders only describe what a person does or does not do in certain circumstances. The features do not attempt to attribute causes or reasons for abnormal behavior to the individual alone. On the contrary, understanding particular impairments should be balanced with recognizing individual and situational circumstances.

### **Labels Describe Behavior, Not People**

It is important to keep in mind that terms used to describe abnormal behavior do not describe people; they only describe patterns of behavior that may or may not occur in certain circumstances. We must be careful to avoid the common mistake of identifying the person with the disorder, as reflected in expressions such as “anxious child” or “autistic child.” The field of child and adult mental health is often challenged by **stigma**, which refers to a cluster of negative attitudes and beliefs that motivates fear, rejection, avoidance, and discrimination with respect to people with mental illnesses (Heflinger & Hinshaw, 2010). Stigma leads to prejudice and discrimination against others on the basis of race, ethnicity, disabilities, sexual orientation, body size, biological sex, language, and religious beliefs. Because of stigma, persons with mental disorders may also suffer from low self-esteem, isolation, and hopelessness, and they may become so embarrassed or ashamed that they conceal symptoms and fail to seek treatment (Puhl & Latner, 2007). Accordingly, throughout this text we separate the child from the disorder by using language such as “Ramon is a child with an anxiety disorder,” rather than “Ramon is an anxious child.” Children like Ramon have many other attributes that should not be overshadowed by global descriptive or negative labels.

In addition, the problems shown by some children may be the result of their attempts to adapt to abnormal or unusual circumstances. Children with chronic health problems must adapt to their medical regimens and to negative reactions from peers; children raised in abusive or neglectful environments must learn how to relate to others adaptively and to regulate emotions that may, at times, be overwhelming. Therefore, the primary purpose of using terms such as *disorder* and *abnormal behavior* for describing the psychological

status of children and adolescents is to aid clinicians and researchers in describing, organizing, and expressing the complex features often associated with various patterns of behavior. By no means do the terms imply a common cause, since the causes of abnormal behavior are almost always multifaceted and interactive.

This approach to defining abnormal behavior is similar to the one most often used to classify and diagnose mental disorders, according to the guidelines in the DSM-5 (APA, 2013). We use this approach in guiding the thinking and structure of this book because of its clinical and descriptive utility. Yet, despite advances in defining abnormality and vast improvements in the diagnostic and classification systems, ambiguity remains, especially in defining a particular child's maladaptive dysfunction (Rutter, 2010; Zachar & Kendler, 2007). Boundaries between what constitute normal and abnormal conditions or distinctions among different abnormal conditions are not easily drawn. At present, the DSM-5 approach has achieved some consensus supporting its value in facilitating greater communication and increased standardization of research and clinical knowledge concerning abnormal child psychology. We consider the DSM-5 and current alternatives to classification of childhood disorders in Chapter 4.

### **Competence**

Definitions of abnormal child behavior must take into account the child's **competence**—that is, the ability to successfully adapt in the environment. Developmental competence is reflected in the child's ability to use internal and external resources to achieve a successful adaptation (Masten, 2011). Of course, this prompts the question “What is successful?” Successful adaptation varies across culture and ethnicity, so it is important that the traditions, beliefs, languages, and value systems of a particular culture be taken into account when defining a child's competence. Similarly, some children face greater obstacles than others in their efforts to adapt to their environment. Minority children and families, as well as those with socioeconomic disadvantages, must cope with multiple forms of racism, prejudice, discrimination, oppression, and segregation, all of which significantly influence a child's adaptation and development (Children's Defense Fund, 2007).




Judgments of deviancy also require knowledge of a child's performance relative to that of same-age peers, as well as knowledge of the child's course of development and cultural context. In effect, the study of abnormal child psychology considers not only the degree of maladaptive behavior children show but also the extent to which they achieve normal developmental milestones. As with deviancy, the criteria for defining competence can be



very specific and narrow in focus, or they can be as plentiful and as broad as we wish (Masten & Wright, 2010).

How do we know whether a particular child is doing well, and how do we, as parents, teachers, or professionals, guide our expectations? **Developmental tasks**, which include broad domains of competence such as conduct and academic achievement, tell how children typically progress within each domain as they grow. Knowledge of the developmental tasks provides an important backdrop for considering a child or adolescent's developmental progress and impairments. Examples of several important developmental tasks are shown in Table 1.1.

**TABLE 1.1 | Examples of Developmental Tasks**

Age Period	Task
Infancy to preschool 	<ul style="list-style-type: none"> <li>• Attachment to caregiver(s)</li> <li>• Language</li> <li>• Differentiation of self from environment</li> </ul>
Middle childhood 	<ul style="list-style-type: none"> <li>• Self-control and compliance</li> <li>• School adjustment (attendance, appropriate conduct)</li> <li>• Academic achievement (e.g., learning to read, do arithmetic)</li> <li>• Getting along with peers (acceptance, making friends)</li> <li>• Rule-governed conduct (following rules of society for moral behavior and prosocial conduct)</li> </ul>
Adolescence 	<ul style="list-style-type: none"> <li>• Successful transition to secondary schooling</li> <li>• Academic achievement (learning skills needed for higher education or work)</li> <li>• Involvement in extracurricular activities (e.g., athletics, clubs)</li> <li>• Forming close friendships within and across gender</li> <li>• Forming a cohesive sense of self-identity</li> </ul>

Source: From *The Development of Competence in Favorable and Unfavorable Environments: Lessons from Research on Successful Children*, by A. S. Masten and J. D. Coatsworth, 1998, *American Psychologist*, 53, 205–220. Copyright © 1998 by the American Psychological Association. The APA is not responsible for the accuracy of this translation.

Photo Credits (top to bottom): ©Flashon Studio/Shutterstock.com; ©Gelpi JM/Shutterstock.com; ©OLJ Studio/Shutterstock.com.

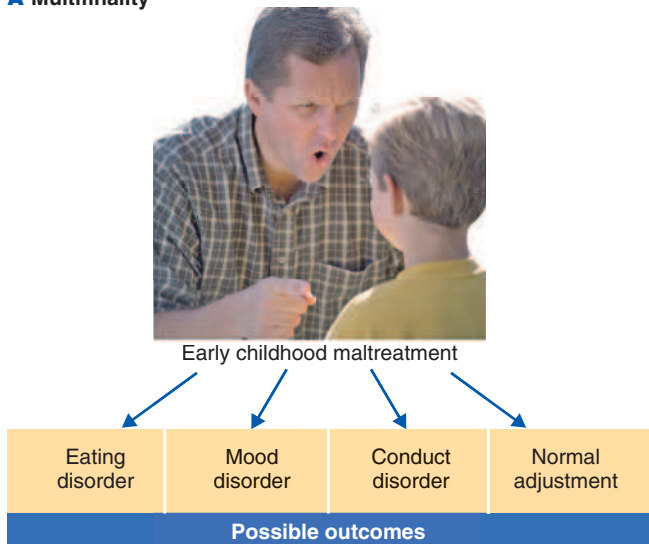
Conduct is one of the fundamental domains in Table 1.1; it indicates how well a person follows the rules of a particular society. From a young age, children are expected to begin controlling their behavior and to comply with their parents' requests. (This doesn't mean they always do so. . . .) By the time children enter school, they are expected to follow the rules for classroom conduct and to refrain from harming others. Then, by adolescence, they are expected to follow the rules set by school, home, and society without direct supervision. Similar developmental progression occurs in the self-domain, where children initially learn to differentiate themselves from the environment, and to gradually develop self-identity and autonomy. In the discussion of disorders in the chapters to follow, we attempt whenever possible to balance the information on abnormal behavior with the growing awareness of children's competencies and strengths.

## Developmental Pathways

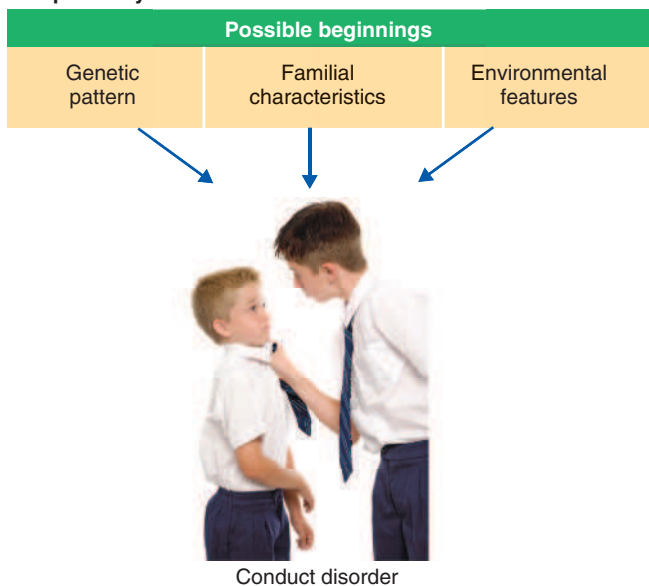
Why don't children with similar early experiences have similar problems later in life? Conversely, why do children and adolescents with the same disorder sometimes have very different early experiences or family characteristics? Another aspect of judging deviancy involves deciding when a concern or issue about a child's behavior starts to become a more recognizable pattern, especially since behavior fluctuates and changes considerably as a child develops. Therefore, in addition to distinguishing between normal and abnormal adaptation, we must consider the temporal relationship between emerging concerns in early childhood and the likelihood that they will lead to problems later on.

A **developmental pathway** refers to the sequence and timing of particular behaviors and possible relationships between behaviors over time. The concept allows us to visualize development as an active, dynamic process that can account for very different beginnings and outcomes (Pickles & Hill, 2006). It helps us to understand the course and nature of normal and abnormal development. Two examples of developmental pathways are shown in ● Figure 1.1. The child in Figure 1.1(a) has experienced maltreatment at a young age. Maltreatment can significantly alter the child's initial course of development, resulting in diverse and often unpredictable outcomes, such as eating, mood, or conduct disorders. This example illustrates **multifinality**, the concept that various outcomes may stem from similar beginnings (in this case, child maltreatment).

## A Multifinality



## B Equifinality



● **FIGURE 1.1** | (a) Multifinality: Similar early experiences lead to different outcomes; (b) Equifinality: Different factors lead to a similar outcome.

Photo Credits: (a) SW Productions/Jupiter Images; (b) ©iStockphoto.com/yellowsarah.

In contrast, other children might set out on their developmental journeys with very different strengths and weaknesses, but later have a similar disorder. As illustrated in Figure 1.1(b), genetic patterns, familial characteristics, and features of each child's environment represent different pathways leading to a similar outcome (conduct disorder). This example illustrates **equifinality**, the concept that similar outcomes stem from different early experiences and developmental

pathways. As we will learn in Chapter 9, children with conduct problems may have very diverse early experiences and risk factors but later show similar patterns of behavior. By looking at possible developmental pathways, we gain a better understanding of the ways in which children's problems may change or remain the same over time.

In summary, diversity in how children acquire psychological strengths and weaknesses is a hallmark of abnormal child psychology. Because no clear cause-and-effect relationship exists for each child and adolescent disorder, the following assumptions need to be kept firmly in mind (Hayden & Mash, 2014):

- ▶ There are many contributors to disordered outcomes in each individual.
- ▶ Contributors vary among individuals who have the disorder.
- ▶ Individuals with the same specific disorder express the features of their disturbance in different ways (e.g., some children with a conduct disorder are aggressive, whereas others may be destructive to property or engage in theft or deceit).
- ▶ The pathways leading to any particular disorder are numerous and interactive, as opposed to unidimensional and static.

## Section Summary

### What Is Abnormal Behavior in Children and Adolescents?

- Defining a psychological disorder involves agreement about particular patterns of behavioral, cognitive, and physical symptoms shown by an individual.
- Terms used to describe abnormal behavior are meant to define behavior, not to be used as labels to describe individuals.
- Defining abnormal behavior requires judgment concerning the degree to which a person's behavior is maladaptive or harmful as well as dysfunctional or impaired.
- Diversity in how children acquire psychological strengths and weaknesses is a hallmark of abnormal child psychology. The many contributors to abnormal behavior may vary within and between individuals with similar disorders.
- The study of psychological disorders involves attempts to describe the presenting problems and abilities, to understand contributing causes, and to treat or prevent them.
- Developmental pathways help to describe the course and nature of normal and abnormal development; multifinality means that various outcomes may stem from similar beginnings, whereas equifinality means that similar outcomes stem from different early experiences.

## RISK AND RESILIENCE

*I am convinced that, except in a few extraordinary cases, one form or another of an unhappy childhood is essential to the formation of exceptional gifts.*

—Thornton Wilder (1897–1975)

### RAOUL AND JESSE

#### Why the Differences?

Raoul and Jesse were childhood friends who grew up in the same rundown housing project, in a neighborhood plagued by drugs and crime. By the time they were 10 years old they were both familiar with domestic and community violence, and each lived with his mother and an older sibling after his parents divorced. The boys rarely saw their fathers, and when they did it usually wasn't a pleasant experience. By the time they reached grade 6 they were falling behind at school, and started to get into trouble with the police for staying out too late, hassling kids at school, and breaking into cars. Despite these problems and a struggle to keep up, Raoul finished high school and received 2 years of training in a local trade school. He is now 30 years old, works at a local factory, and lives with his wife and two children. Raoul sums up his life thus far as "dodging bullets to reach where I want to go," but he's happy to be living in a safe neighborhood and to have the hope of sending his children to college.

His friend Jesse never graduated from high school. He dropped out after being expelled for bringing a weapon to school, and has been in and out of prison several times. At age 30, Jesse drinks too much and has a poor record of finding and keeping a job. He has had several short-term relationships and fathered two children, but he rarely visits them and never married either mother. Jesse has lived in several locations over the years, mostly in his old, unchanged neighborhood. (Based on Zimmerman & Arunkumar, 1994)

These brief life histories illustrate two very different developmental paths that started out at the same place. Jesse's troubles might have been predicted based on present knowledge of abnormal development, but it is more difficult to explain how some children, like Raoul, seem to escape harm despite stress and adversity. Perhaps you are familiar with someone—from a novel, the entertainment field, or personal friendship—who seems to come out on top despite adversity and limited resources. How do you suppose individuals such as Jay Z (see Box 1.5) escape the odds and achieve their life goals?

## A CLOSER LOOK 1.5

### Overcoming the Odds

Sometimes we can learn a lot from the personal stories of individuals who are famous. In some cases, like that of Shawn Corey "Jay Z" Carter, the popular rap artist, music producer, fashion designer, publisher, entertainer, and basketball team and restaurant owner, the stories reveal early experiences of adversity or loss that were instrumental in setting them on a life course.

In Brooklyn during the 1980s, Carter grew up in a difficult living situation. His father left him, along with his mother, two sisters and a brother, when he was only 12. Without a father figure and role model in his life, the young rapper turned to the streets of Brooklyn. A friend showed him how to make money in the drug trade and other activities. As Jay Z remembers, "No one hired a skywriter and announced crack's arrival. But when it landed in your hood, it was a total takeover." But Carter had a way to escape this new reality. When his mother gave him a boom box for Christmas, his life changed. The artist began rapping in the streets of Brooklyn, and a local DJ convinced him to stop selling crack and focus on his career. In 1996, at the age of 26, he came out with his debut album. By 1998, his album *Vol. 2... Hard Knock Life* had won him a Grammy award.

Throughout his career, Carter channeled his early experiences into a driven ambition to succeed both financially and socially. He has advocated for rights for African Americans and rappers, negating the premise that because you are involved with rap culture means that you are a criminal. He has helped bring more black voters to the polls with his free concerts and his speech on behalf of President Obama. His story shows that with resilience one can adapt and change life circumstances for the better.

Source: Amy Legate-Wolfe, 2013 (personal communication).



Shawn Corey "Jay Z" Carter's life exemplifies resiliency.

The answer to this complicated question is coming into focus, thanks to studies that look at risk as well as protective factors affecting children's courses of






development (Compas & Andreotti, 2013). A **risk factor** is a variable that precedes a negative outcome of interest and increases the chances that the outcome will occur. In contrast, a **protective factor** is a personal or situational variable that reduces the chances for a child to develop a disorder. As you might suspect, children like Raoul and Jesse, who face many known risk factors such as community violence and parental divorce, are vulnerable to abnormal development. Acute, stressful situations as well as chronic adversity put children’s successful development at risk. Chronic poverty, serious caregiving deficits, parental mental illness, divorce, homelessness, and racial prejudice are known risk factors that increase children’s vulnerability to psychopathology—especially in the absence of compensatory strengths and resources (Evans, Li, & Whipple, 2013; Kim-Cohen & Gold, 2009).

Yet, like Raoul, some vulnerable children do not develop problems later. Instead, they seem resilient despite their stress-filled environments, managing to achieve positive outcomes despite being at significant risk for psychopathology. Children who survive risky environments by using their strong self-confidence, coping skills, and abilities to avoid risk situations may be considered resilient—they seem able to fight off or recover from their misfortune (Luthar, 2006). These children are also most likely to show sustained competence while under stress, or to rebound to a previously healthy level of competence following traumatic or stressful experiences (Kim-Cohen & Gold, 2009). **Resilience** is not a universal, categorical, or fixed attribute of the child; rather, it varies according to the type of stress, its context, and similar factors (Rutter, 2012). Individual children may be resilient with respect to some specific stressors but not others, and resilience may vary over time and across situations. Resilience is seen in children across cultures, despite the extraordinary circumstances that some may face (Kirmayer et al., 2011; Ungar, 2010).

The concept of resilience reminds us that a direct causal pathway rarely leads to a particular outcome. Ongoing interactions exist between protective and risk factors within the child, between the child and his or her surroundings, and among risk factors themselves. Protective factors are personal or situational variables that reduce the chances for a child to develop a disorder. Risk factors do the exact opposite—they increase the child’s likelihood of developing a problem. Risk factors and protective factors should be thought of as processes rather than absolutes, since the same event or condition can function as either type of factor, depending on the overall context in which it occurs(Rutter, 2007a). For example, placing young children with another family may serve to protect them if they were being severely mistreated. However, for

some children out-of-home placement could increase their vulnerability if it creates more stress due to being removed from their mother or father. Throughout each chapter, we offer similar examples of children’s vulnerability and resilience in relation to particular circumstances and disorders.

● Figure 1.2 illustrates some of the better-known characteristics of children and adolescents who display resilience, which are sometimes overlooked in attempts to explain abnormal development. These characteristics constitute a protective triad of resources and health-promoting events: the strengths of the individual, the family, and the school and community (Luthar, 2006). Protective factors vary tremendously in magnitude and scope, and not all three resources are necessary. For some children, merely the availability of a supportive grandparent or teacher can effectively change the course and direction of their development. Other children may need additional or different protective factors, such as a better learning environment, community safety, or sufficient family resources.

Source	Characteristics
<div>Individual</div> 	<div>Good intellectual functioning</div> <div>Appealing, sociable, easygoing disposition</div> <div>Self-efficacy, self-confidence, high self-esteem</div> <div>Talents</div> <div>Faith</div>
<div>Family</div> 	<div>Close relationship to caring parent figure</div> <div>Authoritative parenting, warmth, structure, high expectations</div> <div>Socioeconomic advantages</div> <div>Connections to extended supportive family networks</div>
<div>School and community</div> 	<div>Adults outside the family who take an interest in promoting the child's welfare</div> <div>Connections to social organizations</div> <div>Attendance at effective schools</div>

● **FIGURE 1.2** | Characteristics of children and adolescents who display resilience in face of adversity.

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## Section Summary

### Risk and Resilience

- Children's normal development may be put in jeopardy because of risk factors, which can include acute, stressful situations and chronic adversity.
- Some children seem to be more resilient in the face of risk factors. Resiliency is related to strong self-confidence, coping skills, and the ability to avoid risk situations, as well as the ability to fight off or recover from misfortune.
- Children's resilience is connected to a protective triad of resources and health-promoting events that include individual opportunities, close family ties, and opportunities for individual and family support from community resources.

## THE SIGNIFICANCE OF MENTAL HEALTH PROBLEMS AMONG CHILDREN AND YOUTHS

*It's up to each of us to help create a better world for our children.*

—Dr. Benjamin Spock

Until very recently, children's mental health problems were the domain of folklore and unsubstantiated theories in both the popular and scientific literatures. Only a few generations ago, in the mid-nineteenth century, overstimulation in schools was seen as a cause of insanity (Makari, 1993), and only one generation ago, in the mid-twentieth century, autism was believed to be caused by inadequate, uncaring parents (Bettelheim, 1967).

We now recognize that mental health problems of children and adolescents are a frequently occurring and significant societal concern worldwide. For example, by 2020 behavioral health disorders will surpass all physical diseases as a major cause of disability throughout the world (Substance Abuse and Mental Health Services Administration [SAMHSA], 2011; World Health Organization [WHO], 2007). Perhaps most telling of all is the mounting evidence that "*many, if not most, lifetime psychiatric disorders will first appear in childhood or adolescence*" (Costello, Egger, & Angold, 2005a, p. 972, italics added; Kessler et al., 2009).

Surveys conducted in North America and elsewhere find that about one child in eight has a mental health problem that significantly impairs functioning (Costello et al., 2005a), a finding that extends even to infants and toddlers (Skovgaard et al., 2007). Many other children have emerging problems that place them at risk for later development of a psychological disorder. As surprising as it may sound, recent longitudinal studies have found that by their 21st birthday, three out of five young



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In the United States, the richest country in the world, nearly one in four children (23.1%) live in poverty, ranking the United States second out of 35 developed countries in terms of child poverty (UNICEF Innocenti Research Centre, 2012).

adults meet criteria for a well-specified psychiatric disorder (Copeland et al., 2011). Some children have difficulties adapting to school or to family circumstances, so they behave in ways that are developmentally or situationally inappropriate. Others show more pronounced patterns of poor development and maladjustment that suggest one or more specific disorders of childhood or adolescence. The process of deciding which problems merit professional attention and which ones might be outgrown involves a good understanding of both normal and abnormal child development and behavior.

Despite the magnitude of children's mental health needs today, the youngest one-fourth of the population (those under age 18) have very few treatment options, and the options that are available are woefully underfunded (Weisz & Kazdin, 2010). Sadly, the majority of children and youths needing mental health services do not receive them, due largely to poor understanding of mental disorders and limited access to intervention (Mark et al., 2008; McEwan, Waddell, & Barker, 2007). The demand for children's mental health services is expected to double over the next decade because the number of child and adolescent mental health professionals is not expected to increase at the required rate (Health Resources and Services Administration, 2010). A career in children's mental health, anyone?

The chapters that follow explain that a significant proportion of children do not grow out of their childhood difficulties, although the ways in which children express difficulties are likely to change in both form and severity over time. Children's developmental impairments may have a lasting negative impact on later family life, occupations, and social adjustment, even when they no longer have the disorder.



## The Changing Picture of Children's Mental Health

If all children and adolescents with known psychological disorders could be captured in a photograph, the current picture would be much clearer than that of only a generation ago. The improved focus and detail are the result of efforts to increase recognition and assessment of children's psychological disorders. In the past, children with various mental health and educational needs were too often described in global terms such as *maladjusted*, because assessment devices were not sensitive to different syndromes and diagnostic clusters of symptoms (Achenbach & Rescorla, 2007). Today, we have a better ability to distinguish among the various disorders. This ability has given rise to increased and earlier recognition of previously poorly understood or undetected problems—learning disorders, depression, teen suicide, eating disorders, conduct disorders, and problems stemming from chronic health conditions and from abuse and neglect.

Another difference in today's portrait would be the group's composition. Younger children (Skovgaard et al., 2007) and teens (Wolfe & Mash, 2006) would appear more often in the photo, reflecting greater awareness of their unique mental health issues. Specific communication and learning disorders, for example, have only recently been recognized as significant concerns among preschoolers and young school-age children. Similarly, emotional problems, such as anxiety and depression, which increase dramatically during adolescence (Rudolph, Hammen, & Daley, 2006), were previously overlooked because the symptoms are often less visible or disturbing to others than are the symptoms of behavior or learning problems.

What would not have changed in our photo is the proportion of children who are receiving proper services. Fewer than 10% of children with mental health problems receive proper services to address impairments related to personal, family, or situational factors (Costello et al., 2005a). Limited and fragmented resources mean that children do not receive appropriate

mental health services at the appropriate time. Fortunately, this situation is beginning to change, with greater attention paid to evidence-based prevention and treatment programs for many childhood disorders and calls for more integrated services for children within school systems (Kirby & Keon, 2006; Weisz & Kazdin, 2010).

The children and teens in the picture would not reflect a random cross section of all children because mental health problems are unevenly distributed. Those disproportionately afflicted with mental health problems are:

- ▶ Children from disadvantaged families and neighborhoods (Brooks-Gunn, Schneider, & Waldfogel, 2013)
- ▶ Children from abusive or neglectful families (Cicchetti et al., 2010; Wekerle et al., 2006)
- ▶ Children receiving inadequate child care (Pollak et al., 2010)
- ▶ Children born with very low birth weight due to maternal smoking, diet, or abuse of alcohol and drugs (D'Onofrio et al., 2010)
- ▶ Children born to parents with mental illness or substance abuse problems (Davis et al., 2011; Mellin, 2010)

Also, the children in the picture could not easily be grouped according to these categories because children often face combinations of environmental stressors and psychosocial deprivations. Such children are especially at risk of having their healthy development compromised to the degree that they are said to show abnormal behavior or to suffer from a mental disorder.

## WHAT AFFECTS RATES AND EXPRESSION OF MENTAL DISORDERS? A LOOK AT SOME KEY FACTORS

New pressures and social changes may place children at increasing risk for the development of disorders at younger ages (Obradovic et al., 2010). Many stressors today are quite different from those faced by our parents and grandparents. Some have been around for generations: chronic poverty, inequality, family breakup, single parenting, and so on. Others are more recent or are now more visible: homelessness, adjustment problems of children in immigrant families, inadequate child care available to working parents, and conditions associated with the impact of prematurity, parental HIV, and cocaine or alcohol abuse on children's growth and development (Chapman, Dube, & Anda, 2007). Even welcome medical advances can have a negative effect. Higher rates of fetal survival have contributed to a greater number of children with behavior and learning difficulties who require specialized services at a younger age.



Surveys estimate that about 1 child in 8 has a mental health problem that interferes with his or her development, and 1 in 10 has a specific psychological disorder.

It is important to remember that the manner in which one's circumstances affect the course (e.g., progression) of a disorder should be distinguished from how they may initially contribute to the problem. That is, environmental stressors, such as poverty, child abuse, or lack of safety, may act as nonspecific stressors that bring about poor adaptation or even the onset of a disorder in some vulnerable children. In contrast, these same environmental influences may affect the course of the disorder in other children by affecting the extent to which the child's problems are attenuated or exacerbated (Schreier & Chen, 2013; Williams & Steinberg, 2011). Examples of major factors in the development and expression of child psychopathology are noted next, and they resurface throughout our subsequent discussions of each disorder.

## Poverty and Socioeconomic Disadvantage

*The most dangerous place for a child to try to grow up in America is at the intersection of race and poverty.*

—Children's Defense Fund (2007)

If you looked beyond the faces of the children in our hypothetical photo, you would note that in many cases, the background and circumstances of children and youths with mental health problems provide obvious clues to their origins. Some of the most telling clues are the experiences of poverty, disadvantage, and violence faced by many, which can have a cumulative effect on mental health.

Childhood poverty is a daily reality for about 1 in 4 children in the United States (U.S. Census Bureau, 2011a) and 1 in 7 in Canada (Statistics Canada, 2011); it is especially pronounced among Native American/First Nations and African American children (Spicer & Sarche, 2006). Growing up with poverty has a substantial effect on the well-being of children and adolescents, especially in terms of impairments in learning ability and school achievement. Moreover, low income is tied to many other forms of disadvantage: less education, low-paying jobs, inadequate health care, single-parent status, limited resources, poor nutrition, and greater exposure to violence. Any one disadvantage can impair children's developmental progress significantly (Razza, Martin, & Brooks-Gunn, 2010).

The impact of childhood poverty is telling. Children from poor and disadvantaged families suffer more conduct disorders, chronic illness, school problems, emotional disorders, and cognitive/learning problems than children who are not poor (McMahon & Luthar, 2007). These impairments may be due to the pronounced effect on prefrontal cortex development stemming from the social inequalities of chronic poverty (Kishiyama et al., 2009; Luby et al., 2013). Economic



Eighty-eight percent of homeless families in the United States are headed by women.

deprivation alone is not responsible for these higher rates because many children do succeed under harsh circumstances. Nevertheless, the greater the degree of inequality, powerlessness, and lack of control over their lives, the more children's physical and mental health are undermined (Aber, Jones, & Raver, 2007).

Poverty has a significant, yet indirect, effect on children's adjustment, most likely because of its association with negative influences—particularly harsh, inconsistent parenting and elevated exposure to acute and chronic stressors—that define the day-to-day experiences of children in poverty. For example, youths who live in inner-city areas and witness community violence are most likely to develop post-traumatic stress disorder (Kiser, 2007) as well as cognitive delays and impairments that affect both learning and mental health (Farah et al., 2006).

## Sex Differences

We have known for some time that boys and girls express their problems in different ways (Zahn-Waxler et al., 2006). For example, hyperactivity, autism, childhood

disruptive behavior disorders, and learning and communication disorders are more common in boys than in girls; the opposite is true for most anxiety disorders, adolescent depression, and eating disorders. What we don't understand is whether these differences are caused by definitions, reporting biases (the more "disturbing" problems are most likely to come to the attention of mental health agencies), or differences in the expression of the disorder (Martel, 2013). For example, aggressive behavior may be expressed more directly by boys (fighting) and more indirectly by girls (spreading rumors). Although mental health problems for girls have been understudied, this situation is changing; therefore, we consider the expression of problems for boys and girls in each chapter.

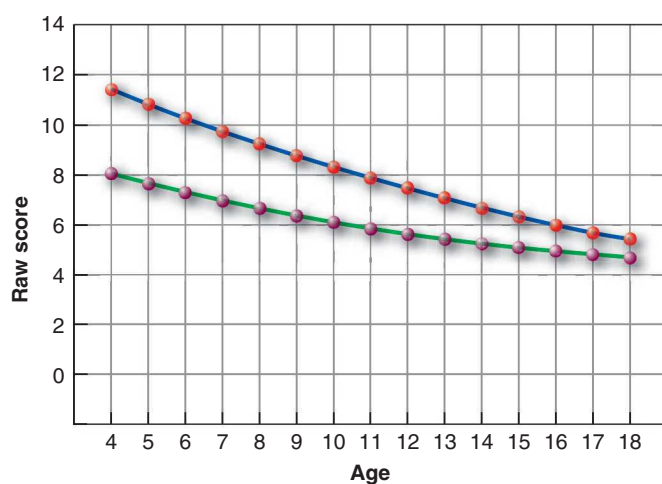
Sex differences in problem behaviors are negligible in children under the age of 3 but increase with age (Achenbach & Rescorla, 2006). Boys show higher rates of early-onset disorders that involve some form of neurodevelopmental impairment, and girls show more emotional disorders, with a peak age of onset in adolescence. For example, boys generally have higher rates of reading disorders, autism spectrum disorders, attention-deficit/hyperactivity disorder (ADHD), and early-onset persistent conduct problems, whereas girls have higher rates of depression and eating disorders (Copeland et al., 2011; Rutter et al., 2004).

● Figure 1.3 depicts the normal developmental trajectories for girls and boys across the two major dimensions of internalizing and externalizing behaviors.

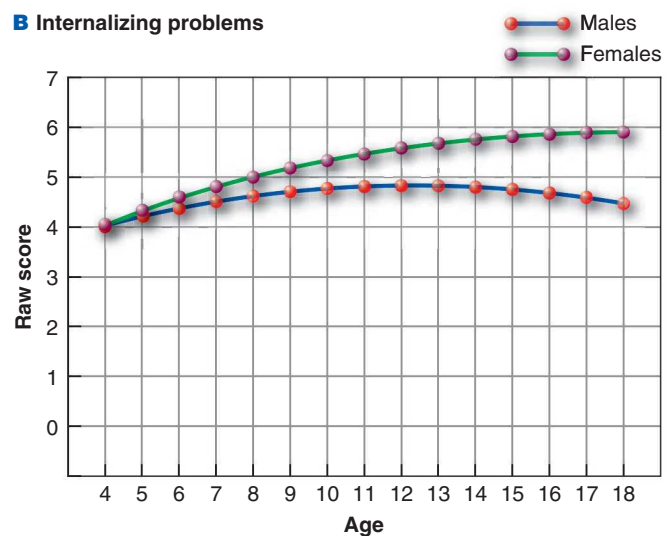
**Internalizing problems** include anxiety, depression, somatic symptoms, and withdrawn behavior; **externalizing problems** encompass more acting-out behaviors, such as aggression and delinquent behavior. You'll notice from Figure 1.3(A) that externalizing problems for boys start out higher than for girls in preschool and early elementary years, and that these problems decrease gradually for both boys and girls until the rates almost converge by age 18. The opposite pattern emerges for internalizing problems. Parents report similar rates of internalizing problems for boys and girls in early childhood, but girls outpace boys in these problems over time (Bongers et al., 2003). These developmental trajectories of problem behaviors provide a useful basis for identifying deviations from the normal course, although these overall trends need to be considered in relation to a number of additional factors that we discuss throughout the text.

Finally, it is interesting to note that the types of child-rearing environments predicting resilience in the face of adversity also differ for boys and girls. Resilience in boys is associated with households in which there is a male role model (such as a father, grandfather, or older brother); structure; rules; and some encouragement of emotional expressiveness. In contrast, girls who display resilience come from households that combine risk taking and independence with support from a female caregiver (such as a mother, grandmother, or older sister; Werner, 2005).

#### A Externalizing problems



#### B Internalizing problems



● **FIGURE 1.3** | Normative developmental trajectories of externalizing problems (A) and internalizing problems (B) from the child behavior checklist. Ages are shown on the x axis. The y axis shows the raw scores (higher score means more problems).

Adapted from "The normative development of child and adolescent problem behavior," by Bongers, I. L., Koot, H. M., van der Ende, J., & Verhulst, F. C., 2003, *Journal of Abnormal Psychology*, 112, 179–192. Copyright © 2003 by the American Psychological Association. Reprinted with permission. The APA is not responsible for the accuracy of this translation.



## Race and Ethnicity

*Physical variations in the human species have no meaning except the social ones that humans put on them.*

—American Anthropological Association, 1998

People who are from racial or ethnic minority groups comprise a substantial and vibrant segment of many countries, enriching each society with many unique strengths, cultural traditions, and important contributions. In the United States, the number of people who are ethnic minorities is growing rapidly—by 2050, the nation's population of children is expected to be 62% minority, up from 44% today (U.S. Census Bureau, 2011b).

As reflected in the quote above, the majority of cultural anthropologists today believe that race is a socially constructed concept, not a biological one (Crisp & Turner, 2011; Sternberg, Grigorenko, & Kidd, 2005). This helps explain why very few emotional and behavioral disorders of childhood occur at different rates for different racial groups. Children from certain ethnic and racial groups in the United States are overrepresented in rates of some disorders, such as substance abuse, delinquency, and teen suicide (Nguyen et al., 2007). However, once the effects of socioeconomic status (SES), sex, age, and referral status are controlled for (i.e., the unique contributions of these factors are removed or accounted for), few differences in the rate of children's psychological disorders emerge in relation to race or ethnicity (Roberts, Roberts, & Xing, 2006). Some minority groups, in fact, show less psychopathology after controlling for SES (Nguyen et al., 2007; Roberts et al., 2006).

Even though rates of problems are similar, significant barriers remain in access to, and quality and outcomes of, care for minority children (Alegria, Vallas, & Pumariega, 2010). As a result, American Indians, Alaska Natives, African Americans, Asian Americans, Pacific Islanders, and Hispanic Americans bear a disproportionately high burden of disability from mental disorders (Agency for Healthcare Research and Quality, 2011). Specifically, the majority culture has neglected to incorporate respect for or understanding of the histories, traditions, beliefs, languages, and value systems of culturally diverse groups. Misunderstanding and misinterpreting behaviors have led to tragic consequences, including inappropriately placing minorities in the criminal and juvenile justice systems (Pumariega, Rothe, Song, & Lu, 2010).

Minority children and youths face multiple disadvantages, such as poverty and exclusion from society's benefits. This exclusion is often referred to as

marginalization, and it can result in a sense of alienation, loss of social cohesion, and rejection of the norms of the larger society. Resisting the combined effects of poverty and marginalization takes unusual personal strength and family support. Since children from ethnic and racial minority groups are overrepresented in low-SES groups, we must interpret with caution the relationships among SES, ethnicity, and behavior problems that often emerge while discussing childhood disorders. We also have to keep in mind that, despite the growing ethnic diversity of the North American population, ethnic representation in research studies and the study of ethnicity-related issues receive relatively little attention in studies of child psychopathology and treatment (Coll, Akerman, & Cicchetti, 2000; Schwartz et al., 2010).

As was the case for SES and sex differences, global comparisons of the prevalence of different types of problems for different ethnic groups are not likely to be very revealing. On the other hand, investigations into the processes affecting the form, associated factors, and outcomes of different disorders for various ethnic groups hold promise for increasing our understanding of the relationship between ethnicity and abnormal child behavior.

## Cultural Issues

The values, beliefs, and practices that characterize a particular ethnocultural group contribute to the development and expression of children's disorders, and affect how people and institutions react to a child's problem (Rescorla et al., 2011). Because the meaning of children's social behavior is influenced by cultural beliefs and values, it is not surprising that children express their problems somewhat differently across cultures. For example, shyness and oversensitivity in children have been found to be associated with peer rejection and social maladjustment in Western cultures, but to be associated with leadership, school competence, and academic achievement in Chinese children in Shanghai (Chen, Rubin, & Li, 1995; Rubin et al., 2006).

Because of cultural influences, it is important that research on abnormal child behavior not be generalized from one culture to another unless there is support for doing so. Some underlying processes, such as regulating emotion and its relationship to social competence, may be similar across diverse cultures (Eisenberg, Smith, & Spinrad, 2011). Similarly, some disorders, particularly those with a strong neurobiological basis (e.g., ADHD, autism spectrum disorder), may be less susceptible to cultural influences. Nonetheless, social and cultural beliefs and values are likely to influence the meaning

given to these behaviors, the ways in which they are responded to, their forms of expression, and their outcomes (APA, 2013). Few studies have compared the attitudes, behaviors, and biological and psychological processes of children with mental disorders across different cultures. However, in this text, we will indicate where this situation is beginning to change.

## Child Maltreatment and Non-Accidental Trauma

Children and adolescents are being neglected and abused at an alarming rate worldwide (WHO, 2010). Each year nearly 1 million verified cases of child abuse and neglect (a rate of 10 per 1,000 children) occur in the United States (U.S. Department of Health and Human Services, 2010), and more than 80,000 in Canada (Public Health Agency of Canada, 2010). U.S. phone surveys of children and youths between 10 and 16 years old estimate that more than one-third of U.S. children (6 million) in that age bracket experience physical and/or sexual assaults during these ages, not only by family members but also by persons they may know from their communities and schools (Finkelhor, 2011).

These related forms of non-accidental trauma—being the victim of violence at school or being exposed to violent acts in their homes or neighborhoods—lead to significant mental health problems in children and youths.

In a telephone survey of more than 4,000 youths between 12 and 17 years of age, 16% of boys and 19% of girls met the criteria for either post-traumatic stress disorder, major depressive episode, or substance abuse/dependence in relation to acts of violence (Kilpatrick et al., 2003). Tragically, these acts of abuse and trauma are estimated to cost \$124 billion per year in the United States as a result of direct and indirect harm over the lifetime of these children (Fang, Brown, Florence, & Mercy, 2012). Because of the increasing significance of these acts, more attention is being given to developing ways to prevent maltreatment, and help youngsters exposed to maltreatment and trauma. We devote discussion to this concern in Chapter 12: Trauma- and Stressor-Related Disorders.

## Special Issues Concerning Adolescents and Sexual Minority Youths

Early to mid-adolescence is a particularly important transitional period for healthy versus problematic adjustment (Cicchetti & Rogosch, 2002; Wolfe & Mash, 2006). Substance use, risky sexual behavior, violence, accidental injuries, and mental health problems are

only a few of the major issues that make adolescence a particularly vulnerable period. Disturbingly, mortality rates more than triple between late childhood and early adulthood, primarily as the result of risk-taking behaviors (Centers for Disease Control and Prevention, 2010).

Late childhood and early adolescence is also a time during which youths who are lesbian, gay, bisexual, and transgendered (LGBT) face multiple challenges that can affect their health and well-being. Growing up in a society that is predominantly heterosexual—and largely biased against other sexual identities—makes adolescence a particularly difficult time for those who are not heterosexual. According to several large surveys of LGBT youths in middle and high schools, they are more likely to be victimized by their peers as well as by family members, and they report more bullying, teasing, harassment, and physical assault than other students (Kosciw, Greytak, & Diaz, 2009). For example, 81% report experiencing verbal abuse related to being LGBT, 38% have been threatened with physical attacks, 22% have had objects thrown at them, 15% have been physically assaulted, and 16% have been sexually assaulted (D'Augelli, 2006). Given the stigma and prejudice that exist in many parts of society, it is not surprising that young people who are LGBT have higher rates of mental health problems, including depression and suicidal behavior, substance abuse, and risky sexual behavior, as compared with their heterosexual counterparts (Coker, Austin, & Schuster, 2010).

In response to mounting concerns, the special needs and problems of adolescents are receiving greater attention, especially because serious consequences are preventable. For example, various health organizations and government agencies implemented campaigns in schools, community programs, and health-care settings to reduce adolescent risk taking and experimentation (Beardslee, Chien, & Bell, 2011). Because the problems of adolescents have been neglected as compared with those of children, throughout this text we will look at the expression of each disorder in both childhood and adolescence as much as possible.

## Lifespan Implications

Over the long term, the impact of children's mental health problems is most severe when the problems continue untreated for months or years. The developmental tasks of childhood are challenging enough without the added burden of emotional or behavioral disturbances that interfere with the progress and course of development. About 20% of the children with the most chronic and serious disorders face



sizable difficulties throughout their lives (Costello & Angold, 2006). They are least likely to finish school and most likely to have social problems or psychiatric disorders that affect many aspects of their lives throughout adulthood.

The lifelong consequences associated with child psychopathology are exceedingly costly in terms of economic impact and human suffering. The costs are enormous with respect to demands on community resources such as health, education, mental health, and criminal justice systems; loss in productivity; the need for repeated and long-term interventions; and the human suffering of both the afflicted children and the family and community members they encounter. Fortunately, children and youths can overcome major impediments when circumstances and opportunities promote healthy adaptation and competence.

The growing recognition of the concerns presented in this chapter has led to a number of major initiatives to achieve the goals of prevention and help. These initiatives are summarized in a number of government reports that include recommendations as to how these goals can be achieved. Many of these important reports are available on the Internet (see A Closer Look 1.6), and we recommend that you familiarize yourself with these developments.

## Section Summary

### What Affects the Rates and Expression of Mental Disorders? A Look at Some Key Factors

- Clear understanding of both normal and abnormal child development and behavior is needed to decide which problems are likely to continue and which might be outgrown.
- About one child in eight has a mental health problem that significantly impairs functioning.
- A significant proportion of children do not grow out of their childhood difficulties, although the ways in which these difficulties are expressed are likely to change in both form and severity over time.
- Mental health problems are unevenly distributed. Children who experience more social and economic disadvantage or inequality and children exposed to more violent, inadequate, or toxic environments are disproportionately afflicted with mental health problems.
- A child's biological sex, ethnic background, and cultural surroundings are all important contributors to the manner in which his or her behavioral and emotional problems are expressed to and recognized by others.
- Many childhood problems can have lifelong consequences for the child and for society.

## A CLOSER LOOK 1.6

### Current Reports on Mental Health Issues Pertaining to Children and Youths

Since release of the U.S. Surgeon General's Report on Mental Health in 1999, there have been many important national and international initiatives and reports about understanding and helping children and adolescents with mental health problems. The wonders of the information age provide free access to this wealth of information (as if reading your textbook were not enough!). Below is a list of some (but by no means all) of the more important documents that are shaping the field. Your Psychology CourseMate provides live links to most of these documents.

#### Mental Health

U.S. Public Health Service Office of the Surgeon General. (1999). *Mental health: A report of the Surgeon General*. Rockville, MD: Department of Health and Human Services, U.S. Public Health Service.

#### Development and Psychopathology

Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academies Press.

#### Children's Rights

UNICEF (2013): Convention on the Rights of the Child. Protecting and realizing children's rights. Available at: [http://www.unicef.org/crc/index\\_protecting.html](http://www.unicef.org/crc/index_protecting.html).

#### Culture, Race, and Ethnicity

U.S. Public Health Service Office of the Surgeon General. (2001). *Mental health: Culture, race, and ethnicity: A supplement to Mental health: A report of the Surgeon General*. Rockville, MD: Department of Health and Human Services, U.S. Public Health Service.

#### Children's Mental Health

Report of *Healthy Development: A Summit on Young Children's Mental Health* (2009). Partnering with communication scientists, collaborating across disciplines, and leveraging impact to promote children's mental health. Washington, DC: Society for Research in Child Development. Available at: [www.apa.org/pi/families/summit-report.pdf](http://www.apa.org/pi/families/summit-report.pdf)

(continues)

(continued)

#### **Research on Children's Mental Health**

Children's Health Policy Centre: Children's Mental Health Research Quarterly. Available at: <http://childhealthpolicy.ca/the-quarterly>

#### **Mental Health: International Perspective**

World Health Organization. (2007). *The world health report 2007*. Geneva: World Health Organization.

#### **Transforming Mental Health Care**

*Transforming mental health care in America*. Rockville, MD: Substance Abuse and Mental Health Services Administration (SAMHSA). Available at: [http://www.samhsa.gov/federalactionagenda/NFC\\_TOC.aspx](http://www.samhsa.gov/federalactionagenda/NFC_TOC.aspx).

*Out of the Shadows At Last: Transforming Mental Health, Mental Illness and Addiction Services in Canada*. The Standing Senate Committee on Social Affairs, Science and Technology. Available at: <http://www.parl.gc.ca/Content/SEN/Committee/391/soci/rep/rep02may06-e.htm>

#### **Substance Abuse**

Substance Abuse and Mental Health Services Administration. (2011). *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings* (NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD. Available at: <http://oas.samhsa.gov/nsduhlatest.htm>

#### **Suicide Prevention**

U.S. Department of Health and Human Services. *Suicide Prevention: Resources and Publications*. Substance Abuse and Mental Health Services Administration. Available at: <http://www.samhsa.gov/prevention/suicide.aspx>

*National Strategy for Suicide Prevention: Goals and Objectives for Action*. A Report of the U.S. Surgeon General and of the National Action Alliance for Suicide Prevention (2012). Available at: <http://www.surgeongeneral.gov/library/reports/national-strategy-suicide-prevention/index.html>

#### **Youth Violence**

U.S. Public Health Service Office of the Surgeon General. (2001). *Youth violence: A report of the Surgeon General*. Rockville, MD: Department of Health and Human Services, U.S. Public Health Service.

Centers for Disease Control and Prevention. *Injury Prevention and Control: Youth Violence*. Available at: <http://www.cdc.gov/ViolencePrevention/youthviolence/index.html>

#### **Reducing Health Risks**

World Health Organization. (2012, September). *What are the key health dangers for children?* Available at: <http://www.who.int/features/qa/13/en/index.html>

#### **Violence and Health**

World Health Organization. (2002). *World report on violence and health*. Geneva: World Health Organization. Also see: *WHO Violence and Injury Prevention*. Available at: [http://www.who.int/violence\\_injury\\_prevention/violence/en](http://www.who.int/violence_injury_prevention/violence/en)

#### **Sexual Minority Youths**

Centers for Disease Control and Prevention. (2011, June). *MMWR: Sexual Identity, Sex of Sexual Contacts, and Health-Risk Behaviors Among Students in Grades 9–12—Youth Risk Behavior Surveillance, Selected Sites, United States, 2001–2009*. Available at: <http://www.cdc.gov/healthyyouth/disparities/smy.htm>

## **LOOKING AHEAD**

The significance of children's mental health problems emerges over and over again throughout this text, as we consider the many different individual, family, social, and cultural influences that define abnormal child psychology. Because children cannot advocate on their own behalf, and because their mental health needs and developmental issues differ markedly from those of adults, it is important that we keep these concerns in mind. Moreover, children's problems don't come in neat packages. Many disorders discussed in the text overlap with other disorders in terms of symptoms, characteristics, and treatment needs. Once again, the importance of viewing the whole child in relation to his or her difficulties emerges as the best strategy in understanding abnormal child and adolescent psychology,

using diagnostic criteria as guideposts rather than as firm rules.

The next three chapters discuss theories, causes, research, and clinical issues. Chapter 2 looks at current ways of viewing child and adolescent disorders. It includes the exciting advances made possible by new discoveries about the brain, and notes how these discoveries have become more integrated with knowledge of the biological and psychological processes affecting children's development and disorders. Chapter 3 reviews research methods with children, youths, and families that help us understand features, causes, course, and treatment methods. Chapter 4 discusses clinical issues pertaining to children's mental health, especially current approaches to assessment, diagnosis, and treatment. Because psychological interventions vary considerably in relation to each

disorder, we will describe the most recent and effective treatments for specific disorders in the context of the disorders to which they apply. This allows information on treatments and their effectiveness to be woven into our knowledge about the description and causes of the disorder.

Chapters 5 through 14 examine specific disorders and conditions affecting children and adolescents. We organize these disorders and conditions into three general categories:

- ▶ *Neurodevelopmental disorders.* Chapters 5 through 8 examine a broad range of disorders that appear early in development and lead to a range of impairments in personal, social, and academic functioning. These developmental deficits are often chronic and affect children's ability to learn or perform normally, including intellectual disability, autism spectrum disorder, communication and learning disorders, and attention-deficit/hyperactivity disorder (ADHD).
- ▶ *Behavioral and emotional disorders.* Chapters 9 through 12 cover behavioral and emotional conditions that typically emerge in mid-childhood to late childhood and adolescence. These include disruptive and conduct disorders (sometimes referred to as externalizing problems because they involve conflicts with the environment), mood and anxiety disorders (sometimes referred to as "internalizing problems" because they involve conflicts within the child that are less visible to others), and trauma- and stressor-related disorders. We also discuss child maltreatment in the chapter on trauma- and stressor-related disorders because of the significance of abuse and other forms of non-accidental trauma on children's developmental progress and course.
- ▶ *Problems related to physical and mental health.* Chapters 13 and 14 discuss child and adolescent disorders stemming from medical or physical conditions that may affect children's overall psychological

functioning, and vice versa, such as chronic illness, substance abuse, and eating disorders and related conditions.

Far greater attention has been devoted to the description and classification of abnormality in children than to healthy child functioning and how children adapt to the challenges of growing up. In light of this imbalance, throughout this text we introduce each disorder with a discussion of normal developmental processes, such as children's normal intellectual development (in relation to intellectual disability) and the normal range of misbehavior and acting out (in reference to conduct problems). We also consider children's strengths and adaptive abilities, regardless of the presence of a particular disorder, and factors that are believed to encourage healthy adaptation regardless of other impairments. We then present the core features of each disorder (such as hyperactivity-impulsivity, sad mood, or antisocial behavior), followed by significant associated features (such as problems in self-esteem, peer relations, or substance abuse).

As you begin your journey into the field of abnormal child psychology, keep in mind that the threats facing children today—child poverty, chronic illness, maltreatment, and indifference—are no less significant than those of the past, although they sometimes fail to arouse the indignation of society to the extent that major changes are implemented and maintained. Even countries that have outlawed child labor, child abuse, and many other forms of actual and potential harm have only recently begun to recognize the profound importance of the quality of the early childhood environment for children's health, well-being, and competence. Fortunately, it is unlikely that children and youths will ever again be seen as insignificant, costly burdens on society. As each chapter in this text indicates, efforts aimed at change in policies and programs directed toward children and youths are gaining momentum.

# Study Resources

## SECTION SUMMARIES

Historical Views and Breakthroughs 3  
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## KEY TERMS

competence 12  
developmental pathway 13  
developmental tasks 13  
equifinality 14  
externalizing problems 20  
internalizing problems 20  
multifinality 13  
nosologies 7  
protective factor 16  
psychological disorder 2  
resilience 16  
risk factor 16  
stigma 12



# 2

## Theories and Causes

*Everything should be made as simple as possible, but not simpler.*

—Albert Einstein

### CHAPTER PREVIEW

#### WHAT IS CAUSING JORGE'S PROBLEMS?

##### THEORETICAL FOUNDATIONS

Developmental Psychopathology Perspective

An Integrative Approach

##### DEVELOPMENTAL CONSIDERATIONS

Organization of Development

##### BIOLOGICAL PERSPECTIVES

Neural Plasticity and the Role of Experience

Genetic Contributions

Neurobiological Contributions

##### PSYCHOLOGICAL PERSPECTIVES

Emotional Influences

Behavioral and Cognitive Influences

Applied Behavior Analysis (ABA)

##### FAMILY, SOCIAL, AND CULTURAL PERSPECTIVES

Infant–Caregiver Attachment

The Family and Peer Context

##### LOOKING AHEAD

**A**T THE RISK OF sounding vague, we must acknowledge that nearly all child and family disturbances result from multiple, interacting risk factors and processes. Contextual events in the family or school environment exert considerable influence over an individual's course of development (see the Chapter 1 discussion of risk and resilience). Therefore, a given child's problems must be considered in relation to multiple levels of influence—individual, family, community, and culture—rather than be attributed to any one factor. Since the causes of psychological disorders are significant, in this chapter we describe the primary biological and psychological influences.

In this chapter, we consider theories and research findings regarding influences that shape the child's ongoing development in many different ways. Some influences (such as biological factors and the effects of environmental factors) are contained within the child, whereas many others (such as family patterns and cultural norms) lie at various distances from the child's immediate surroundings. We will see how examining these various causal influences contribute to a better understanding of abnormal child development and how they are conceptually related to one another.

Let's begin by considering Jorge's situation and his parents' complaints, which raise important issues. Could Jorge have mild intellectual disability that impairs his learning? Is Jorge's mother right about his having a learning disability? Does Jorge have a specific communication or learning problem unrelated to intellectual disability that affects his schoolwork? Perhaps his school and family environments have contributed to his learning difficulties and fear of school. Did his parents and teachers expect him to fail? Has he been given much assistance? Has he been abused or neglected at home?

## WHAT IS CAUSING JORGE'S PROBLEMS?

Suppose you were asked to interview Jorge, his teachers, and his parents to find out why schoolwork is difficult for him. How would you go about this task? What information do you feel would be essential to know, and what plan might you follow to organize and explore the many possible reasons for his problem? Most likely, you would form a working theory to help you in determining what to ask and why. At first, your theory might be very basic and unrefined. Jorge's problem in school might be connected to the negative comments and pressure he is getting from his parents and teacher. As you proceed, your theory about Jorge's problem would likely expand and become more detailed, allowing you to probe with more precise questions.

Let's briefly consider possible interrelated causes of Jorge's behavior:

1. *Biological influences.* Because we know little about Jorge's early development, we might ask his mother about her prenatal history, including major illnesses, injuries, or perhaps marital problems or undue stresses that might have affected her pregnancy. Jorge's problems also reflect a tendency toward behavioral inhibition; he may approach new or challenging situations with greater apprehension and fear than other children (Gleason et al., 2011).

Children with fears and anxiety—which are affected by levels of stress hormones circulating in the body—are more likely to have parents who had similar problems during childhood (Micco et al., 2009). Jorge may have inherited a tendency to respond to his environment with heightened arousal or sensitivity. Alternatively, his early neurological development and the patterns of connections established within his brain may have been influenced by the child-rearing styles his parents used when he was an infant. These early patterns, in turn, can influence how Jorge approaches new tasks, reacts to criticism, or relates to others (Belsky & de Haan, 2011). Another possibility is that Jorge may have inherited one or more genes that influence his phonological awareness. He may not be able to recognize and process all the English language phonemes (individual sounds) and thus suffers from a reading disorder (Scerri & Schulte-Körne, 2010).

2. *Emotional influences.* Children like Jorge not only think and behave in ways that provide clues to their distress, but also show various emotional signals that are not obvious at first. Emotional expression offers another unique window for viewing Jorge's inner world, especially his emotional reactions to challenges such as reading. Consider this possibility: As Jorge approaches his reading assignment or thinks about returning to school the next morning, he is overwhelmed by fear, bordering on panic. His heart races, his breathing quickens, and his thoughts turn to ways to escape from this dreaded situation as quickly as possible. As he is preoccupied by such feelings and worry, his concentration declines further.

Jorge's inability to regulate feelings of arousal, distress, or agitation that may surface without warning is a key element in describing his problem, but we still have not determined how it might have originated. Emotional reactivity and expression are the ways infants and young children first communicate with the world around them, and their ability to regulate these emotions as they adapt is a critical aspect of their early relationships with caregivers (Eisenberg, Smith, & Spinrad, 2011). Emotions can be powerful events,

## Not Keeping Up

Jorge was almost 14 years old when he was referred to me because of his academic problems. Since grade 4 he had been performing well below average in his classes, had difficulty concentrating, and was considered to be “too quiet and nervous.” For the past four summers he had taken extra classes to improve his reading, but was currently reading at the third-grade level. As a result, his parents received a letter from the school saying he likely would not be promoted to the next grade if his work didn’t improve. Everyone seemed angry at Jorge for not keeping up.

When I met with Jorge, his version of his school problems was short and to the point: “It’s the teachers,” he said, as he looked at the floor and squirmed in his seat. “How am I expected to learn anything when they yell at you? When I told my English teacher that I hadn’t finished reading my book for class, he said I take too long ‘cuz my mind wanders too much. How am I expected to learn when they think I’m dumb?” After further discussion, Jorge summed up his view of the problem in a quiet, sullen voice: “I know I’ll never get anywhere with the brain I’ve got. I can’t figure stuff out very fast, and the teachers aren’t much help. Just thinking about school makes me jittery. I’m afraid I’ll say something stupid in class and everyone will laugh at me.”

Jorge’s mother and father met with me separately and were quick to add their own opinions about why their son didn’t do well in school. They had moved from their Spanish-speaking neighborhood when Jorge was in grade 2, and he struggled to learn English in school because his parents did not speak it at home. His mother admitted that she becomes aggravated and starts to yell when Jorge says he doesn’t want to go to school or can’t do his schoolwork,



SW Productions/Getty Images

Everyone seemed to be angry with Jorge

but she didn’t think this was an issue. She quickly added, “I’ve read about learning disabilities and I think he’s got one. He can’t control his mind enough to center on anything. He’s scared to go to school, and avoids homework as if his life depended on it.” By the end of the interview it was evident that Jorge’s parents were angry at him. They felt Jorge blamed his teachers for his own lack of effort, and that he should be in a special classroom and maybe given medications to calm him down so he wouldn’t worry so much about school. (Based on authors’ case material)

demanding that the child find ways to reduce or regulate their force. The most adaptive way is to seek comfort from a caregiver, which gradually helps the child learn ways to self-regulate. By extension, Jorge’s school refusal or phobia could have emerged at a younger age from anxiety about his mother’s availability, which grew to a more pronounced and generalized insecurity (Bernstein & Victor, 2010).

3. *Behavioral and cognitive influences.* Jorge has been performing below average in reading for some time. Using our knowledge of learning principles, we might investigate Jorge’s current situation from the perspective of events that elicit fear or avoidance, and events that maintain such avoidance by reducing unpleasant reactions. Jorge’s lack of progress may be a function of punitive events when he is criticized by his parents or singled out by his teacher.

A behavioral approach to Jorge’s problem might be to try to change aspects of his environment—such as the attention he receives from his teacher or parents for his gradual, slow efforts to do his schoolwork—to see what effect this approach has on his school performance and avoidance. We might also consider the teasing or rejection by peers in his school environment that may make him fearful. By observing Jorge at school and narrowing the list of possible events that may contribute to his fears, we can begin to develop hypotheses about Jorge’s learning history and, most importantly, possible ways to remedy the problem. One possibility might be to increase the likelihood of reinforcement that is contingent on Jorge’s efforts to complete his schoolwork (Little, Akin-Little, & Newman-Eig, 2010).

Cognitive influences, such as a person’s interpretation of events, are also important to consider. How

does Jorge view the situation, and does his view accurately reflect the situation? Children with fears and worries sometimes develop a belief system that can be self-defeating, leading them to believe that they will fail at everything (Beidel & Turner, 2007). Jorge has failed in reading and other events at school, and it is plausible that he anticipates further struggles with schoolwork and with other children. His own words are quite clear in this respect: “How am I expected to learn when they think I’m dumb?” “I know I’ll never get anywhere with the brain I’ve got.” “Just thinking about school makes me jittery.” Such thoughts only tend to make him more anxious and more likely to avoid school as much as possible. In short, Jorge expects to fail and be ridiculed at school, issues that certainly warrant attention. Children’s self-expressions and other cognitions offer a window on their inner world, which may provide clues that we miss when observing their actions.

**4. Family, cultural, and ethnic influences.** An understanding of the possible causes of Jorge’s difficulties would be incomplete without considering his family and peer relationships, his social setting, and his larger cultural and ethnic identity (Marks, Patton, & Coll, 2011). His early relationship with his parents may have contributed to a lessened ability to regulate his emotions adaptively; his current relationships with his teachers, peers, and family members offer further clues. At the family level, how sensitive are his parents to recognizing his special limitations, and how willing are they to teach him alternative strategies? His mother has high hopes and expectations for her child, as well as a life and problems of her own (including a job). Even though she wants only what’s best for Jorge, and her behavior is understandable, her lack of sensitivity may still be a problem. Her pointed statement, “I’ve read about learning disabilities and I think he’s got one,” suggests that she dismisses the problem by labeling it as “his” problem. Neither parent appears to be open to considering other possible explanations. Furthermore, his mother admits to becoming exasperated and yelling at Jorge. What effect might this have on his tenuous self-concept and his attempts to regulate his fear and arousal?

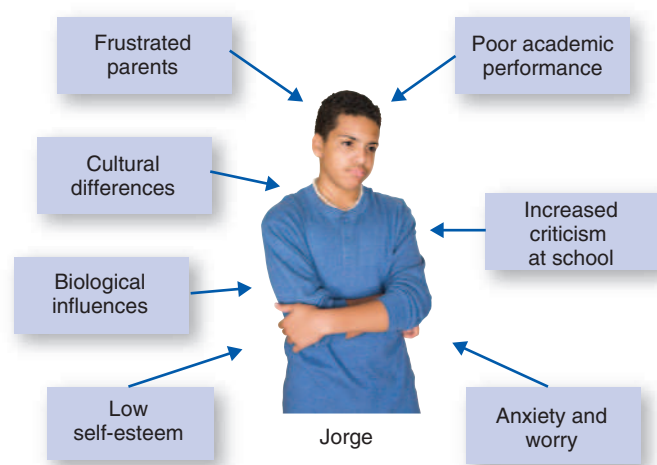
All children, not only those with problems, require a parenting style that is sensitive to their unique needs and abilities and that places appropriate limits on them to help them develop self-control (Morris et al., 2011). Significant adults both within Jorge’s family and at school have not been responding to him with sensitivity, so it’s not surprising that Jorge’s behavior has grown worse over time.

Along these same lines, it is important to consider how Jorge’s behavior might be affected by culturally

specific norms and standards. That is, his family’s expectations for how he should behave at school and at home may be at odds with those of his non-Hispanic peers (Trommsdorff & Cole, 2011). Children from cultural minority groups face challenges in adapting to their receiving culture—a process known as “acculturation”—and Jorge may be caught between the two. Over time, he may learn to balance these opposing demands and expectations, especially if he lives in a bicultural environment. There is growing evidence that biculturalism, in which the child or adolescent strives to adapt to both their heritage and their receiving cultures, is the most adaptive approach to acculturation (Schwartz et al., 2013).

Finally, for proper development, children require a basic quality of life that includes a safe community, good schools, proper health and nutrition, access to friends their own age, and opportunities to develop close relationships with extended family and members of their community. These opportunities and necessities are in the background of every child’s developmental profile and can emerge as very significant issues for children undergoing parental divorce or living in poverty (Fabricius & Luecken, 2007; Rutter, 2003a).

Several important factors that need to be considered in addressing Jorge’s problems are shown in ● Figure 2.1. There are many “strikes against Jorge” that need to be considered; clinicians and researchers often attempt to visualize the multiple causes to allow assessment and intervention to address them properly.



● **FIGURE 2.1** | Jorge’s concerns: where do we intervene?

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## Section Summary

### What Is Causing Jorge's Problems?

- Jorge's case exemplifies many interconnected factors that cause or contribute to psychological problems in children.
- The study of causes of abnormal child behavior involves theory and findings on biological, psychological, social, and cultural/ethnic factors.
- Biological factors include genetic and neurobiological contributors, among others.
- Psychological influences include the role of behavioral and cognitive processes, as well as emotional and relationship influences.
- Major social contributors to child problems involve family patterns, peer relations, community factors, and cultural expectations.
- Factors in each one of these areas impact and interact with the other areas.

## THEORETICAL FOUNDATIONS

Defining what is abnormal within the context of children's ongoing adaptation and development, and sorting out the most probable causes of identified problems, is a complicated process. Very few simple or direct cause-and-effect relationships exist. The study of abnormal child behavior requires an appreciation of developmental processes as well as individual and situational events that can have a major bearing on the course and direction of a particular child's life. Studying normal development informs our theories of abnormal development, and vice versa.

Most clinical and research activity begins with a theoretical formulation for guidance and information. Theory is essentially a language of science that allows us to assemble and communicate existing knowledge more comprehensively. A theory permits us to make educated guesses and predictions about behavior based on samples of knowledge, moving us forward to explore possible explanations. Like a treasure map that provides clues and signposts, a theory offers guidance for our pursuit of causal explanations. Knowledge, skill, and evidence must be added to bring these theoretical clues to life.

The study of the causes of childhood disorders is known as **etiology**, which considers how biological, psychological, and environmental processes interact to produce the outcomes that are observed over time. Research into biological determinants has focused on possible causes such as structural brain damage or dysfunction, neurotransmitter imbalances, and genetic influences. Psychological and environmental models

emphasize the role of environmental toxins, early experiences, learning opportunities, disciplinary practices, family systems, and sociocultural contexts. Although these factors are often described as possible "causes," they are, in fact, primarily risk factors and correlates associated with certain disorders—their causal role is not always clear.

Numerous theoretical models have been proposed to explain and suggest treatment for children's psychological disorders, although many of the theories have not been substantiated or even tested (Weisz & Kazdin, 2010). Until recently, most models focused on single explanations that failed to consider other influences and their interactions. One-dimensional models do not capture the complexities of abnormal child behavior that are increasingly evident from research (Kazdin & Whitley, 2006). The alternative to single-factor explanations is much more complex and informative. It considers multiple causes that can interact in various ways over time to affect normal and abnormal development. Keeping in mind this central theme of multiple, interactive causes will help you grasp the complexity of each disorder discussed within this text.

## Developmental Psychopathology Perspective

**Developmental psychopathology** is an approach to describing and studying disorders of childhood, adolescence, and beyond in a manner that emphasizes the importance of developmental processes and tasks. This approach provides a useful framework for organizing the study of abnormal child psychology around milestones and sequences in physical, cognitive, social-emotional, and educational development. It also uses abnormal development to inform normal development, and vice versa (Cicchetti, 2006; Hinshaw, 2013). Simply stated, developmental psychopathology emphasizes the role of developmental processes, the importance of context, and the influence of multiple and interacting events in shaping adaptive and maladaptive development. We adopt this perspective as an organizing framework to describe the dynamic, multidimensional process leading to normal or abnormal outcomes in development (Hayden & Mash, 2014).

A central belief of developmental psychopathology is that to understand maladaptive behavior adequately, one must view it in relation to what is normative for a given period of development (Cicchetti, 2006). The main focus is on highlighting developmental processes, such as language and peer relations and how they function, by looking at extremes and variations in developmental outcomes. In so doing, this perspective

emphasizes the importance and complexity of biological, familial, and sociocultural factors in predicting and understanding developmental changes. It draws on knowledge from several disciplines, including psychology, psychiatry, sociology, and neuroscience, and integrates this knowledge within a developmental framework (Hinshaw, 2013).

The value of theory lies not only in providing answers but also in raising new questions and looking at familiar problems in different ways. Theory, research, and practice in abnormal child psychology all require an understanding of the assumptions underlying work in this area. Let's look at three prominent assumptions derived from a developmental psychopathology perspective and how they have shaped our approach to abnormal child psychology.

### **Abnormal Development Is Multiply Determined**

Our first underlying assumption is that abnormal child behavior is *multiply determined*. Thus, we have to look beyond the child's current symptoms and consider developmental pathways and interacting events that, over time, contribute to the expression of a particular disorder.

To illustrate this assumption, let's return to Jorge's problems. One way to look at Jorge's problems is to say that he lacks motivation. Although it is a reasonable explanation, this one-dimensional causal model, which attempts to trace the origins of Jorge's reading difficulty to a single underlying cause, is probably too simplistic. Scientific method emphasizes the need to simplify variables to those of the most importance, but focusing on one primary explanation rather than identifying and allowing for several possible explanations (e.g., genetic factors, reinforcement history, and peer problems) fails to consider the concept of developmental pathways (discussed in Chapter 1). A particular problem or disorder may stem from a variety of causes, and similar risk factors may lead to very different outcomes.

Another way to view Jorge's difficulties—the way we emphasize here—considers multiple influences, including his developmental profile and abilities, his home and school environment, and the ongoing, dynamic interactions among these factors. To address Jorge's reading problem from a multidimensional perspective, we would first assess his current abilities by using multiple sources of data on his ability to function in different settings. Even if we were interested only in his reading ability, we would consider a wide range of characteristics besides those we initially believed to be signs of reading problems. Otherwise, our assumptions about the nature of reading problems might prevent us from considering other explanations. Could criticism and yelling from Jorge's mother affect his concentration or self-esteem? Is Jorge different from



Courtesy of David Wolfe

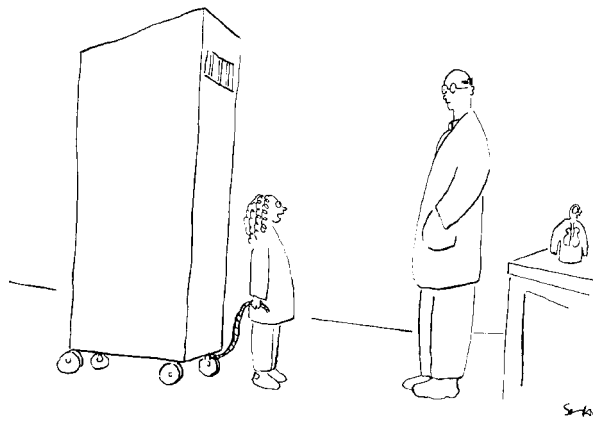
Children's comfort with their environment is shown by their actions

other children in terms of his ability to recognize language sounds from written words? These are some of the questions we would want to answer through careful observation and assessment, using a theoretically guided decision-making strategy.

### **Child and Environment Are Interdependent**

Our second assumption extends the influence of multiple causes by stressing how the child and environment are **interdependent**—how they influence each other. This concept departs from the tradition of viewing the environment as acting on the child to cause changes in development, and instead argues that children also influence their own environment. In simple terms, the concept of interdependence appreciates how nature and nurture work together and are, in fact, interconnected (Rutter, 2011a). Thus, children elicit different reactions from the same environment; different environments, such as home or school, elicit different reactions from the same child.

The dynamic interaction of child and environment is referred to as a **transaction** (Sameroff, 2010; Sameroff & MacKenzie, 2003). The child and the environment both contribute to the expression of a disorder, and one cannot be separated from the other. A transactional view regards both children and the environment as *active contributors* to adaptive and maladaptive behavior. Most persons who know children best—parents, teachers, child care workers, and others—would probably agree that this view makes the most sense: Children act on their environment, and their environment acts on them, as in the example of Jorge. According to this transactional perspective, children's psychological disorders do not reside within the child, nor are they due solely to environmental causes. They most often emerge from a combination



"The title of my science project is 'My Little Brother: Nature or Nurture.'"

Michael Shaw/The New Yorker Collection/The Cartoon Bank

of factors, which interact in ways that follow general laws of organized development.

Although a transactional view considers general principles of development that apply to all children, it is also sensitive to individual circumstances—in the child's family or biological makeup—that influence or alter typical outcomes. Learning about such deviations from the norm is what this textbook is all about.

### Abnormal Development Involves Continuities and Discontinuities

Think for a moment about how Jorge's various problems might have begun and how they might change or even disappear over time. Might his current problems of avoiding school and homework be connected to his earlier difficulties in reading? Are these qualitatively different problems, or are they different manifestations of the same problem? Are his current problems qualitatively different from those he had at a younger age because his problems today include avoiding school and homework?

Few psychological disorders or impairments suddenly emerge without at least some warning signs or connections to earlier developmental issues. This connection is apparent, for example, in early-onset and persistent conduct disorders, with which parents and other adults often see troublesome behaviors at a young age that continue in some form into adolescence and adulthood (Reef, van Meurs, Verhulst, & van der Ende, 2010). However, it is critical to note that some forms of abnormal child development may be continuous or discontinuous across childhood, adolescence, and adulthood, in either a consistent or a transformed manner (Schulenberg, Sameroff, & Cicchetti, 2006).

**Continuity** implies that developmental changes are gradual and quantitative (i.e., expressed as amounts

that can be measured numerically, such as weight and height changes) and that future behavior patterns can be predicted from earlier patterns. **Discontinuity**, in contrast, implies that developmental changes are abrupt and qualitative (i.e., expressed as qualities that cannot be measured numerically, such as changes in mood or expression) and that future behavior is poorly predicted by earlier patterns.

As an example, consider a preschool child who uses physical aggression with peers. What would you expect that child to be like 10 years later? According to the notion of continuity, he or she would be more likely to engage in antisocial and delinquent behaviors as an adolescent and adult. That is, the pattern of problem behavior (in this case, physical aggression) is continuous across developmental periods, although it gradually changes in form and intensity. Pushing a peer may turn into striking someone with a fist or object. Importantly, continuity refers to patterns of behavior, rather than specific symptoms that remain over time. Continuity is well supported for early-onset and persistent conduct disorders, which have a significant likelihood of later evolving into serious antisocial acts (Lynam et al., 2009).

Other problem behaviors, such as eating disorders, seem to follow a more discontinuous pattern; they occur more suddenly and without much prior warning. In these cases, there are few good behavioral predictors from early childhood as to why a particular child begins to restrict eating or to purge food during early adolescence (see Chapter 14). Sometimes discontinuity can refer to an unexpected or atypical outcome, such as a child who shows normal development until about 18 months of age and then displays loss of language and reduced social engagement (characteristics of some children with autism). In such circumstances, the connection between early and later patterns seems abrupt and discontinuous, which is very baffling to parents.

As we will see throughout our discussion of each disorder, positive factors such as individual competence or social intervention, as well as negative factors such as poverty or discrimination, can influence the continuity or discontinuity of development over time (Rutter, Kim-Cohen, & Maughan, 2006). Returning to Jorge, can you think which of his behavior patterns (if any) were continuous and which seemed to be more discontinuous? Like many problems in abnormal child psychology, Jorge's current behavior pattern involves *both* continuities and discontinuities. Some of his troubles, such as school and homework avoidance, seem qualitatively different (discontinuity) from his reading disorder. His other behaviors, such as slow reading and comprehension, seem to follow (continuity) from his earlier academic problems.

Remember that the concepts of continuity and discontinuity apply to the understanding of abnormal and normal development. However, even with wide fluctuations in the way problems are expressed over time, children show some degree of consistency in organizing their experiences and interacting with their environment, whether that consistency is adaptive or maladaptive (Sroufe, Coffino, & Carlson, 2010). The degree of continuity or discontinuity will vary as a function of changing environmental circumstances and transactions between the child and the environment. These continual changes, in turn, will affect the child's developmental course and direction.





In sum, a central theme of our basic assumptions is that the study of abnormal child psychology must consider abnormality in relation to multiple, interdependent causes and major developmental changes that typically occur across the life cycle. Until recently, developmental aspects of abnormal child behavior were often overlooked in relation to children's behavioral and emotional problems (Cicchetti, 2006). To redress this imbalance, throughout this text we discuss developmental issues pertaining to the nature, symptoms, and course of each disorder.

### Changes, Typical and Atypical

● Figure 2.2 presents an overview of developmental periods by age. It gives examples of normal achievements

for each period, as well as behavior problems most often reported in general population samples and the clinical disorders that typically become evident at each period. Guidelines for the typical sequence of development across several important dimensions are helpful, but we must keep in mind that age in years is an arbitrary way to segment continuous sequences of development. You may find yourself turning back to this table to reorient yourself to children's normal and abnormal development.

Children's behaviors—both adaptive and maladaptive—are interconnected with their environment and influenced by their biological makeup. Recently, the field of developmental psychopathology has taken an interest in developmental cascades to help explain why some problems in childhood go on to become major problems later on, whereas others do not (Masten & Cicchetti, 2010). **Developmental cascades** refer to the process by which a child's previous interactions and experiences may spread across other systems and alter his or her course of development, somewhat like a chain reaction (Masten & Cicchetti, 2010). This concept helps to explain how processes that function at one level or domain of behavior (such as curiosity) can affect how the child adapts to other challenges later on (such as academic performance) (Cox et al., 2010). Throughout this book, the developmental psychopathology perspective adds developmental relevance and richness to categorically based DSM-5 disorders and to early intervention possibilities.

Approximate age (years)	Normal achievements	Common behavior problems	Clinical disorders
0–2 	Eating, sleeping, attachment	Stubbornness, temper, toileting difficulties	Mental retardation, feeding disorders, autistic disorder
2–5 	Language, toileting, self-care skills, self-control, peer relationships	Arguing, demanding attention, disobedience, fears, overactivity, resisting bedtime	Speech and language disorders, problems stemming from child abuse and neglect, some anxiety disorders, such as phobias
6–11 	Academic skills and rules, rule-governed games, simple responsibilities	Arguing, inability to concentrate, self-consciousness, showing off	ADHD, learning disorders, school refusal behavior, conduct problems
12–20 	Relations with opposite sex, personal identity, separation from family, increased responsibilities	Arguing, bragging, anger outbursts, risk-taking	Anorexia, bulimia, delinquency, suicide attempts, drug and alcohol abuse, schizophrenia, depression

● **FIGURE 2.2** | A developmental overview.

Photo Credits (top to bottom): © Michael Pettigrew/Shutterstock.com; © YUYI/Shutterstock.com; © iStockphoto.com/aabejon; © iStockphoto.com/bmcent1. Based on Achenbach, 1982; Tully & Goodman, 2007



## An Integrative Approach

How do we attempt to make sense of the many environmental and individual factors that influence child behavior? Since no single theoretical orientation can explain various behaviors or disorders, we must be familiar with many theories and conceptual models—each contributes important insights into normal and abnormal development.

Even models that consider more than one primary cause can be limited by the boundaries of their discipline or orientation. Biological explanations, for instance, emphasize genetic mutations, neuroanatomy, and neurobiological mechanisms as factors contributing to psychopathology. Similarly, psychological explanations emphasize causal factors such as insecure attachments, cognitive distortions, or maladaptive reinforcement and/or learning histories. Biological and psychological models are both multicausal and distinctive in terms of the relative importance each attaches to certain events and processes. Each model is restricted in its ability to explain abnormal behavior to the extent that it fails to incorporate important components of other models. Fortunately, such disciplinary boundaries are gradually diminishing as different perspectives take into account important variables derived from other models. For example, biological influences are often taken into account when explaining how psychological factors, such as behavior or cognition, interact over time and result in a psychological disorder (Cicchetti & Curtis, 2006; Sameroff, 2010).

Over time, major theories of abnormal child psychology have become compatible with one another. Rather than offering contradictory views, each theory contributes one or more pieces of the puzzle of atypical development. As all the available pieces are assembled, the picture of a particular child or adolescent disorder becomes more and more distinct. Psychological theories are merely tools to study human behavior; the more you learn what these tools can and cannot do and which tool to use for which purpose, the more knowledgeable and skilled you will become. Remember that no single integrative theory fully captures the diversity of perspectives and findings represented by current research in abnormal child psychology.

## Section Summary

### Theoretical Foundations

- A theory allows us to make educated guesses and predictions about behavior that are based on existing knowledge, and it allows us to explore these possible explanations empirically.

- Developmental psychopathology provides a useful framework for organizing the study of abnormal child psychology around milestones and sequences in physical, cognitive, social–emotional, and educational development.
- A central theme of this text is the importance of considering multiple, interactive causes for abnormal behavior, in conjunction with the major developmental changes that typically occur.
- Three underlying assumptions about abnormal development are stressed: It is multiply determined, the child and the environment are interdependent, and abnormal development involves continuities and discontinuities of behavior patterns over time.
- The complexity of abnormal child behavior requires consideration of the full range of biological, psychological, and sociocultural factors that influence children's development.

## DEVELOPMENTAL CONSIDERATIONS

Even though children's psychological disorders have very different symptoms and causes, they share common ground: They are an indication of adaptational failure in one or more areas of development (Rutter & Sroufe, 2000). **Adaptational failure** is the failure to master or progress in accomplishing developmental milestones. In other words, at the broadest level, children with psychological disorders differ from children their own age in some aspect of normal development. Again, such failure or deviation is rarely due to a single cause, but typically results from an ongoing interaction between individual development and environmental conditions.

The causes and outcomes of abnormal child behavior operate in dynamic and interactive ways over time, making them a challenge to disentangle. Designating a specific factor, such as Jorge's reading problem, either as a cause or as an outcome of a particular disorder usually reflects the point at which we take note of the problem.



Children's development follows an organized pattern that is nurtured through positive experiences with their caregivers

His reading problem, for example, may be viewed as a disorder in its own right (such as a learning disorder in reading), the cause of his other difficulties (such as poor study habits and oppositional behavior), or the outcome of some other condition or disorder (such as a communication disorder). As you read the following chapters and gain a better understanding of the causes of abnormal child behavior, remember that children's behavior and their environment are interconnected.

## Organization of Development

Change and reorganization are fundamental aspects of biological and behavioral systems (Sameroff, 2010). An organizational viewpoint looks closely at the psychological processes that may explain how these systems influence each other. In an attempt to understand abnormal development, we may choose to focus on any or all aspects of this organizational process. In the **organization of development** perspective, early patterns of adaptation, such as infant eye contact and speech sounds, evolve with structure over time and transform into higher-order functions such as speech and language. Prior patterns of adaptation are incorporated into successive reorganizations at subsequent periods of development, much as toddlers learn to make certain speech sounds before they develop the ability to use language.

An organizational view of development implies an active, dynamic process of continual change and transformation. As the child's biological abilities unfold during each new stage of development, they interact with environmental factors to direct and redirect the course of development. Because development is organized, sensitive periods play a meaningful role in any discussion of normal and abnormal behavior. **Sensitive periods** are windows of time during which environmental influences on development, both good and bad, are enhanced (Roth & Sweatt, 2011a). Infants, for example, are highly sensitive to emotional cues and proximity to their caregivers, which assists them in developing secure attachments (R. A. Thompson & Meyer, 2007). Toddlers are sensitive to the basic sounds of language, which helps them distinguish sounds and combine them to form words (Shafer & Garrido-Nag, 2007). Sensitive periods can be enhanced opportunities for learning but are not the only opportunities; change can take place at other times. For example, children adopted from orphanages show a number of negative developmental outcomes as a result of their early institutional deprivation. However, their outcome is also affected by later experiences in the post-institutional environment (Reeb et al., 2009). Human development is a process of increasing differentiation and integration, more like a network of interconnecting pathways than one straight line.

Understanding the seemingly endless list of possible causes that influence children's normal and abnormal development is made easier by the fact that development generally proceeds in an organized, hierarchical manner (Sameroff, 2010). Simply stated, a child's current abilities or limitations are influenced by prior accomplishments, just as your progress through trigonometry or calculus depends on the command of arithmetic you acquired in elementary school. As children develop greater abilities or show signs of adaptational failure, these changes influence their further developmental success or failure. Studying abnormal child behavior within a developmental psychopathology perspective, as described previously, fosters an understanding of the interactive, progressive nature of children's abilities and difficulties.

## Section Summary

### Developmental Considerations

- Children's development is organized, which means that early patterns of adaptation evolve over time and transform into higher-order functions in a structured, predictable manner.

We turn now to three major perspectives on abnormal child development: (1) biological perspectives, which include both genetic and neurobiological factors that are often established (but by no means fixed) at birth or soon thereafter; (2) psychological perspectives, such as emotions, relationships, and thought processes; and (3) familial, social, and cultural influences, which set additional parameters on normal and abnormal development.

## BIOLOGICAL PERSPECTIVES

Broadly speaking, a neurobiological perspective considers brain and nervous system functions as underlying causes of psychological disorders in children and adults. Biological influences on a very young child's brain development include genetic and constitutional factors, neuroanatomy, and rates of maturation. Regions of the brain are highly influenced by the availability of various biochemicals and neurohormones, which interact differently to affect an individual's psychological experiences (Cicchetti & Cannon, 1999). This process depends on environmental factors that direct or reroute ongoing brain processes. Remember that a neurobiological perspective acknowledges and recognizes the need to incorporate environmental influences in accounting for disorders.

The developing brain has long been a mystery, but its secrets are gradually being revealed. The examination

of biological influences begins with the amazing process of neuronal growth and differentiation. During pregnancy, the fetal brain develops from a few all-purpose cells into a complex organ made up of billions of specialized, interconnected neurons (Johnson & de Haan, 2006). The speed and distance these emerging neurons travel is astonishing as they multiply to form various brain structures and functions. The brain stem commands heartbeat and breathing, the cerebellum controls and coordinates sensorimotor integration, and the cortex is where thought and perception originate.

Embryonic development generates an initial overabundance of neurons (Innocenti, 1982). At first these cells are largely undifferentiated, but as they reach their destinations, they become neurons with axons that carry electrical signals to other parts of the brain. These axonal connections, or synapses, form the brain's circuits and lay the foundation for further growth and differentiation. Notably, genes determine the main highways along which axons travel to make their connection; but to reach particular target cells, axons follow chemical cues strewn along their path that tell them the direction to various destinations.

By the fifth month of prenatal development, most axons have reached their general destination, although there are far more axons than the target cells can accommodate. Thus, during early childhood, synapses multiply; then selective *pruning* reduces the number of connections in a way that gradually shapes and differentiates important brain functions (Johnson & de Haan, 2006). The nervous system seems to prepare itself for new growth and demands by sending in reinforcements and then cutting back once the environment has signaled it has everything it needs. Throughout life we undergo cycles that narrow the gap between structure and function. At the level of the nervous system, the microanatomy of the brain is constantly redefined to meet the demands and requirements of an adult world. Like the pruning of a tree, this process fosters healthy growth of different areas of the brain according to individual needs and environmental demands, and eliminates connections that serve to restrict healthy growth.

How permanent are these early brain connections? This question has provoked different theories and agonized many parents who are concerned about their children's early development. For instance, if early brain functions are unlikely to change, this implies that early experiences set the course for lifetime development. Freud's similar contention implied that an individual's core personality is formed from an early age, which sets the pace and boundaries for further personality formation. To the contrary, scientists now believe that brain functions undergo continual changes as they adapt to environmental demands (Fox, Levitt, & Nelson, 2010).

## Neural Plasticity and the Role of Experience

Many early neural connections are not stable; some are strengthened and become more established through use, while many others regress or disappear. Thus, the answer to the question about the permanence of early connections is that the brain shows neural plasticity throughout the course of development (Nelson, 2011). **Neural plasticity**, or malleability, means the brain's anatomical differentiation is use-dependent: Nature provides the basic processes, whereas nurture provides the experiences needed to select the most adaptive network of connections, based on the use and function of each. It is truly fascinating how nature and nurture work together to create such highly specific, extremely adaptive central nervous system functions.

Think of the developing brain as a work in progress, one in which the environment plays an essential role as supervisor of this dynamic rewiring project (see ● Figure 2.3). In fact, environmental experience is now recognized to be critical to the differentiation of brain tissue itself. Although nature has a plan for creating the human brain and central nervous system, environmental opportunities and limitations significantly influence this plan from the beginning. Thus, a transactional model explains normal and abnormal development. A



TOM BARRICK, CHRIS CLARK, SGHMS/Science Source

● **FIGURE 2.3** | Colored 3-dimensional magnetic resonance imaging (MRI) scan of the white matter pathways of the brain, side view. White matter is composed of myelin-coated nerve cell fibers that carry information between nerve cells in the cerebrum of the brain (top half of image) and the brain stem (bottom center). Blue represents neural pathways from the top to the bottom of the brain, green represents pathways from the front (left) to the back (right), and red shows pathways between the right and left hemispheres of the brain.



child's brain structure remains surprisingly malleable for months and even years after birth; therefore, transaction occurs between ongoing brain development and environmental experiences; neither nature nor nurture is sufficient to explain the complexity of the developing brain (Fox et al., 2010).

Experience, of course, comes in all shapes and sizes. The prenatal environment as well as childhood illness and diet count as experience, as do maltreatment and inadequate stimulation. Children's early caregiving experiences play an especially important role in designing the parts of the brain involved in emotion, personality, and behavior (O'Connor, 2006). Normal, healthy methods of child rearing, for instance, may increase children's ability to learn and cope with stress (Belsky & de Haan, 2011). In contrast, abuse and neglect can prime the brain for a lifetime of struggle with handling stress or forming healthy relationships (De Bellis, Woolley, & Hooper, 2013).

Brain maturation is an organized, hierarchical process that builds on earlier function, with brain structures restructuring and growing throughout the life span. Primitive areas of the brain, which govern basic sensory and motor skills, mature first and undergo the most dramatic restructuring, during the first 3 years of life. Moreover, these perceptual centers, along with instinctive centers such as the limbic system, are strongly affected by early childhood experiences and set the foundation for further development (Nelson, 2011). The prefrontal cortex, which governs planning and decision making, and the cerebellum, a center for motor skills, are not rewired until a person is 5 to 7 years old. Major restructuring of the brain occurs between ages 9 and 11 in relation to pubertal development, and then throughout adolescence the brain once again prunes unnecessary synaptic connections. Thus, the brain certainly does not stop changing after 3 years. For some functions, the windows of influence are only beginning to close at that age, while for others they are only beginning to open. Our brain functions undergo lifelong

renovation, with restructuring being a natural by-product of growth.

Because the brain is intrinsically shaped by the effects of early experience, the consequences of inadequate or traumatic experience may be enduring and extremely difficult to change (Glover, 2011). During this evolution of brain growth and differentiation many things can go wrong, thereby altering how neurons form or interconnect. Problems or disruptions at a younger age are typically associated with more severe organic disorders and central nervous system complications. Proper prenatal care, proper nutrition, and avoidance of tobacco or alcohol during pregnancy can go a long way in reducing the risk of such complications and lifelong disabilities.

## Genetic Contributions

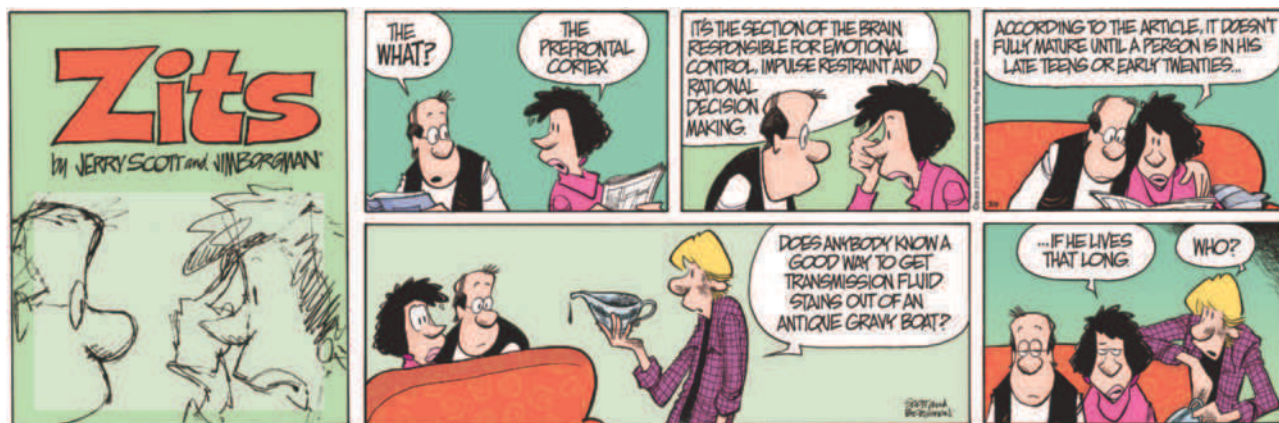
*Genetics explains why you look like your father, and if you don't, why you should.*

—Tammy, age 8

To understand genetic influences, we first must understand the nature of genes, bearing in mind that virtually any trait results from the interaction of environmental and genetic factors (Rutter, 2011a). A review of genetics terminology and function may assist our understanding of some causes of abnormal child behavior.

Each person's unique genome is established at conception and consists of approximately 20,000 to 25,000 genes (International Human Genome Sequencing Consortium, 2004). Genes contain genetic information from each parent, and they are distributed on 22 matched pairs of chromosomes and a single pair of sex chromosomes. In males, the sex chromosome pair consists of an X and a Y chromosome (XY), and in females, the sex chromosome pair consists of two X chromosomes (XX).

Genetic factors are implicated in all of the childhood disorders discussed in this text. Some genetic influences are expressed early in development, such as





behavioral inhibition or shyness (Nigg, 2006), whereas others show up years later, such as a depressive cognitive style (Garber & Flynn, 2001). Moreover, the expression of genetic influences is malleable and responsive to the social environment. Positive environmental circumstances can help a child “beat the odds” of developing a significant disorder, despite genetic predisposition (Masten & Wright, 2010).

### The Nature of Genes

A gene is basically a stretch of DNA and, by itself, it does not produce a behavior, an emotion, or even a passing thought. Rather, it produces a protein. Although

these proteins are vital for the brain to function, very rarely do they cause a behavior to happen. Instead, they produce tendencies to respond to the environment in certain ways (Sapolsky, 1997). Each of us has genetic vulnerabilities, tendencies, and predispositions, but rarely are the outcomes inevitable. The lesson in all of this is simple, yet important. The false notion that genes determine behavior should be replaced with the more accurate statement: Genes influence how we respond to the environment, and the environment influences our genes. Today, researchers are highly interested in this **gene–environment interaction (G×E)**, as discussed in A Closer Look 2.1.

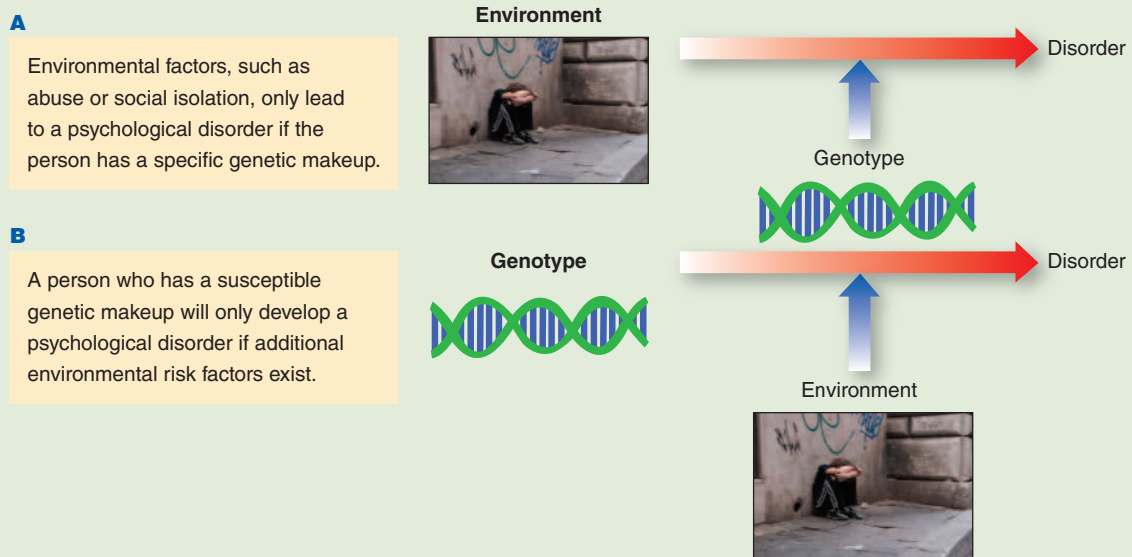
## A CLOSER LOOK 2.1

### Gene–Environment Interactions in Abnormal Child Psychology

Normal and abnormal child development are the result of complex interchanges between nature and nurture and are affected not only by genetic and environmental influences, but also by the timing of when they meet (Lenroot & Giedd, 2011). Researchers refer to this interplay of nature and nurture as *gene–environment interactions*, or G×E. The underlying biological changes to genetic structure result from **epigenetic** mechanisms, which involve changes in gene activity resulting from a variety of environmental factors, such as toxins, diet, stress, and many others; in other words, the environment can turn genes on and off (Roth & Sweatt, 2011b). The growing field of developmental neuroscience has shown that epigenetic changes may play a central role in the long-term impact of early life experiences, as these experiences become biologically embedded in the development of our organ systems, especially the brain (Shonkoff, 2010).

G×E helps explain why some people exhibit disorders and others do not, in the face of similar environmental events. For example, as shown in the top of the diagram below (A), children may be exposed to domestic violence or abuse in their family (a high environmental stressor), but only those who possess a particular genotype may end up showing significant problems later on. Alternatively (B), children who carry a genotype known to increase susceptibility for a particular disorder may only develop that disorder if they are exposed to specific environmental risks (i.e., a toxic prenatal or postnatal environment) (Wermter et al., 2010).

There’s more to the story—epigenetic alterations may be reversible through pharmacological and behavioral interventions. Research on gene–environment interactions is opening new windows of opportunity—targeting children with particular risk factors (either genetic, environmental, or both)—that determine the best timing and strategies for early intervention (Bakermans-Kranenburg & Van IJzendoorn, 2011; Ellis et al., 2011).



# Calvin and Hobbes

by Bill Watterson



Calvin & Hobbes. © 1995 Watterson. Reprinted with permission of Universal Uclick.

## Behavioral Genetics

Sorting out the interactive influences of nature and nurture is the not-so-easy task of **behavioral genetics**, a branch of genetics that investigates possible connections between a genetic predisposition and observed behavior, taking into account environmental and genetic influences. Behavioral genetics researchers often begin their investigations by conducting familial aggregation studies. They look for a nonrandom clustering of disorders or characteristics within a given family and compare these results with the random distribution of the disorders or characteristics in the general population (Rende & Waldman, 2006). For example, parents of children with childhood-onset schizophrenia tend to have higher rates of schizophrenia spectrum disorders relative to normative prevalence rates.

Family aggregation studies cannot control for environmental variables that may also contribute to a particular outcome. For example, a child may be anxious because of his parents' child-rearing methods rather than their genetic contributions. To increase scientific rigor following suggestive familial aggregation studies, researchers may conduct twin studies to control for the contribution of genetic factors (Ehringer et al., 2006). Twin studies may compare identical—or monozygotic (MZ)—twins, who have the same set of genes, to fraternal—or dizygotic (DZ)—twins, who share about half of each other's genes (the same as all first-degree relatives). The crucial scientific question is whether identical twins share the same trait—say, reading difficulties—more than fraternal twins do. Studies of twins provide a powerful research strategy for examining the role of genetic influences in both psychiatric and nonpsychiatric disorders. However, the shared environment presents a potential confounding element in any twin study unless the twins are reared apart (Ehringer et al., 2006).

## Molecular Genetics

*No twisted thought without a twisted molecule.*

—Ralph Waldo Gerard (1900–1974)

Compared to behavioral genetics, molecular genetics more directly supports the influence of genes on child psychopathology. **Molecular genetics** research methods directly assess the association between variations in DNA sequences and variations in a particular trait or traits. More than an association, variations in genetic sequences are thought to cause the variations in the trait(s) (Rutter & Dodge, 2011). As we will discuss throughout this book, molecular genetics research methods have been used to search for specific genes for many childhood disorders, including autism, attention-deficit/hyperactivity disorder, and learning disability (however, no specific gene has been identified for most of the disorders discussed in the book). Discovering that mutations in one gene or another may causally influence a particular form of child psychopathology is only the beginning. The longer-term goal is to determine how genetic mutations alter how the genes function in the development of the brain and behavior for different psychopathologies (Rende & Waldman, 2006).

The identification of specific genes has the potential to greatly enhance our understanding of a disorder and its specific components. However, identifying a specific gene for any disorder addresses only a small part of genetic risk. Similar and multiple interactive genes are a far more likely cause than a single gene. Moreover, genetic influences are probabilistic rather than deterministic; environmental and genetic factors generally have equal importance (Rutter & Dodge, 2011). Most forms of abnormal child behavior are polygenic, involving a number of susceptibility genes that interact with one another and with environmental influences, to result in observed levels of impairment (Rende & Waldman, 2006).

## Neurobiological Contributions

The study of abnormal child psychology requires a working familiarity with brain structures, as shown in ● Figures 2.4, 2.5, and 2.6. This section provides an overview of major structures mentioned later in the context of specific disorders. Once you are familiar with the various areas and functions of the brain, you will have the basic vocabulary needed to understand exciting research in childhood psychopathology.

### Brain Structure and Function

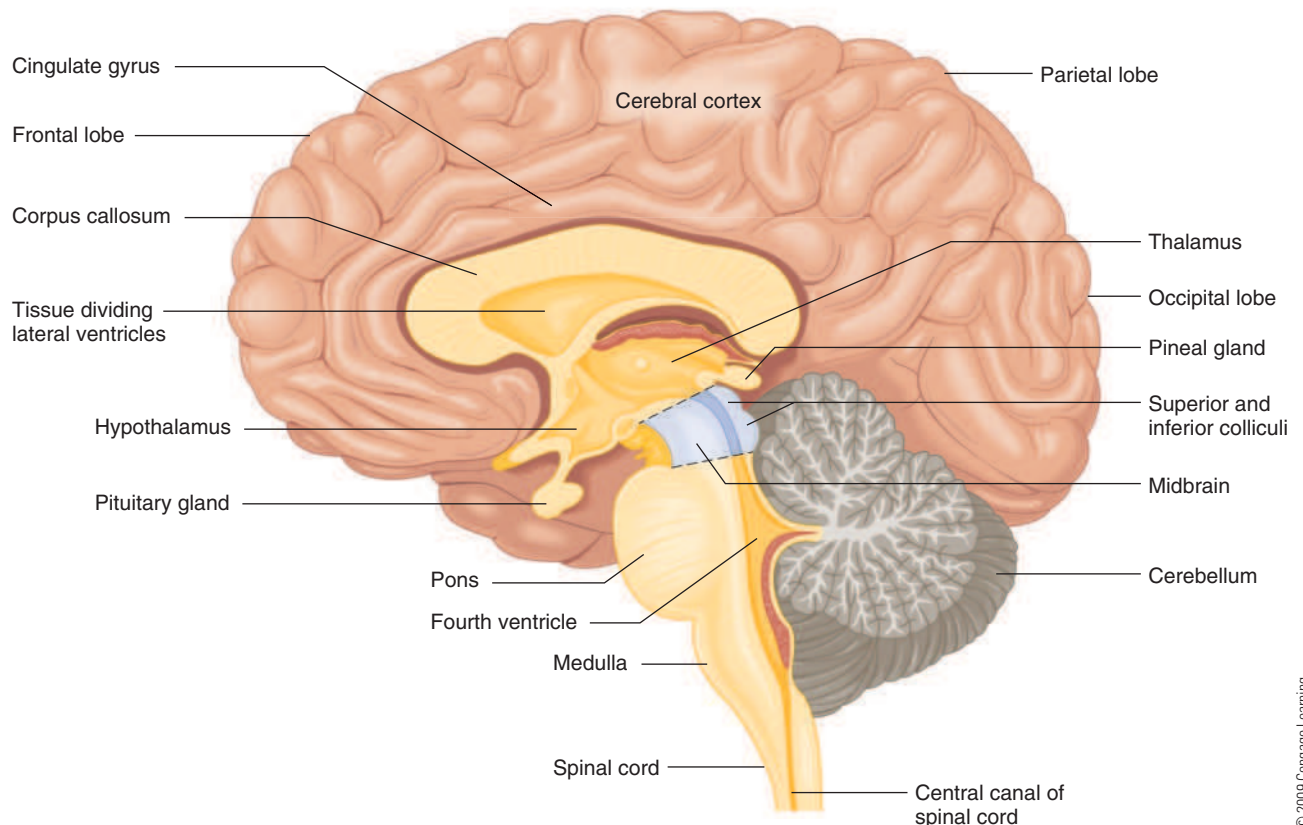
The brain is often divided into the *brain stem* and the *forebrain* (telencephalon) because of their separate functions. The brain stem (see Figure 2.5), located at the base of the brain, handles most of the autonomic functions necessary to stay alive. The lowest part of the brain stem, called the *hindbrain*, contains the *medulla*, the *pons*, and the *cerebellum*. The hindbrain provides essential regulation of autonomic activities such as breathing, heartbeat, and digestion, and the cerebellum controls motor coordination. The brain stem also contains the *midbrain*, which coordinates movement with sensory input. The midbrain houses the

*reticular activating system* (RAS), which contributes to processes of arousal and tension.

At the very top of the brain stem is the *diencephalon*, located just below the forebrain. The diencephalon contains the *thalamus* and *hypothalamus*, which are both essential to the regulation of behavior and emotion. The diencephalon functions primarily as a relay between the forebrain and the lower areas of the brain stem.

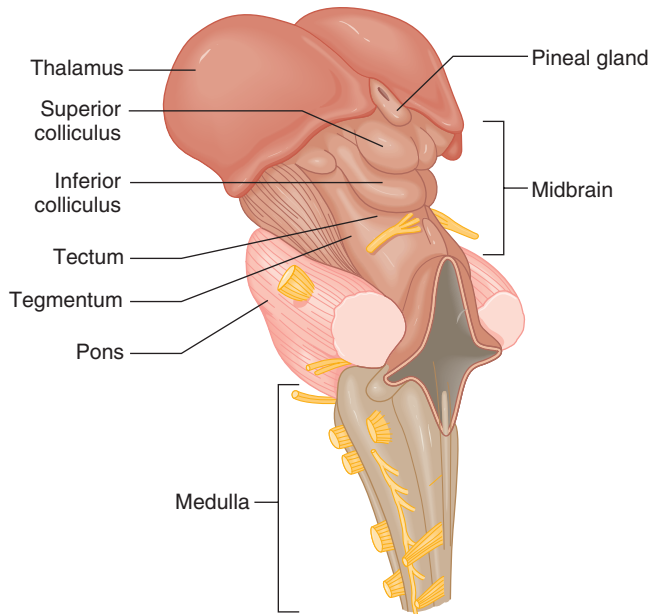
Next is the forebrain, which has evolved in humans into highly specialized functions. At the base of the forebrain is an area known as the *limbic*, or border, *system* (see Figure 2.6). It contains a number of structures that are suspected causes of psychopathology, such as the *hippocampus*, *cingulate gyrus*, *septum*, and *amygdala*. These important structures regulate emotional experiences and expressions and play a significant role in learning and impulse control. The limbic system also regulates the basic drives of sex, aggression, hunger, and thirst.

Also at the base of the forebrain lay the *basal ganglia*, which include the *caudate nucleus*. Researchers are discovering that this area regulates, organizes, and filters information related to cognition, emotions, mood, and motor function, and that it has been implicated



● **FIGURE 2.4** | Structures of the human brain.

Based on Kalat, *Biological Psychology*, 10E.

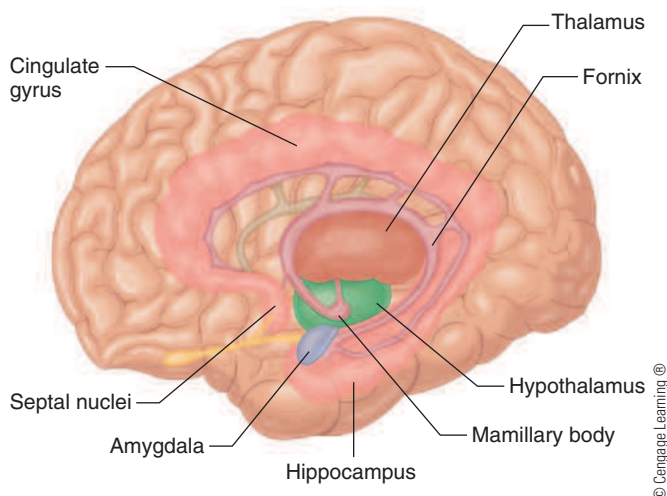


● **FIGURE 2.5** | The brain stem (cerebellum removed to reveal other structures).

Based on Kalat, *Biological Psychology*, 10E.

in attention-deficit/hyperactivity disorder (ADHD, discussed in Chapter 8); disorders affecting motor behavior, such as tics and tremors; and obsessive-compulsive disorder (OCD, discussed in Chapter 11).

The cerebral cortex, the largest part of the forebrain, gives us our distinctly human qualities and allows us to plan as well as to reason and to create. The cerebral cortex is divided into two hemispheres that look very much alike but have different functions. The left hemisphere plays a chief role in verbal and other cognitive processes. The right hemisphere is better at social perception

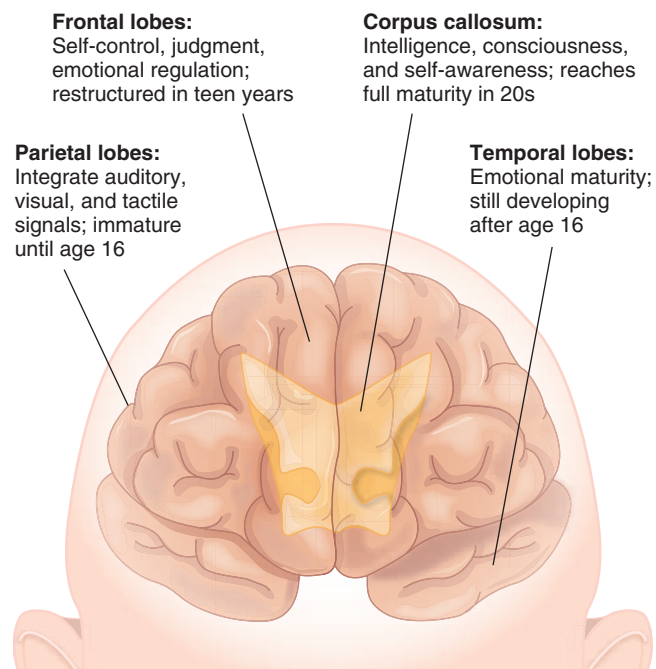


● **FIGURE 2.6** | Structures of the limbic system.

and creativity. Researchers believe that each hemisphere plays a different role in certain psychological disorders, such as communication and learning disorders.

Around puberty, the brain develops new brain cells and neural connections, and then once again begins to reorganize and consolidate (Benes, 2006). This new growth and restructuring results in further maturation of the lobes of the brain. ● Figure 2.7 shows the *temporal*, *parietal*, and *frontal lobes* of the brain and their important functions. The **frontal lobes** are discussed most often in subsequent chapters on disorders and are worth special attention. The frontal lobes contain the functions underlying most of our thinking and reasoning abilities, including memory. These functions enable us to make sense of social relationships and customs and to relate to the world and the people around us, which is why they have considerable relevance in the study of abnormal child psychology. Fortunately, all of these functions continue to mature well into late adolescence and early adulthood. By implication, the brain you had when you reached adolescence is not the one you have now.

Remarkably, these critical brain areas perform their functions in an integrated, harmonious fashion—aided by important regulatory systems and neurotransmitters—that permits the whole to be much larger than the sum of its parts. However, for many disorders defined in this text, one or more of these brain areas are not performing



● **FIGURE 2.7** | The lobes of the brain and their functions.



their functions as they should, either as a result of other problems or as a primary cause of the disorder.

### The Endocrine System

The endocrine system is an important regulatory system that has been linked to specific psychological disorders, such as anxiety and mood disorders, in both children and adults. There are several endocrine glands, and each produces a particular hormone that it releases into the bloodstream. The *adrenal* glands (located on top of the kidneys) are most familiar because they produce **epinephrine** (also known as adrenaline) in response to stress. Epinephrine energizes us and prepares our bodies for possible threats or challenges. The *thyroid* gland produces the hormone thyroxine, which is needed for proper energy metabolism and growth and is implicated in certain eating disorders of children and youths (discussed in Chapter 14). Finally, the *pituitary* gland, located deep within the brain, orchestrates the body's functions by regulating a variety of hormones, including estrogen and testosterone. Because the endocrine system is closely related to the immune system, which protects us from disease and many other biological threats, it is not surprising that it is implicated in a variety of disorders, particularly health- and stress-related disorders (discussed in Chapter 13).

One brain connection that is implicated in some psychological disorders involves the hypothalamus and the endocrine system. The hypothalamus carries out the commands it receives from the adjacent pituitary gland and other hormones, such as those regulating hunger and thirst. The pituitary gland in turn stimulates the adrenal glands to produce epinephrine and the stress hormone known as **cortisol**. The hypothalamus control center, coupled with the pituitary and adrenal glands, make up a regulatory system in the brain known as the **hypothalamic–pituitary–adrenal (HPA) axis**. A Closer Look 2.2 explains how this axis has been implicated in several psychological disorders, especially those connected to a person's response to stress and ability to regulate emotions, such as anxiety and mood disorders.

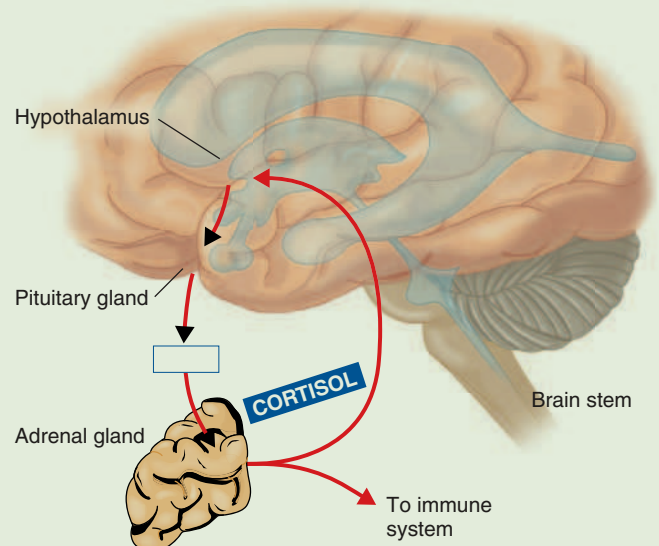
### Neurotransmitters

Neurotransmitters are similar to biochemical currents in the brain. These currents develop in an organized fashion to make meaningful connections that serve larger functions such as thinking and feeling. Neurons that are more sensitive to one type of neurotransmitter, such as serotonin, tend to cluster together and form **brain circuits**, which are paths from one part of the brain to another (R. R. Dean et al., 1993). Tens of thousands of these circuits operate in our brains. Brain

## A CLOSER LOOK 2.2

### The HPA Axis and Stress Regulation

The HPA axis is a central component of the brain's neuro-endocrine response to stress. The hypothalamus, when stimulated, secretes the corticotropin-releasing hormone (CRH), which stimulates the pituitary gland to secrete the adrenocorticotrophic hormone (ACTH) into the bloodstream. ACTH then causes the adrenal glands to release cortisol, the familiar stress hormone that arouses the body to meet a challenging situation. This system, like many others, works on a feedback loop: Cortisol modulates the stress response by acting on the hypothalamus to inhibit the continued release of CRH (Sternberg & Gold, 1997). Researchers are discovering that this important feedback loop, which regulates our level of arousal and apprehension, can be seriously disrupted or damaged by various traumatic and uncontrollable events. These events can cause a child or adolescent to maintain a state of fear or alertness that becomes toxic over prolonged periods of time (Bremner, 2007).



circuits and neurotransmitters relate to particular psychological disorders, permitting more targeted treatments. Psychoactive drugs work by either increasing or decreasing the flow of various neurotransmitters—for example, increasing dopamine in the case of stimulant medications for ADHD (Vitiello, 2007). However, changes in neurotransmitter activity may make people *more likely* or *less likely* to exhibit certain kinds of behavior in certain situations, but they do not cause the behavior directly. Table 2.1 summarizes the four neurotransmitter systems most often mentioned in connection with psychological disorders.

## Section Summary

### Biological Perspectives

- Brain functions undergo continual changes, described as neural plasticity, as they adapt to environmental demands.
- Genetic influences depend on the environment. Genetic endowment influences behavior, emotions, and thoughts; environmental events are necessary for this influence to be expressed.
- Gene–environment interactions (G×E) explain how the environment shapes our genotype through a process known as “epigenetics.”

- Neurobiological contributions to abnormal child behavior include knowledge of brain structures, the endocrine system, and neurotransmitters, all of which perform their functions in an integrated, harmonious fashion.

## PSYCHOLOGICAL PERSPECTIVES

Each psychological perspective described in this section has value in explaining the development of psychopathology. At the same time, each perspective has certain limitations and may be more, or less, applicable to a particular disorder or situation. Remember, transactions between environmental and individual influences cause abnormal behavior. Children’s inherited characteristics coupled with the experiences and influences in their environment make them the way they are today. Also, some seemingly maladaptive behaviors, such as excessive fearfulness or watchfulness, may in fact be understandable when considered in the context of the child’s environment if it involves parental abuse or school violence.

Our interest in psychological bases for abnormal behavior begins with a focus on the role of emotions in establishing an infant’s ability to adapt to new surroundings. Infants use emotion to organize new information

TABLE 2.1 | Major Neurotransmitters and Their Implicated Roles in Psychopathology

Neurotransmitter	Normal Functions	Implicated Role in Psychopathology
Benzodiazepine-GABA	Reduces arousal and moderates emotional responses, such as anger, hostility, and aggression Is linked to feelings of anxiety and discomfort	Anxiety disorder
Dopamine	May act as a <i>switch</i> that turns on various brain circuits, allowing other neurotransmitters to inhibit or facilitate emotions or behavior Is involved in exploratory, extroverted, and pleasure-seeking activity	Schizophrenia Mood disorders Attention-deficit/hyperactivity disorder (ADHD)
Norepinephrine	Facilitates or controls emergency reactions and alarm responses Plays a role in emotional and behavioral regulation	Not <i>directly</i> involved in specific disorders (acts generally to regulate or modulate behavioral tendencies)
Serotonin	Plays a role in information and motor coordination Inhibits children’s tendency to explore their surroundings Moderates and regulates a number of critical behaviors, such as eating, sleeping, and expressing wanger	Regulatory problems, such as eating and sleep disorders Obsessive–compulsive disorder Schizophrenia and mood disorders

Source: © Cengage Learning ®

and avoid potential harm. Early relationships between infants and caregivers further provide structure and regulation for these emotional responses. As the child develops, cognitive processes such as self-efficacy play a larger role in assisting the young child to make sense of the world and to reorganize earlier functions that may be unnecessary or even maladaptive for new challenges involving language development, peer interactions, and similar skills. As with brain development, things can go wrong at any point along this continuum of emotional and cognitive development as a function of the child's interaction with the environment.

## Emotional Influences

Emotions and affective expression are core elements of human psychological experience. From birth, they are a central feature of infant activity and regulation (Sroufe, 2005). Throughout our lives, emotional reactions assist us in our fight-or-flight response. From an evolutionary perspective, emotions give special value to events and make particular actions most likely to occur. In effect, emotions tell us what to pay attention to and what to ignore, what to approach and what to avoid. Given their important job, and backed up by powerful stress-regulating hormones such as cortisol, emotions are critical to healthy adaptation.

Interest in emotional processes and their relation to abnormal child behavior has grown considerably in recent years (Arsenio & Lemerise, 2010). Children's emotional experiences, expressions, and regulation affect the quality of their social interactions and relationships and thus are at the foundation of early personality development. Researchers are discovering a wealth of information demonstrating the influential role of emotion in children's lives. Emotions not only serve as important internal monitoring and guidance systems designed to appraise events as either beneficial or dangerous, but they also provide motivation for action (Hastings, Zahn-Waxler, & Usher, 2007).

Children have a natural tendency to attend to emotional cues from others, which helps them learn to interpret and regulate their own emotions. They learn, from a very young age, through the emotional expressions of others (Bretherton & Munholland, 2008). Within the first year of life, infants learn the importance of emotions for communication and regulation; by their second year, they have some ability to attribute cause to emotional expression. Of particular interest to abnormal child psychology is the finding that children look to the emotional expression and cues of their caregivers to provide them with the information needed to formulate a basic understanding



Stockbyte/Getty Images

The ability to infer another's emotional state by reading facial, gestural, postural, and vocal cues has an important adaptive function, especially for infants and toddlers

of what's going on. To young children, emotions are a primary form of communication that permits them to explore their world with increasing independence (LaFreniere, 2000).

## Emotion Reactivity and Regulation

We can divide emotional processes into two dimensions: emotion reactivity and emotion regulation. **Emotion reactivity** refers to individual differences in the threshold and intensity of emotional experience, which provide clues to an individual's level of distress and sensitivity to the environment. **Emotion regulation**, on the other hand, involves enhancing, maintaining, or inhibiting emotional arousal, which is usually done for a specific purpose or goal (Perlman & Pelphrey, 2011; Southam-Gerow & Kendall, 2002). Jorge, for example, was emotionally reactive to certain academic tasks; he became upset and couldn't concentrate. This emotional reaction could lead to poor regulation, resulting in Jorge becoming distraught and difficult to manage at times. Once again, a transactional process is at work, whereby emotional reactions prompt the need for regulation, which influences further emotional expression.

A further distinction can be made between problems in *regulation* and problems in *dysregulation*. Regulation problems involve weak or absent control structures, such as Jorge's trouble concentrating in class; dysregulation means that existing control structures operate maladaptively (Izard et al., 2006). For example, a child may be fearful even when there is no reason in the environment to be fearful or anxious.

Children's emotion regulation abilities, as often shown by their emotion reactivity and expression, are important signals of normal and abnormal



development. Emotions also help young children learn more about themselves and their surroundings, as part of learning to identify and monitor their feelings and behavior. The child–caregiver relationship plays a critical role in this process because it provides the basic setting for children to express emotions and to experience caring guidance and have limits placed on them. *Authoritative* parents establish limits that are both sensitive to the child’s individual development and needs and demanding of the child to foster self-control and healthy regulation (Maccoby & Martin, 1983). Because of its vital role in emotional development, the child–caregiver relationship will surface again and again when we discuss childhood disorders.

Some forms of emotion dysregulation may be adaptive in one environment or at one time but maladaptive in other situations. Children who have been emotionally and sexually abused may show shallow emotions, known as “numbing,” which is a symptom of a post-traumatic stress reaction that serves to protect the child from overwhelming pain and trauma (described in Chapter 12). If numbing becomes a characteristic way of coping with stressors later in life, however, it may interfere with adaptive functioning and long-term goals.

### Temperament and Early Personality Styles

You hear it all the time: “She was an easy baby, right from the first day I brought her home from the hospital,” or “Sleep? What’s that? Since little Freddy was born, we are up all hours of the night, feeding, changing, and trying to soothe him.” Unmistakably, some infants are more placid than others, some are more active, and some are more high-strung, and these differences are often recognizable in the first few days or weeks of life (Thomas & Chess, 1977). What relevance does this have to abnormal development?

The development of emotion regulation or dysregulation is thought to derive from both socialization and innate predispositions, or temperament. **Temperament** refers to the child’s organized style of behavior that appears early in development, such as fussiness or fearfulness, which shapes the child’s approach to his or her environment, and vice versa. Temperament is a subset of the broader domain of personality, so it is often considered an early building block of personality (Kagan, 2013). Three primary dimensions of temperament are linked to normal and abnormal child development (Rothbart & Posner, 2006):

1. *Positive affect and approach.* This dimension describes the “easy child,” who is generally approachable and adaptive to his or her environment and possesses the ability to regulate basic functions of eating, sleeping, and elimination relatively smoothly.

2. *Fearful or inhibited.* This dimension describes the “slow-to-warm-up child,” who is cautious in his or her approach to novel or challenging situations. Such children are more variable in self-regulation and adaptability and may show distress or negativity toward some situations.
3. *Negative affect or irritability.* This dimension describes the “difficult child,” who is predominantly negative or intense in mood, not very adaptable, and arrhythmic. Some children with this temperament show distress when faced with novel or challenging situations, and others are prone to general distress or irritability, including when limitations are placed on them.

These temperament dimensions, or early self-regulatory styles, have been linked to distinct brain activity that underlies a child’s cautious versus more eager approach to novel situations, which supports the conclusion that temperament is established during early brain development (Berger & Berger, 2011; Perlman & Pelphrey, 2010). Early infant temperament may be linked to psychopathology or risk conditions in several ways. In some instances, a temperamental style may be highly related to a particular disorder, such as anxiety. In other instances, the condition may develop from the features closely related to temperament, but the condition itself may appear unrelated (Rothbart & Posner, 2006). For example, an infant’s extreme sensitivity to emotional stimuli may contribute to a tendency to withdraw from others as a toddler or preschooler; over time, this tendency may transform into an interpersonal style characterized by a self-reported lack of feeling toward others and, consequently, peer rejection or other risk conditions. Also, infant negative affect can contribute to maternal withdrawal or indifference, leading to insecure attachment and its associated risk conditions.



Courtesy of David Wolfe

Young children with an irritable temperament may show distress when demands are placed on them



Temperament may influence later development by affecting a child's development of self-control. Notably, a fearful or cautious temperament style at a young age is linked to better self-control, presumably because the child is less impulsive and takes his or her time before making choices (Tarullo, Obradovic, & Gunnar, 2009). But like most aspects of child psychology, temperament and self-control have to achieve a reasonable balance—a high degree of self-control is a positive thing for the more exuberant toddlers, but can be problematic for more shy youngsters because others view them as socially withdrawn (White et al., 2011). Thus, a balance between emotional reactivity and self-control, known as *self-regulation*, is the best formula for healthy, normal adjustment.

**Personality disorders** are rarely diagnosed until late adolescence or early adulthood, by which time it is evident that the person's pattern of behavior or inner experience is enduring and problematic (Shiner, 2007). For this reason, personality disorders are not discussed in the following abnormal child psychology chapters. A brief overview is provided below to assist students in gaining familiarity with the concept of personality disorders as they may apply to children and adolescents.

As described in the DSM-5 (APA, 2013), personality disorders include antisocial, borderline, histrionic, paranoid, schizoid, schizotypal, narcissistic, avoidant, dependent, and obsessive-compulsive. These 10 types share a common set of criteria:

- ▶ An enduring pattern of inner experience and behavior that deviates noticeably from the expectations of the individual's culture. For example, one individual may show very different ways of thinking, feeling, and behaving as compared with others in his or her culture.
- ▶ This enduring pattern of unusual thinking, feeling, or behaving is inflexible and pervasive across a wide range of situations, and results in clinically significant distress or impairment in functioning.

Additional considerations should be used in diagnosing those rare cases of personality disorders among children and adolescents (APA, 2013, p. 647):

- ▶ Personality disorder categories may be applied to children or adolescents in those relatively unusual instances when the individual's particular maladaptive personality traits appear to be pervasive, persistent, and unlikely to be limited to a particular developmental stage or another mental disorder.
- ▶ To diagnose a personality disorder in an individual under age 18, the features must have been present for at least 1 year. The one exception to this is antisocial

personality disorder, which cannot be diagnosed in individuals under the age of 18 years.

Remember, some personality traits that may be regarded as pathological during adulthood are considered relatively normal during adolescence (such as mood swings and impulsivity!). For this reason, the diagnostic criteria emphasize that a personality trait must *deviate markedly* from cultural expectations to be considered symptomatic of a personality disorder.

The lifelong significance of emotion reactivity and regulation is backed up by strong empirical evidence linking early behavioral styles to adult personality characteristics 30 years later, as described in A Closer Look 2.3.

## Behavioral and Cognitive Influences

Behavioral and cognitive explanations for abnormal child behavior emphasize principles of learning and cognition, which shape children's behavior and their interpretation of things around them. Behavioral and cognitive approaches differ essentially in the extent to which they apply cognitive concepts and procedures to the understanding of behavior. Applied behavior analysis, at one end of this continuum, focuses primarily on observable behavior and rejects the notion that cognitive mediation is necessary for explaining behavior. At the other end is social learning theory, which relies more broadly on cognitive processes and explanations.

Most behavioral explanations assume that the child is best understood and described by behavior in a particular situation rather than in terms of stable traits. Although a child's particular learning history is of interest, behavioral methods focus on the most pragmatic, parsimonious explanation for a particular problem behavior. By the same reasoning, this approach recognizes that successfully changing a problem behavior does not imply knowledge about its origin, but rather emphasizes contemporaneous causes, referred to as *controlling variables*. Cognitive theorists, on the other hand, are interested in how certain thought patterns develop over time and how they relate to particular behavioral strategies, such as problem solving. Following is a refresher on some of the major behavioral and cognitive theories.

## Applied Behavior Analysis (ABA)

Based on B. F. Skinner's classic studies, ABA examines the relationships between behavior and its antecedents and consequences, which is known as a *functional approach* to behavior. No implicit assumptions are made about underlying needs or motives that contribute to abnormal behavior; ABA describes and tests

## Similarities in Children's Early Behavioral Styles and Adult Personality and Well-Being

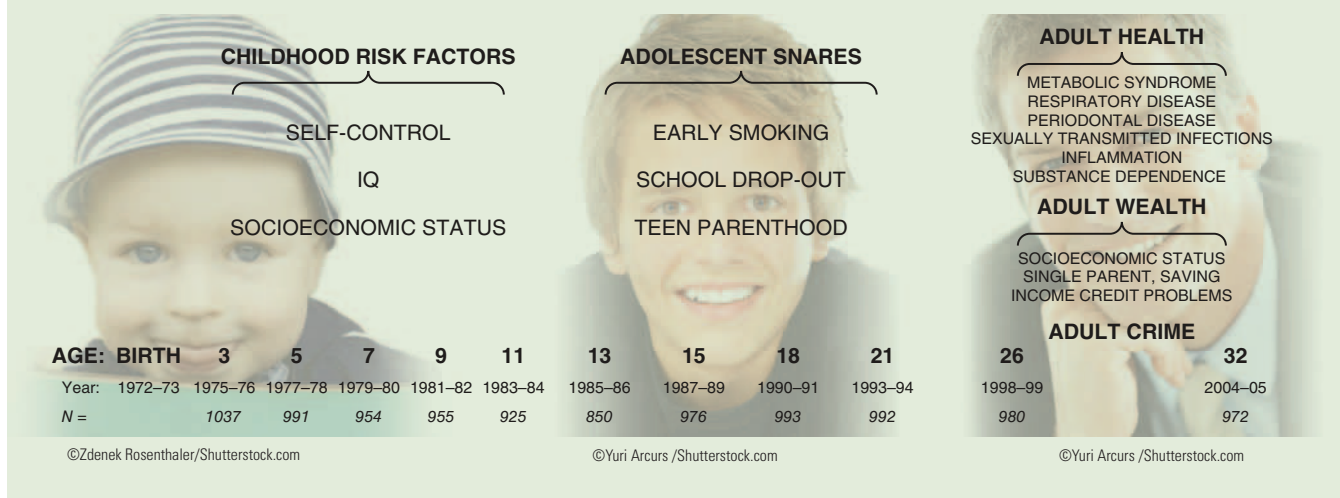
Caspi et al. (2003) conducted a landmark study of the connection between early temperament style in children and their later personality traits as adults. These researchers observed more than 1,000 children at age 3 and evaluated their temperament along five dimensions: undercontrolled, inhibited, confident, reserved, and well-adjusted. Twenty-three years later they conducted an assessment of these same individuals as adults, and found some interesting consistencies in "personality style" over this length of time.

When observed at age 3, children classified as undercontrolled (10% of the sample) were rated as irritable, impulsive, and restless. At age 26, these same individuals scored high on personality traits linked to "negative emotionality." They were easily upset and most likely to overreact to minor events, and they reported feeling mistreated, deceived, and betrayed by others. Children classified as inhibited (8% of the sample) were considered a bit fearful and easily upset, and by age 26 they were described as unassertive and took little pleasure in life. The researchers found that the remaining three temperament groups did not display such dramatic personality profiles as adults, but a considerable amount of continuity in style did

occur over time. Confident children (28% of the sample) were seen as friendly and eager to explore, and they were the least conventional and most extroverted as adults. Reserved children (15% of the sample) were described as timid and somewhat uncomfortable, and by adulthood they described themselves as unassertive and were seen by others as being introverted. Finally, the well-adjusted children (40% of the sample), who behaved in an age- and situation-appropriate manner at age 3, showed adult personality traits that closely resembled the average, well-adjusted adult.

The story doesn't end there. The researchers have continued to follow this sample and have determined that their degree of self-control as children predicted their adult health, substance use problems, personal finances, and criminal offenses in their early 30s (Moffitt et al., 2011). These findings provide the strongest evidence to date that children's early behavioral styles forecast how they will typically behave, think, and feel as adults. They also imply that tremendous benefits to individuals and society could result if large-scale programs to teach children self-control skills were offered at an early age.

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functional relationships between stimuli, responses, and consequences. ABA is based on four primary operant learning principles, which explain how behaviors are acquired or changed as a result of particular consequences. These four principles are probably familiar to you: *Positive* and *negative reinforcement* are any actions that increase the target response; *extinction* and *punishment* decrease a response. Children are quite accomplished at learning the contingencies between their behavior and its consequences, and have an uncanny ability to apply some of their own! These principles of operant conditioning remain influential across

a variety of applied areas—from basic experimental research to clinical treatment (DeGrandpre, 2000).

### Classical Conditioning

Based on the extension of Pavlov's famous learning trials and Watson's experiments with Little Albert (see Chapter 1), classical conditioning explains the acquisition of deviant behavior on the basis of paired associations between previously neutral stimuli (such as math problems) and unconditioned stimuli (such as food or criticism). Any neutral event can become a *conditioned stimulus* if it is paired enough times with an event that

already elicits a certain response. Paired associations can help explain many adjustment problems in children and adolescents, although we do not typically know what the original association may have been. In addition, more than one learning paradigm may occur at the same time. For this reason, dual learning explanations for undesirable behavior are common (that is, combinations of features of both operant and classical conditioning).

Returning to Jorge's problem, imagine that he associates reading (a neutral event) with humiliation or anxiety (unconditioned stimuli), which prompts him to escape or avoid the activity. His avoidance, in turn, is negatively reinforced by its consequences: His anxiety decreases and he avoids feelings of humiliation. This analysis considers both instrumental (operant) and respondent (classical) conditioning as part of his learning history. Can you think of possible environmental changes or contingencies that might modify Jorge's behavior in a desirable fashion?

### Social Learning and Cognition

**Social learning** explanations consider not only overt behaviors such as Jorge's school problems, but also the role of possible *cognitive mediators* that may influence the behaviors directly or indirectly. According to Albert Bandura's (1977, 1986) social learning explanation, behavior may be learned not only by operant and classical conditioning, but also indirectly through *observational* (vicarious) learning. Children can learn a new behavior merely by watching another person model the behavior, without apparent reinforcement or practice.



Ariel Skelley/Blend Images/Corbis

Children's increasing cognitive abilities play a role in both normal and abnormal development

Social learning also incorporates the role of social cognition in acquiring desirable and undesirable behavior. **Social cognition** relates to how children think about themselves and others, resulting in the formation of mental representations of themselves, their relationships, and their social world. These representations are not fixed, but are continually updated on the basis of maturation and social interaction (Herrmann et al., 2007). Children's ongoing cognitive development in reasoning, problem solving, and making attributions helps them make sense of who they are and how they relate to their surroundings. Moreover, social learning and social-cognitive viewpoints also consider the role of affect and the importance of contextual variables, such as family and peers, in both the origins and maintenance of problem behaviors (Arsenio & Lemerise, 2010).

Like individual differences in temperament and emotion regulation, crucial differences exist in how children process information and make sense of their social worlds. Like adults, children have a natural desire to evaluate their behavior in various circumstances, especially those involving some element of possible failure, harm, or personal risk. For some children, teens, and adults, these self-appraisals may be based on faulty beliefs or distortions; for others, an attributional bias about their ability or the intentions of others leads them to reinterpret the event in a way that fits their preexisting belief ("I got a good grade in math because the exam was too easy"; "He's a jerk, so who cares if I tease him?") (Lansford et al., 2010).

Since the first description of observational learning in the early 1960s, cognitive models have grown in both richness and complexity, and their constructs appear quite often throughout this text. Cognitive distortions, insufficient cognitive mediation, and attributional styles and expectations are important determinants in the development and treatment of behavioral and emotional problems in children and adolescents (Bierman et al., 2010).

## Section Summary

### Psychological Perspectives

- Emotion reactivity and regulation are critical aspects of early and subsequent development, affecting the quality of children's social interactions and relationships throughout their life span.
- Three major approaches to abnormal behavior, based on principles of learning, are applied behavior analysis, principles of classical conditioning, and social learning and social cognition theories. Social learning and social cognition theories place more significance on cognitive processes than overt behavior.



## FAMILY, SOCIAL, AND CULTURAL PERSPECTIVES

In addition to biological and psychological influences, children's normal and abnormal development depends on social and environmental contexts. Understanding context requires a consideration of both *proximal* (close-by) and *distal* (further-removed) events, as well as those that impinge directly on the child in a particular situation at a particular time. We consider these wide-ranging environmental conditions and learning experiences in relation to the family and peer context and the social and cultural context.

What exactly do we mean when we refer to a child's environment? Family? Peer groups? Clean air? A child's environment is constantly changing in relation to its many components, much as a lake or stream is affected by a proximal event, such as a rainstorm, as well as more distal events, such as the seasons.

Environmental influences include shared and non-shared types. **Shared environment** refers to environmental factors that produce similarities in developmental outcomes among siblings in the same family. For example, if siblings are more similar than expected from only their shared genetics, this implies an effect of the environment they share, such as being exposed to marital conflict or poverty, or being parented in a similar manner. In the example of identical twins, shared environmental influence is estimated indirectly from correlations between twins by subtracting the heritability estimate from the MZ twin correlation. **Nonshared environment**, which refers to environmental factors that produce behavioral differences among siblings, can then be calculated by subtracting the MZ twin correlation from 1.0 (Pike & Kretschmer, 2009; Pike & Plomin, 1996).

Interestingly, it is nonshared environmental factors that create differences among siblings that seem to contribute to a large portion of the variation. Environmental factors that have been postulated as nonshared include differential treatment by parents, peer influences, and school environment (Eley & Lau, 2005).

● Figure 2.8 depicts Bronfenbrenner's (1977) ecological model, which shows the richness and depth of the various layers of a child's environment by portraying it as a series of nested and interconnected structures. Note that the child is at the center of this sphere of influence, which contains various levels interconnected in meaningful ways. The child's immediate environment begins with family members and home surroundings, but it quickly grows more complex as the child enters preschool, visits neighborhood parks, and makes friends.

Social settings also affect the child even when the child does not directly experience these influences. Parents' friends and jobs, the availability of family support

services such as health and welfare programs, and similar community resources and activities that are positive and negative make up the child's larger social framework (Sameroff, 2010). Finally, though far removed from the child's day-to-day activities, cultural ideology or identity governs how children should be treated (the sanctioning of corporal punishment), what they should be taught, and what goals are important to achieve (Achenbach & Rescorla, 2007). These levels of environmental influences and their reciprocal connections (they affect the child, and the child affects them) are key elements in understanding the nature of child abuse and neglect and many child and adolescent disorders.

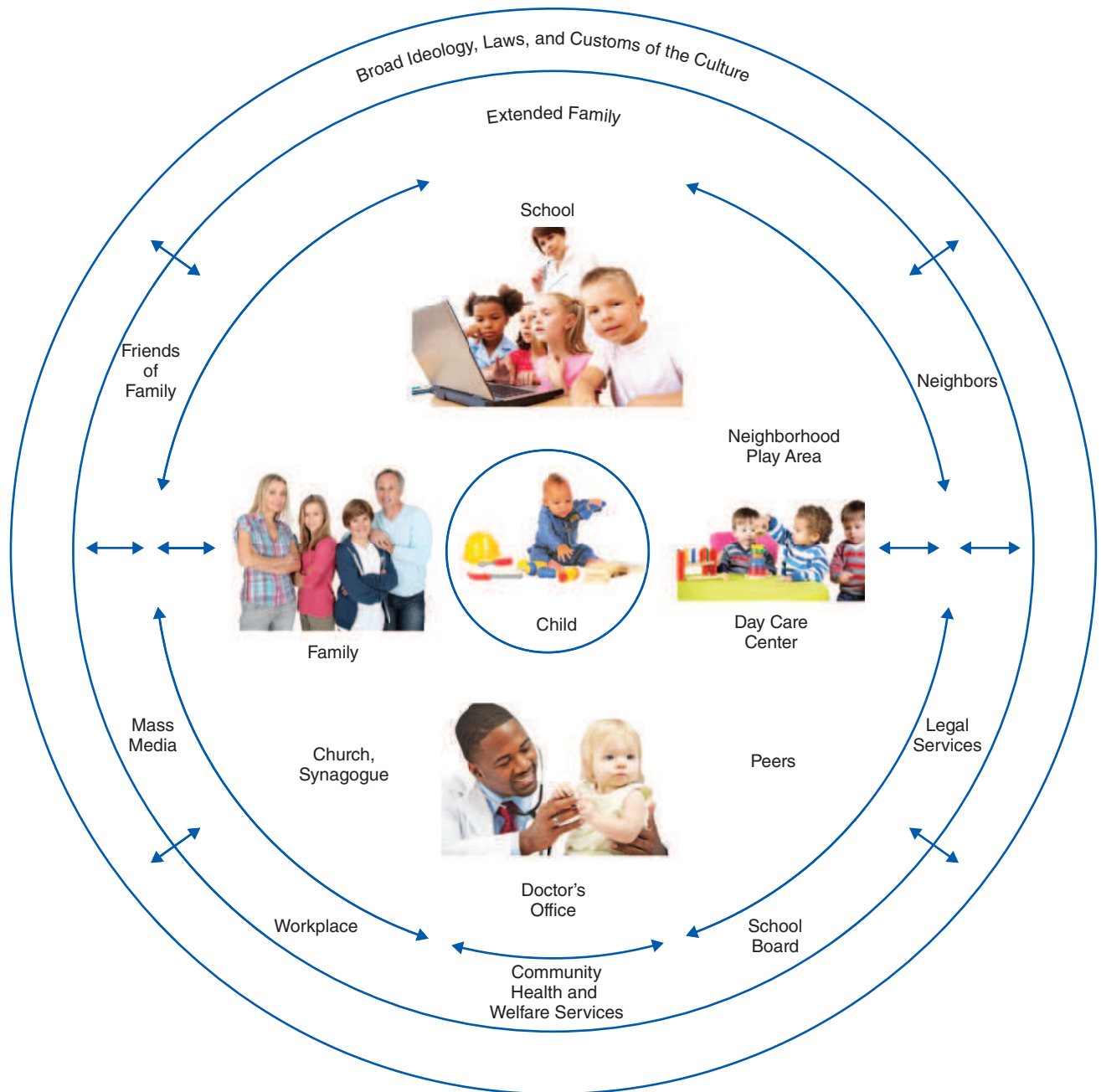
### Infant–Caregiver Attachment

The study of abnormal development has profited from extensive work on child–caregiver relationships; this has painted a dramatic picture of the importance of early caregiver attachment to a child's emotional health (Sweeney, 2007). British child psychiatrist John Bowlby (1973, 1988) integrated aspects of evolutionary biology with existing psychodynamic conceptions of early experiences to derive his theory of attachment. **Attachment** refers to the process of establishing and maintaining an emotional bond with parents or other significant individuals. This process is ongoing, typically beginning between 6 and 12 months of age, and provides infants with a secure, consistent base from which to explore and learn about their world (Sroufe, 2005).

In attachment theory, instinctive behaviors are not rigidly predetermined but rather become organized into flexible, goal-oriented systems through learning and goal-corrected feedback. Bowlby reasoned that infants are “preadapted” to engage in relationship-enhancing behaviors such as orienting, smiling, crying, clinging, signaling, and, as they learn to move about, proximity seeking. In order to survive, however, infants must become attached to a specific person (or persons) who is available and responsive to their needs. Adults are similarly equipped with attachment-promoting behaviors to respond to an infant's needs, which are complementary to the needs of the infant—smiling, touching, holding, and rocking.

The evolving infant–caregiver relationship helps the infant regulate her or his behavior and emotions, especially under conditions of threat or stress. Accordingly, attachment serves an important stress-reduction function. The infant is motivated to maintain a balance between the desire to preserve the familiar and the desire to seek and explore new information. Self-reliance develops when the attachment figure provides a secure base for exploration (Bretherton & Munholland, 2008). Moreover, a child's *internal working model* of relationships—what he or she expects





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● **FIGURE 2.8** | An ecological model of environmental influences.

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from others and how he or she relates to others—emerges from this first crucial relationship and is carried forward into later relationships. The three major organized patterns of attachment (and one disorganized pattern) are summarized in Table 2.2, along with their theoretical and empirical links to various forms of psychopathology. Keep in mind, however, that attachment features constitute only one aspect of human relationships. Insecure attachments have been implicated

in a number of childhood disorders, but no one-to-one correspondence exists between specific patterns of attachment and particular disorders (Sroufe, 2005).

## The Family and Peer Context

Child psychopathology research has increasingly focused on the role of the family system, the complex relationships within families, and the reciprocal influences among

**TABLE 2.2** | Types of Attachment and Their Relation to Disordered Outcomes

Type of Attachment	Description during Strange Situation <sup>1</sup>	Possible Influence on Relationships	Possible Disordered Outcomes
<b>Secure</b>	Infant readily separates from caregiver and likes to explore. When wary of a stranger or distressed by separation, the infant seeks contact and proximity with caregiver; the infant then returns to exploration and play after contact.	Individuals with secure attachment histories tend to seek out and make effective use of supportive relationships.	Although individuals with secure attachments may suffer psychological distress, their relationship strategy serves a protective function against disordered outcomes.
<b>Insecure Anxious, avoidant type</b>	Infant engages in exploration, but with little affective interaction with caregiver. Infant shows little wariness of strangers, and generally is upset only if left alone. As stress increases, avoidance increases.	As children and adults, individuals with an insecure, <i>avoidant pattern of early attachment</i> tend to mask emotional expression. They often believe they are vulnerable to hurt, and others are not to be trusted.	Conduct disorders; aggressive behavior; depressive symptoms (usually as a result of failure of self-reliant image).
<b>Insecure Anxious, resistant type</b>	Infant shows disinterest in or resistance to exploration and play, and is wary of novel situations or strangers. Infant has difficulty settling when reunited with caregiver, and may mix active contact-seeking with crying and fussiness.	As children and adults, individuals with an <i>insecure, resistant pattern of early attachment</i> have difficulties managing anxiety. They tend to exaggerate emotions and maintain negative beliefs about the self.	Phobias; anxiety; psychosomatic symptoms; depression.
<b>Disorganized, disoriented type (not an organized strategy)</b>	Infant lacks a coherent strategy of attachment. Appears disorganized when faced with a novel situation and has no consistent pattern of regulating emotions.	Individuals with disorganized, disoriented style show an inability to form close attachments to others; may show indiscriminate friendliness (little selective attachment).	No consensus, but generally a wide range of personality disorders (van Ijzendoorn et al., 1999).

<sup>1</sup>The Strange Situation is a method of assessing infant–caregiver attachment. It involves a series of increasingly stressful separations and reunions that resemble typical daily occurrences, such as meeting strangers and being left alone (Ainsworth et al., 1978).

Note: The relationships between attachment styles and abnormal development are based on both theoretical and empirical findings, summarized in E. A. Carlson and Sroufe (1995). (Sroufe et al., 1999)

Source: © Cengage Learning ®

various family subsystems. There is a need to consider the processes occurring within disturbed families, and the common and unique ways these processes affect both individual family members and subsystems. Within the family, the roles of the mother–child and marital subsystems have received the most research attention, with less attention being given to the role of siblings (Defoe et al., 2013) or fathers (Smith et al., 2012).

Family systems theorists argue that it is difficult to understand or predict the behavior of a particular family member, such as a child, in isolation from other family members (P. A. Cowan & C. P. Cowan, 2006). This view is in line with our earlier discussion of underlying assumptions about children’s abnormal development—*relationships*, not individual children or teens, are often the crucial focus. This view, however, is often at odds with mainstream psychological and psychiatric approaches to psychopathology, yet it is compatible with developmental processes.

More and more, the study of individual factors and the study of the child’s context are being seen as mutually compatible and beneficial to both theory and intervention. Furthermore, the manner in which the family, as a unit, deals with typical and atypical stress plays an instrumental role in children’s adjustment and adaptation. The outcome of stressful events depends in part on the nature and severity of the stress, the level of family functioning prior to the stress, and the family’s coping skills and resources. Stress that is positive or tolerable, such as changing schools or a decline in family income, often brings about change, growth, and reorganization of families and is not usually harmful to children’s development (Masten & Wright, 2010; Rutter, 2011a). However, some forms of stress are considered “toxic” to child development because they cause strong, frequent, and/or prolonged activation of the child’s stress response in the absence of adult protection and support (Shonkoff, 2010). Some of the more influential family-related issues raised in

## The “Core Story” of Development

For several years a group of neuroscientists, developmental psychologists, pediatricians, and others have been working on a “core story” of child development in an effort to translate complex ideas and findings into actions that reduce social problems and improve children’s chances at successful development. We thought a brief list of their core story themes would provide a nice summary of the important issues you have read about in this chapter:

1. Child development is a foundation for community development and economic development because capable children become the foundation of a prosperous and sustainable society.
2. Brain architecture is constructed through an ongoing process that begins before birth and continues into adulthood. The quality of that architecture establishes either a sturdy or a fragile foundation for all the capabilities and behavior that follow.
3. Skill begets skill as brains are built in a hierarchical fashion, from the bottom up. Increasingly complex circuits and skills build on simpler circuits and skills over time.
4. The interaction of genes and experience shapes the circuitry of the developing brain. Young children serve up frequent

invitations to engage with adults, who are either responsive or unresponsive to their needs. This “serve and return” process is fundamental to the wiring of the brain, especially in the early years.

5. Cognitive, emotional, and social capacities are intertwined. Learning, behavior, and both physical and mental health are highly interrelated over the life course. You cannot address one domain without affecting the others.
6. Although manageable levels of stress are normative and growth promoting, toxic stress in the early years (e.g., from severe poverty, serious parental mental health impairment such as maternal depression, child maltreatment, and/or family violence) can damage developing brain architecture and lead to problems in learning and behavior, as well as increased susceptibility to physical and mental illness.
7. Brain plasticity and the ability to change behavior decrease over time. Consequently, getting it right early leads to better outcomes and is less costly, both to society and to individuals, than trying to fix it later.

Source: Based on Shonkoff & Bales, 2011.

Supported by the National Scientific Council on the Developing Child and the FrameWorks Institute.

discussions of childhood disorders throughout this book are parental depression, child abuse, parental substance abuse, divorce, marital violence, poverty, and parental criminality.

Although quite distinct, these major family and individual issues share a common thread in terms of their impact on child development: They disrupt, disturb, or interfere with consistent and predictable child care and basic necessities. Such disruption or impairment, in turn, interferes with children’s ongoing development to such an extent that their ability to manage stress and form satisfactory relationships with peers, teachers, and other adults cascade into lifelong psychological difficulties (Cox et al., 2010; Obradović, Burt, & Masten, 2010).

A Closer Look 2.4 provides a useful summary of the concepts discussed throughout this chapter to assist readers in understanding the major processes affecting normal and abnormal development.

## Section Summary

### Family, Social, and Cultural Perspectives

- Attachment approaches to abnormal child behavior emphasize the evolving infant–caregiver relationship,

which helps the infant regulate behavior and emotions, especially under conditions of threat or stress.

- Children’s normal and abnormal development depends on a variety of social and environmental settings, including the child’s family and peer system and the larger social and cultural context.

## LOOKING AHEAD

Society’s understanding of children’s and adolescents’ healthy, normal development has been gradually evolving toward a more holistic, health-promoting orientation, which is impacting the definitions and services related to children’s mental health (Barry, 2009; Lewin-Bizan, Bowers, & Lerner, 2010). This emerging dynamic, interactive view of health recognizes the importance of both individual and environmental factors in achieving positive development. The neuroscience and ecological perspectives on human health and behavior add momentum to this growing view because they consider human adaptation within its normal context.

Health and successful adaptation are today seen as worthy and appropriate aspects of the study of abnormal

child and adolescent psychology. Along with an increased emphasis on **health promotion**, today's research and thinking accept the notion that various childhood disorders share many clinical features and causes. Health promotion encourages changes, opportunities, and competence to achieve one's health potential (R. M. Kaplan, 2000; Ungar, 2010). When applied to children, this view recognizes the multicausal and interactive nature of many child and adolescent psychological disorders and the importance of contextual factors. It also speaks to the importance of balancing the abilities of individuals with the challenges and risks of their environments (Kirmayer et al., 2011; Masten & Wright, 2010). Throughout the text we return to the many ways abnormal child and adolescent psychology can be studied in a developmentally sensitive, systems-oriented manner.

These conceptual shifts are gradually changing the face of mental health and educational services for children and youths, with important implications for pediatrics, psychology, psychiatry, social work, nursing, education, and child development. How individuals think about health, how daily life is organized and experienced, how social policy is developed, how social resources are allocated, and how people are trained to implement these policies have reached their greatest potential in history for achieving major improvements in services to assist younger populations who cannot speak for themselves. Although this tremendous impact on the field of mental health, and on children and youths in particular, has not yet become reality, we are encouraged by how society has progressed in addressing the needs of children.

## Study Resources

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behavioral genetics 40  
brain circuits 43  
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# 3

## Research

*If we knew what it was we were doing, it would not be called research, would it?*

—Albert Einstein (1879–1955)

### CHAPTER PREVIEW

#### A SCIENTIFIC APPROACH

When Science Is Ignored

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Common Research Questions  
and Topics

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Concerns

IN THIS CHAPTER, WE look at the process of research and the many challenges faced by those who study children and adolescents with problems and their families. **Research** is generally viewed as a systematic way of finding answers to questions—a method of inquiry that follows certain rules.

## A SCIENTIFIC APPROACH

*The aim of science is not to open a door to infinite wisdom, but to set a limit to infinite error.*

—Brecht, *The Life of Galileo*

Scientific research strategies can be used to understand children with problems and how they can be helped. A scientific approach is an organized way of investigating claims that improves on using common sense and casual observations. However, science is more than just organized common sense. Science requires that a claim be based on theories backed up by data from well-designed studies that test alternative explanations and that observations be checked and repeated before conclusions are drawn (Rutter & Solantaus, 2014). A scientific approach is especially important in abnormal child psychology. Although relationships between variables of interest may seem obvious when observed casually—a child consumes too much sugar and becomes hyperactive—these relationships are often not as straightforward as they seem. What we initially may think is a simple cause-and-effect connection may be obscured by complex interactions and a combination of variables. Parents and professionals who work with children have a tendency to interpret and relate information according to their own belief systems and experiences. These relationships sometimes become firmly established, independent of whether they are supported by facts. Even when new information comes along, such as studies indicating a lack of correlation between sugar and hyperactivity, one's previous views or understanding can be difficult to change.

Folklore, home remedies, and fad treatments ranging from chicken soup to swimming with dolphins are unscientific aspects of abnormal child psychology. Simple explanations, such as “sugar causes hyperactivity,” or simple solutions, such as “spare the rod and spoil the child,” may appeal to parents or teachers because they promise an easy answer or quick remedy for a complex problem. Folklore and fad treatments, unintentionally or otherwise, play to the vulnerabilities of parents of children with problems, parents who desperately want the best for their children. More often than not, easy answers or quick remedies do not work, and sometimes they bring unfortunate consequences and costs for children with problems and their families.

People have always been skeptical about scientific research leading to new knowledge. Consider the following comments:

After a few more flashes in the pan, we shall hear very little more of Edison and his electric lamp. Every claim he makes has been tested and proved impracticable. (*New York Times*, January 16, 1880)

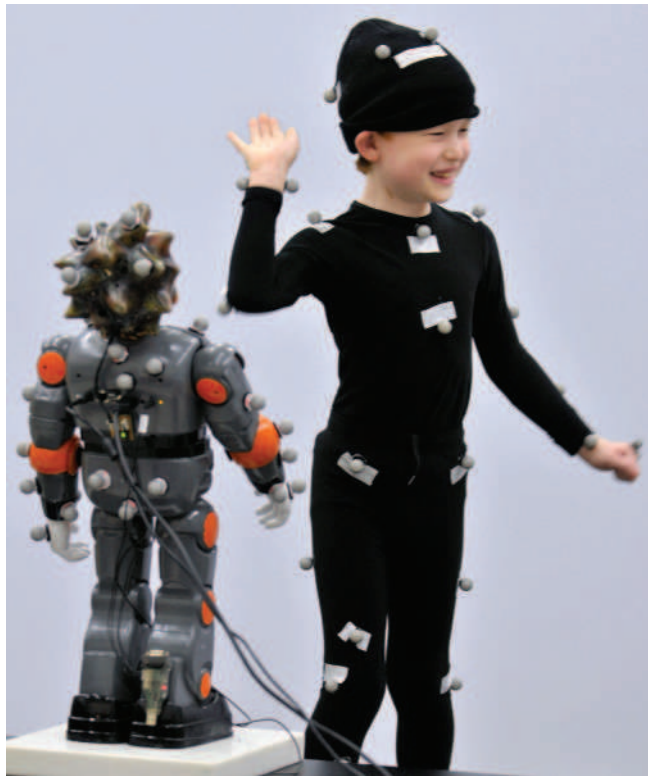
Louis Pasteur's theory of germs is ridiculous fiction. (Pachet, professor of physiology [Toulouse, 1872])

Fortunately, the light bulb, pasteurization, and many other ideas once viewed with skepticism have clearly caught on. Nevertheless, people are skeptical about research in abnormal child psychology for good reason. First, experts on childhood problems frequently disagree. Newspapers, magazines, websites, and TV talk shows provide a steady diet of conflicting opinions. The answers we get (e.g., violence on television makes children more aggressive, daycare has a harmful effect on children's emotional adjustment) often depend on which “expert” we ask.

Second, research studies that appear in mainstream media are frequently oversimplified, and the way in which findings are presented can make them more or less believable. For example, people are more likely to agree with the findings of a study when the findings are presented with a photo of a brain image, as compared with the same findings presented without a brain image or with a bar graph (McCabe & Castel, 2008). In the absence of information about the limitations of brain-imaging procedures, findings can be misrepresented or misunderstood.

Third, research findings in abnormal child psychology are often in conflict with one another. For example, most studies find that elementary-school-age girls are more prone to depression than boys, but some studies report higher rates of depression in boys, and other studies report no differences. How do we make sense out of inconsistent and sometimes contradictory findings? As we will discuss in this chapter, conflicting findings are often the result of how different studies are conducted—for example, the way depression is defined or how children for the study are selected (e.g., from clinics vs. from the general population).

A fourth reason for skepticism is that research has led to different recommendations regarding how children with problems should be helped. In some cases the same treatment (e.g., antidepressant medication) has been shown to be helpful, to have no effect, or to be harmful. As one practitioner put it after hearing about an effective new treatment method at a conference, “I'd better hurry home and use it quickly before a new study is published to show that it doesn't work!” Many conclusions from research with children are



Fort Worth Star-Telegram/McClatchy-Tribune/MCT via Getty Images

Abnormal child psychology can involve novel research methods, such as the possibility of using robots to help to understand, diagnose, and treat children with autism spectrum disorder.

qualified—rarely are there clear-cut answers. A moderate amount of discipline is good; too little or too much discipline is bad. Certain treatments may work for some children but not for others, for older but not for younger children, or for children with certain cultural backgrounds but not for others.

Finally, even when scientific evidence is relatively clear and produces a consensus, many parents and professionals may dismiss the findings because they have encountered an exception, usually one drawn from personal experience. For example, despite the large amount of research showing that the habitual use of harsh physical punishment by parents can have extremely negative effects on children, a parent may still say, “My father used his belt on me when I was a kid and it sure taught me how to behave properly!”

Because no single study is perfect, it is important to be an informed consumer and to keep in mind that it is the *accumulation* of findings—not one study—that advances the field. Research in abnormal child psychology using a scientific approach has led to exciting new advances in understanding children with problems and how they can best be helped. For example, in Chapter 6, we discuss studies that have identified brain abnormalities in children with autism that may tell us why these children have difficulty making social connections

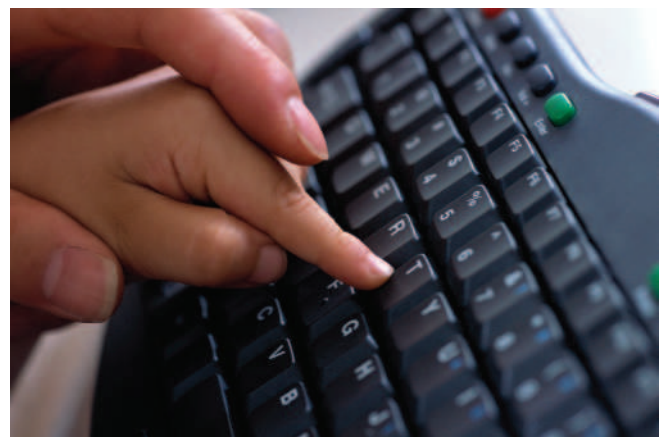
with people. Other research—using home videotapes of 12-month-old infants who are later diagnosed with autism at 2 to 3 years of age—has identified early social markers for autism such as the infant “not responding to her name when called” or “rarely making eye contact.” The discovery of possible biological and social markers helps identify children with autism at a younger age than ever before. This is critical, because the earlier a child with autism receives help, the better the outcome. In studies of autism and other disorders, findings from different studies do not always agree. Nevertheless, the accumulation of new findings from scientific research into the neurobiology, early social development, and intervention for children with autism has greatly advanced our understanding of this disorder and continues to suggest new ways to help these children.

## When Science Is Ignored

*The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge.*

—Stephen Hawking

The example of *facilitated communication* (FC) illustrates some of the lessons to be learned when scientific methods and evidence are ignored or dismissed. FC is a seemingly well-meant but highly controversial and misused procedure for teaching children with autism and other impairments to communicate. Using this method, a facilitator provides manual assistance by lightly holding a child’s hand, wrist, or arm (see photo), while the child supposedly communicates by typing on a keyboard or by pointing to letters on an alphabet board. The alleged purpose of the manual assistance by the facilitator is to help the child press the keys that she or he wants to press—not to influence key selection. However, because the assistance is continued indefinitely, the possibility of direct influence by the facilitator exists.



Fuse/Jupiter Images

Facilitated communication: Who’s doing the communicating?



FC received widespread exposure in the media when it was reported that children who received it showed feats of literacy and intellectual competence far exceeding their presumed abilities (Biklen, 1990). The results were considered remarkable because the typical youngster using FC had a lifelong history of autism, profound intellectual disability, or both and had never talked (Jacobson, Mulick, & Schwartz, 1995). Proponents claim that, with this method, children with autism can generate phrases and sentences describing complex memories and feelings and demonstrate other advanced language skills (Biklen & Cardinal, 1997).

However, critics of FC view the method as quackery—no different from a Ouija board. Are the extraordinary outcomes attributed to FC fact, or are they fiction? Scientific research would indicate fiction. Controlled studies have consistently found that the child's supposed communication is being controlled by the facilitator (Mostert, 2001). In one revealing study, different questions were delivered through headphones to facilitators and individuals with autism ranging in age from 16 to 30 years (both were unaware that the questions were different). The resulting answers by the individuals with autism were found to match the questions given to the facilitator, not the client, indicating that it was the facilitator who was doing the communicating (Wheeler et al., 1993).

Unfortunately, FC continues to be used each day with thousands of youngsters with disabilities throughout the world (Grayson et al., 2012), which illustrates the potentially damaging effects of using practices not based on scientific evidence (Lilienfeld, 2007; Mostert, 2010). As reflected in the following comments by the father of a young boy with autism, parents who want the best for their children are particularly vulnerable to the false promise of questionable interventions:

Professionals are very quick to dismiss the abilities of autistics. . . . So when facilitated communication proponents say they have found a way around the wall, parents are quick to believe. . . . But . . . the workshops can cost \$250. The equipment \$800 more. And what do we get for our money? Parents themselves “can’t facilitate,” they tell us. Our children will require facilitated communication for life, they say, and will never communicate on their own. . . . In short, the price we are asked to pay in an effort to communicate with our children is to allow strangers into our families to mediate our relationships with our own kids and to accept everything the stranger tells us on blind faith. (Mark S. Painter, Sr. [Dillon, 1993])

FC is of special interest to our discussion of a scientific approach to research because it meets many

of the criteria of *pseudoscience*: demonstrations of benefit are based on anecdotes or testimonials, the child's baseline abilities and the possibility of spontaneous improvement are ignored, and related scientific procedures are disavowed. The differences between scientific and pseudoscientific claims are not simply whether or not they are based on evidence (Finn, Bothe, & Bramlett, 2005). As we discuss later in this chapter, it is the quality of the evidence, how it was obtained, and how it is presented that are crucial in evaluating whether claims are scientifically believable. Scientists are certainly capable of making incorrect claims. What distinguishes them from pseudoscientists is that they play by the rules of science, are prepared to admit when they are wrong, and are open to change based on new evidence (Lilienfeld, Lynn, & Lohr, 2003). Because a scientific approach to research is diverse and complex, many criteria, methods, and practices are necessary to depict how this approach is applied in abnormal child psychology. This will be our focus in the sections that follow, where we consider research in abnormal child psychology—from the questions that researchers who study childhood disorders typically seek to address, to the research process, to the methods and research designs used to study problems in children. In the last section, we discuss important ethical and pragmatic issues. The research that we present throughout this book emphasizes a scientific approach to abnormal child psychology. As we begin this journey, it is also important to keep in mind that science is a social enterprise undertaken by humans, and research is inevitably influenced by scientists' values (Sonuga-Barke, 2011).

## Section Summary

### A Scientific Approach

- A scientific approach to abnormal child psychology is a way of thinking about how best to understand and answer questions of interest, not just an accumulation of specific methods, practices, or procedures.
- Science requires that theories be backed up by evidence from controlled studies and that observations be checked and repeated before conclusions are drawn.
- Facilitated communication (FC) meets many of the criteria of pseudoscience because demonstrations of benefit are based on anecdotes or testimonials, the child's baseline abilities and the possibility of spontaneous improvement are ignored, and typical scientific procedures are disavowed.
- What distinguishes science from pseudoscience is that scientists play by the rules of science, are prepared to admit when they are wrong, and are open to change.



## THE RESEARCH PROCESS

*Science is not a collection of facts, any more than opera is a collection of notes. It's a process, a way of thinking, based on a single insight—that the degree to which an idea seems true has nothing to do with whether it is true, and that the way to distinguish factual ideas from false ones is to test them by experiment.*

—Ferris (1998)

Research in abnormal child psychology is best characterized as a multistage process involving key decisions at various points. The process typically begins with the researcher(s) developing a hypothesis (research question) on the basis of observation, theory, and previous findings, and deciding on a general approach to research. The next stage involves identifying the sample to be studied, selecting measurement methods, and developing a research design and procedures. The research design and procedures must balance practical considerations with the adequacy of the research to address the hypotheses under investigation. The final stage consists of gathering and analyzing the data and interpreting the results in relation to theory and previous findings in an attempt to resolve the problem that initially led to the research. In this ongoing process, findings and interpretations from the study can then be used to generate future research questions and stimulate further research.

The main stages of the research process are summarized in ● Figure 3.1. Keep in mind that ethical considerations in conducting research with children and families must be considered at every stage of this process. We will discuss these ethical considerations in the final section of this chapter, “Ethical and Pragmatic Issues.”

Since there is no one “correct” approach to research, most problems in abnormal child psychology are best studied by using multiple strategies and multiple methods (Rutter & Solantaus, 2014). Research is much like any decision-making process. This process requires an understanding of the conceptual, methodological, and practical considerations to make informed decisions about when certain research methods and strategies are appropriate and when they are not. To study abnormal child psychology, researchers must include research designs and methods of data analysis that can identify direct and indirect effects and different causal pathways for various disorders (Cicchetti & Hinshaw, 2003). We discuss common research questions and topics in abnormal child psychology in the sections that follow, addressing specific issues encountered at different stages of the research process.

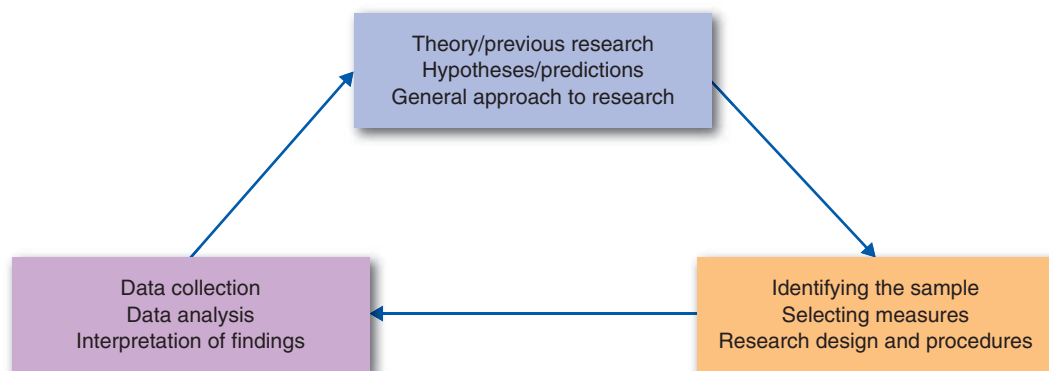
### Common Research Questions and Topics

Parents typically ask similar questions about their children, and the cases of Whitney (age 14) and Tito (age 7) provide examples.

#### WHITNEY

##### Always Sad

I don't understand why Whitney is so sad all the time. She's continually arguing with her brother, hates school, and has no friends. She's always been a moody child, but became much worse after my husband and I divorced. Is her sadness due to her moody personality, the divorce, or is something at home or at school making her feel this way? (Based on authors' case material)



● **FIGURE 3.1** | The research process in abnormal child psychology.

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## Constantly Fighting

Tito is constantly fighting with other kids at school. He never does what we ask him to do. When things don't go his way, he has a full-blown tantrum and throws and breaks things. My husband thinks Tito's just a tough kid, and that all he needs is firm discipline. He uses his belt a lot with Tito, but it doesn't seem to make a difference. I'm really worried. Will Tito outgrow his behavior? Is my husband being too strict? What can I do about it? (Based on authors' case material)

These case examples include typical questions that parents ask about their children's problem behavior and development. They are also questions that generate abnormal child behavior research: for example, research on the impact of divorce on children's mood and behavior, as in Whitney's case, or whether fighting and destructive behavior are likely to decrease with age, as in the case of Tito. As noted above, research typically begins with a hypothesis based on a theory, which predicts certain outcomes or behavior. Research hypotheses guide the researcher's choice of methods and the research designs most appropriate for answering certain questions. Research questions and topics are often based on theories of atypical development and behavior (discussed in Chapter 2). Some studies test predictions drawn from a single theory, whereas others test predictions based on different theories. When little or no theoretical knowledge is available, investigators may also develop a research question without an explicit prediction. For example, are there more depressed children today than there were a generation ago? Is child abuse more prevalent in our society than in other parts of the world?

### Nature and Distribution of Childhood Disorders

Questions regarding the nature and distribution of childhood disorders include how disorders are defined, diagnosed, and expressed at different ages and in different settings. Related questions are directed at patterns of symptoms, base rates for various child problems and competencies, and natural progressions of problems and competencies over time. Such questions are frequently addressed through **epidemiological research**, which is the study of the incidence, prevalence, and co-occurrence of childhood disorders and competencies in clinic-referred and community samples (Costello, Egger, & Angold, 2005a). **Incidence rates**

reflect the extent to which new cases of a disorder appear over a specified period (e.g., the number of youths who develop a depressive disorder during the school year). **Prevalence rates** refer to all cases, whether new or previously existing, observed during a specified period of time (e.g., the number of teens with conduct disorder in the general population during 2012 and 2013). Estimates of incidence and prevalence can be obtained over a short period, such as 6 months, or over a much longer period. For example, *lifetime prevalence* indicates whether children in the sample have had the disorder at any time in their lives.

Knowledge about the risk for, and expression of, an individual disorder over the life course helps us understand the nature of the disorder and use this understanding as the basis for prevention and treatment (Costello & Angold, 2006). For example, studies of teens over time have found depression to be a recurrent disorder with poor long-term outcomes for many youngsters. This knowledge about the course of the disorder has resulted in promising new approaches to prevent and treat depression in young people, which we present in Chapter 10, "Depressive and Bipolar Disorders."

As we noted in Chapter 1, about 10% to 20% of children worldwide have a clinically diagnosable disorder, and many more exhibit specific symptoms or sub-clinical problems (Belfer, 2008). However, overall rates obscure the enormous variability in reported rates from study to study. It can be very confusing when one study reports a prevalence rate of 1% and another reports a rate of 20% for the same disorder at roughly the same point in time. Similarly, rates of reported problems in children have been found to vary from 6% to 20% when reported by teachers and from 10% to 40% when reported by parents (Costello & Angold, 2006). Some studies would lead you to conclude that almost every child you encounter has a problem; for others, the problem is so rare you wonder whether it even exists. Which conclusion is accurate?

To answer this question, we must know something about epidemiological research and how estimates of the number of cases (e.g., children with a problem or disorder) are made. Cases may be defined in terms of single symptoms, multiple symptoms, or patterns of symptoms with likely causes and associated characteristics. Estimates of prevalence vary widely depending on which definition we use, with estimates based on single symptoms being much higher than those based on patterns of symptoms. It is sobering to learn that lifetime prevalence estimates of mental disorders obtained prospectively (studying the same sample of children over time and assessing them at periodic intervals) are *double* those found in retrospective

studies (asking people to remember what occurred at an earlier time), which are subject to recall failure (Moffitt et al., 2010). Case definition in abnormal child psychology is complex because children do not refer themselves for treatment. Therefore, equating illness with seeking treatment can be misleading. The factors that lead to referral sometimes have more to do with the child's parents, teachers, or doctor than with the child's behavior. Therefore, it is important that we study problems in children who are not referred to clinics for treatment as well as those who are. Throughout this book you will see many examples of striking differences in prevalence rates and other research findings, depending on whether children from clinics or children from community samples are the focus of study.

Prevalence rates also vary depending on whether cases are defined in terms of patterns of symptoms, impairment in functioning (e.g., difficulties at home or at school), or both. Fewer cases are identified when both symptoms and impairment in functioning are used than when definitions are based on either one or the other.

The rate and expression of childhood symptoms and disorders often vary in relation to demographic and situational factors, such as socioeconomic status (SES) (e.g., the social, economic, and physical environment in which the child lives as reflected in measures such as family income, education, or occupation); parents' marital status; and the child's age, gender, and cultural background, to name but a few. Consequently, these variables must be assessed and controlled for in most studies. For example, children from one ethnic group may display higher rates of learning problems than those from another ethnic group and may also have a lower SES. If we don't take SES into account we might conclude that differences in learning are related to ethnicity when they are instead a function of factors associated with lower SES such as poor nutrition and fewer learning opportunities. Similarly, although conduct problems are reported to be more frequent in African American than in Caucasian youngsters (McLaughlin, Hilt, & Nolen-Hoeksema, 2007), this finding is likely an artifact related to SES. That is, conduct problems are more prevalent in low-SES families and, since African American children are overrepresented in such families in North America, it is likely that the link between race and conduct problems is accounted for by stressful conditions associated with growing up in a poor family (Bird et al., 2001). In support of this, few differences in conduct problems in African American versus Caucasian youth are reported for primarily middle-class samples (Sameroff, Peck, & Eccles, 2004). The importance of cultural differences is highlighted in A Closer Look 3.1, which shows an



Children's socioeconomic status and cultural background play an important role in the rate and expression of childhood symptoms and disorders

example of epidemiological research into the types of child behavior problems reported by parents in seven cultures.

### Correlates, Risks, and Causes

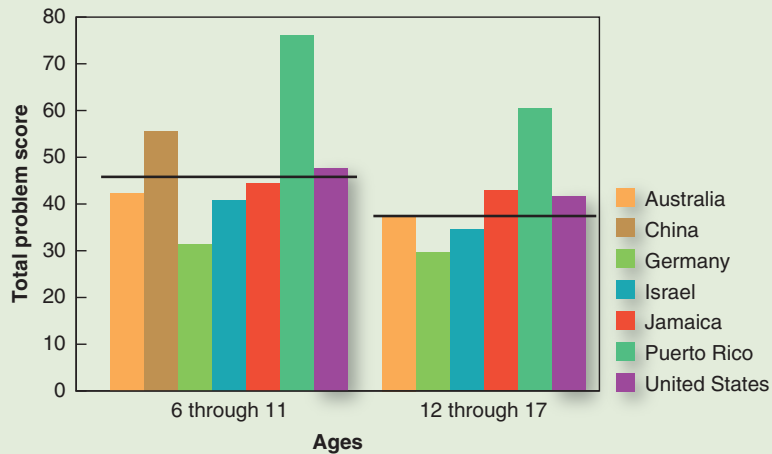
Whitney, in the case at the beginning of this section, displays persistent sadness that seems to be related to several variables: her history of being a moody child, her parents' divorce, her problems at school, and her lack of friends. Do any of these variables, alone or in combination, account for her sadness? If so, in what ways? Three variables of interest in abnormal child psychology are correlates, risk or protective factors, and causes of other variables. Most research in abnormal child psychology is designed to answer questions about the relation between the three general variables and childhood disorders. Because virtually all childhood disorders are the result of multiple variables interacting with one another over time, answers to these questions are rarely straightforward.

*Correlates* refer to variables that are associated at a particular point in time with no clear proof that one precedes the other. For example, Whitney's having no friends is associated with her sadness. Is she sad because she has no friends, or has her sadness prevented her from making friends? Since we don't know which variable came first, her lack of friends and her sadness are correlated variables.

A *risk factor* is a variable that precedes an outcome of interest and increases the chances of a negative outcome (see Chapter 1). For example, Whitney's depressed mood got worse following her parents' divorce. Do you think parental divorce is a risk factor for the development of depression or other problems in children? Remember that a risk factor increases the chances for

## Cross-Cultural Epidemiological Research: Behavior Problems Reported by Parents of Children in Seven Cultures

Widespread movements of refugees and immigrants are placing millions of children into new and unfamiliar environments. Evaluating the mental health of these children can be difficult because of cultural variations in what constitutes abnormal behavior, how to identify such behavior, and what to do about it. Crijnen, Achenbach, and Verhulst (1997) examined the 6-month prevalence rates of child behavior problems as reported by parents or parent surrogates in studies carried out in seven cultures, using the same measurement instrument—the Child Behavior Checklist (CBCL) (Achenbach, 1991a). As shown in the figure, the total problem scores of children in Puerto Rico and China were well above the overall mean. In contrast, the total problem scores of children in Germany and Israel, were well below the overall mean. This epidemiological study indicates that parents in different cultures report different rates of problem behavior in their children. However, the findings do not indicate why these differences occur. Other kinds of studies are needed to answer that question—for example, research into cultural variations in child-rearing practices or expectations for child behavior (Achenbach & Rescorla, 2007).



Total problem scores for children in seven different cultures. Overall mean Child Behavior Checklist (CBCL) problem scores and mean CBCL problem scores for each culture at ages 6 through 11 and ages 12 through 17. Overall mean scores across cultures for each age grouping are indicated by solid horizontal lines. China did not provide enough 12- through 17-year-olds for analysis.

Based on Journal of the American Academy of Child & Adolescent Psychiatry, 36, A.A.M. Crijnen, T.M. Achenbach & F.C. Verhulst, Comparisons of Problems Reported by Parents of Children in 12 Cultures: Total Problems, Externalizing, and Internalizing, 1269–1277.

a certain outcome. It does not mean that it will occur; its occurrence will depend on other factors. Obviously, most children of parents who divorce do not become clinically depressed. Divorce is not necessarily a cause of a youngster's depression and low self-esteem, but it can be a risk factor (Hetherington, Bridges, & Insabella, 1998). A *protective factor* is a positive variable that precedes an outcome of interest and decreases the chances that a negative outcome will occur. The close relationship enjoyed by Whitney and her mother may serve as a protective factor against future episodes of depression.

Research into risk and protective factors often requires that large samples of children be studied and that multiple domains of child functioning—physical, cognitive, psychosocial—be assessed over long periods of time. This is necessary because: (1) only a small proportion of children at risk for a problem will actually develop the disorder; (2) the areas of child functioning

that will be affected, and how they will be affected, are not known in advance; and (3) the ages at which a disorder may occur or reoccur are also not known in advance. Sometimes the effects of exposure to a risk factor during infancy or early childhood may not be visible until adolescence or adulthood. The possibility that delayed, or *sleeper*, effects will occur complicates the study of risk and protective factors, since children must be studied for many years if delayed effects are to be detected.

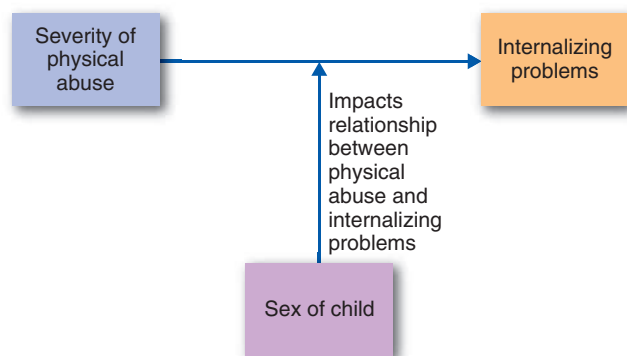
Finally, other variables are *causes*. They influence, either directly or indirectly through other variables, the occurrence of a behavior or disorder of interest. Tito's father uses severe punishment when his son misbehaves. Is this punishment a cause of Tito's aggressive behavior? Is Tito learning aggressive behavior from his father? Questions about causes are complicated because what qualifies as a cause will vary according to the variables of interest and



how far back in time a causal chain can be traced. Because childhood disorders are the result of multiple factors acting in concert, a challenge for researchers is to identify the relative contributions of each factor and—more importantly—to determine how they combine and interact over time to produce specific outcomes (Dodge & Pettit, 2003). When it comes to childhood disorders, “with very few exceptions, there is no such thing as a single basic necessary and sufficient cause” (Rutter, 2007b, p. 378). However, scientific research can help strengthen or weaken certain inferences about the causal role of some variables versus others.

### Moderating and Mediating Variables

The key difference between moderating and mediating variables is that moderators have an independent effect on the existing relationship between two variables, whereas mediators account for some or all of the apparent relationship between two variables. **Moderator variables** influence the *direction* or *strength* of the relationship of variables of interest. The association between two variables depends on or differs as a function of moderating variables, such as the child’s age, sex, SES, or cultural background. For example, as illustrated in ● Figure 3.2, in a study examining the relation between adolescents’ self-reported history of physical abuse and their self-reports of internalizing problems such as anxiety and depression, McGee, Wolfe, and Wilson (1997) found that the correlation between the severity of physical abuse history and internalizing problems was greater for females than for males. The child’s sex was a moderator variable; that is, the relationship between two of the variables (in this case, abuse and internalizing problems) differed, depending on the third (if the adolescent was a boy or a girl).



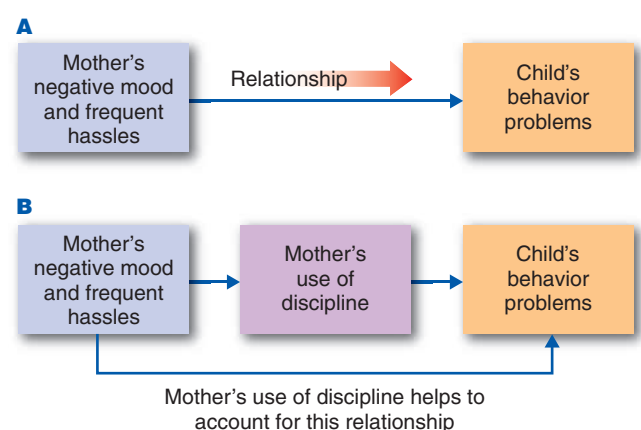
● **FIGURE 3.2** | Example of a moderator variable: Sex of the child moderates the relationship between abuse and internalizing problems.

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**Mediator variables** refer to the process, mechanism, or means through which a variable produces a particular outcome. Mediators describe what happens at the psychological or neurobiological level to explain how one variable results from another. In one study, Snyder (1991) found that on days when mothers of 4- to 5-year-old children experienced negative moods and frequent hassles, they were most likely to respond negatively to their children’s misbehavior and to reinforce their children’s coercive tactics during mother–child conflicts. In turn, the use of these types of maternal discipline was related to an increase in same-day child behavior problems. As shown in ● Figure 3.3, these findings indicate that the relationship between maternal distress and child conduct problems is partly mediated by the type of discipline mothers use on days when they feel distressed. Mothers’ disciplinary strategies help explain the relationship between maternal distress and child conduct problems.

### Outcomes

What are the long-term outcomes for children who experience problems? Many childhood problems decrease or go away as children mature, but we need to know at approximately what age such improvements may be expected. Similarly, will other problems emerge, such as the child developing a low opinion of himself or herself because of trouble with, say, wetting the bed or worrying too much about school? Returning to Tito’s oppositional and aggressive behaviors, will we expect his problems to decrease or go away as he gets older, or do they forecast continued conflict with peers, future school problems, and later difficulties in social adjustment? The study of outcomes in abnormal



● **FIGURE 3.3** | Mediating variables: The type of discipline used by mothers on days they are feeling distressed mediates the relationship between maternal distress and child behavior problems.

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child psychology is perhaps one of the most important research topics in the field today.

## Interventions

How effective are our methods for treating or preventing childhood problems? Are some types of treatment more effective than others? Questions about treatment and prevention are concerned with evaluating the short- and long-term effects of psychological, environmental, and biological treatments; comparing the relative effectiveness of differing forms and combinations of treatment; and identifying the reasons that a particular treatment works. The questions also concern identifying factors that influence the referral and treatment process; understanding how processes such as the child–therapist relationship contribute to treatment outcomes; and assessing the acceptability of equivalent forms of treatment to children, parents, and teachers.

Many treatments for children and adolescents have not been evaluated, although this situation is steadily improving (Silverman & Hinshaw, 2008). These days, numerous studies evaluate treatment outcomes using **randomized controlled trials (RCTs)**, in which children with a particular problem are randomly assigned to different treatment and control conditions. We discuss the importance of random assignment later in this chapter. Findings from controlled research studies indicate that children who receive treatment are generally better off than children who do not.

However, an important distinction needs to be made between treatment efficacy and treatment effectiveness (Chorpita et al., 2011). **Treatment efficacy** refers to whether the treatment can produce changes under well-controlled conditions. In efficacy research, careful control is exercised over the selection of cases, therapists, and delivery and monitoring of treatment. In contrast, **treatment effectiveness** refers to whether the treatment can be shown to work in clinical practice, not just in well-controlled research settings. In research on effectiveness, treatment is evaluated in clinical settings, clients are usually referred rather than selected, and therapists provide services without many of the rigorous controls used in research. The benefits of treatment for children with problems have generally been found to be lower in clinical practice settings (effectiveness trials) than in controlled research settings (efficacy trials) (Weisz et al., 2013). As a result, a high priority for intervention research is on developing and testing interventions in settings where clinical services for youths are typically provided and finding ways to strengthen the bridge between research, public policy, and clinical practice (Chorpita & Daleiden, 2014; Weisz, 2014; Weisz, Ng, & Bearman, 2014). Relatedly, there is a growing interest in the design,

development, and investigation of new technologies as a service delivery vehicle that could help to reduce the gap between intervention research and clinical practice (Jones, 2014).

## Section Summary

### The Research Process

- Research is a multistage process that involves generating hypotheses, devising an overall plan, selecting measures, developing a research design and procedures, gathering and analyzing the data, and interpreting the results.
- One's theory of abnormal child behavior determines the variables studied, the choice of research methods, and the interpretation of research findings.
- Questions about the nature and distribution of childhood problems are addressed through epidemiological research into the incidence and prevalence of childhood disorders and competencies in clinic-referred and community samples.
- Other common research topics in abnormal child psychology focus on correlates, risk and protective factors, causes, moderating and mediating variables, outcomes, and interventions for childhood disorders.

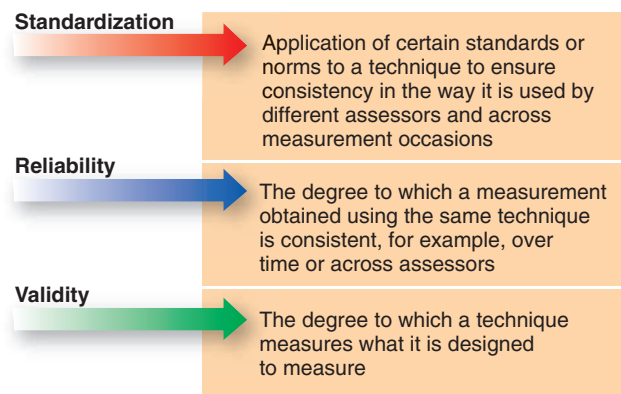
## METHODS OF STUDYING BEHAVIOR

The study of children's behavioral and emotional problems requires that the methods we use to measure these problems generate scores that are reliable and valid. This is no easy task. Children's problems must be evaluated based on samples of their behavior in different situations (e.g., home or school) that often reflect differing perspectives of adults. These evaluations are likely to be affected by the child's age, sex, and cultural background and by the assessors' personal expectations and values. As a result, no single measurement can provide a complete picture of a child's problems, and multiple measures and sources of information are needed.

### Standardization, Reliability, and Validity

The methods and measures that we use to study child and family behavior must undergo careful study to determine how well they measure constructs such as depression, anxiety, and intellectual disability. The use of well-standardized, reliable, and valid measures and procedures is essential to scientific research, as depicted in ● Figure 3.4.

**Standardization** is a process that specifies a set of standards or norms for a method of measurement that are to



● **FIGURE 3.4** | Concepts that determine the value of our methods of measurement and assessment.

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be used consistently across different assessments of the construct of interest. These standards and norms relate to the procedures that must be followed during administration, scoring, and evaluation of findings—for example, as specified in a manual for an intelligence test. Without standardization, it is nearly impossible to replicate the information obtained using a method of measurement. In addition, results are likely to be unique to the situation in which they are obtained and will not apply to other situations. In some cases, the measure may be applied to many children who vary in age, gender, race, SES, or diagnosis. The scores are then used for comparison purposes. However, the test scores of an 8-year-old boy from a low-SES background should be compared with the scores of other children like him, not with the scores of a 16-year-old girl from an upper-SES background.

**Reliability** refers to the consistency, or repeatability, of results obtained using a specific method of measurement. One type of reliability, *internal consistency*, refers to whether all parts of a method of measurement contribute in a meaningful way to the information obtained. To be reliable, information must also not depend on a single observer or clinician; various people must agree on what they see. This is known as *interrater reliability*. Imagine how you might react if you took your child to see three different psychologists and received three different diagnoses and three different treatment recommendations. How would you know which one was correct? In this case, the diagnoses would not be reliable because two or more of the psychologists did not agree. Similarly, tests or interviews repeated within a short time interval should yield similar results on the two occasions. In other words, the results need to be stable over time, which is referred to as *test-retest reliability*.

Reliability alone isn't enough to determine whether a method reflects the investigator's goals—validity

must also be demonstrated. The **validity** of a method refers to the extent to which it actually measures the dimension or construct that the researcher sets out to measure. Validity is not all or none but rather a matter of degree, and it can be assessed in many ways. First, the measure can be examined for its *face validity*, or the extent to which it appears to assess the construct of interest. A questionnaire that asks whether you get nervous before taking an exam would be a face-valid measure of test anxiety, whereas one that asks if you think you are a parrot would not. *Construct validity* refers to whether scores on a measure behave as predicted by theory or past research. For example, a test of intelligence has construct validity if children who obtain high scores on the test also have better grades in school, understanding of concepts, verbal reasoning, recall, and parent ratings of intelligence than do children who obtain low scores on the test. Two components of construct validity are convergent validity and discriminant validity. *Convergent validity* reflects the correlation between measures that are expected to be related—for example, a teen's report of her depression in a screening interview and her scores on a depression questionnaire. It is an indication of the extent to which the two measures assess similar or related constructs—in this case, depression. This is in contrast to *discriminant validity*, which refers to the degree of correlation between measures that are not expected to be related to one another. For example, scores on a measure designed to assess depression and another designed to assess intelligence should not correlate.

Finally, *criterion-related validity* refers to how well a measure predicts behavior in settings where we would expect it to do so—at the same time (concurrent validity), or in the future (predictive validity). For example, a child's high scores on a measure of social anxiety should predict that the child would display anxiety or avoidance in current social situations and will perhaps have difficulties making friends in the future. Criterion-related validity tells whether scores on a measure can be used for their intended purpose.

## Measurement Methods

A variety of measurement method options are available to assess important dimensions of children's behavioral, cognitive, emotional, and neurodevelopmental functioning. These methods are explicit plans to observe and assess children and their surroundings in ways that will reveal relatively clear relations among variables of interest.

Among the measurement options in abnormal child psychology are interviews, questionnaires,

**TABLE 3.1** | Interview, Questionnaire, and Observation

	Interview	Questionnaire	Observation
<b>Structure of situation</b>	Semistructured or structured	Highly structured	Structured or unstructured
<b>Structure of responses</b>	Probe, expand, and clarify	Highly structured; no opportunity for probes or clarification	Vary from very inclusive observation of all behaviors to highly selective coding of very specific behaviors (e.g., number of “smiles”)
<b>Resource requirements</b>	Considerable time needed for interviewing and coding responses and scoring.	Little investigator time needed for administration	Extensive time needed for observing and for coding and summarizing observations
<b>Sources of bias</b>	Relies on participants’ perceptions and willingness to report; responses may be influenced by interviewer characteristics and mannerisms	Relies on participants’ perceptions and willingness to report	Does not rely on participants’ providing specific information, but what is observed may be influenced by the presence of the observer
<b>Data reduction</b>	Requires analysis or recoding of narrative responses	Little data reduction needed	Highly influenced by the complexity of the observation system

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checklists and rating scales, psychophysiological recordings, brain imaging, performance measures, and direct observations of behavior (Mash & Barkley, 2007). A variety of intellectual, academic, and neuropsychological tests are also used (Sattler, 2008). In this chapter, we focus primarily on how these methods are used in research. We talk more about their use in clinical practice and about tests and testing in Chapter 4.

As presented in a comparison of three of the most commonly used methods of gathering data—interviews, questionnaires, and observations—shows how they differ on important dimensions. Because the information we obtain from children and families often varies as a function of the method used, researchers frequently rely on several methods to define and assess the constructs of interest.

## Reporting

Reporting methods assess the perceptions, thoughts, behaviors, feelings, and past experiences of the child, parents, and teachers. These instruments include relatively unstructured clinical interviews, highly structured diagnostic interviews, and questionnaires. An important question regarding reporting methods relates to who is reporting on behavior. For example, with a *self-report measure*, a child or parent will provide information about his or her own behavior, feelings, and thoughts. Alternatively, using an *informant-report measure*, a person who is well

acquainted with the child, usually a parent or a teacher, will provide information about a child’s behaviors, feelings, or thoughts based on his or her observations of the child.

A concern with self- and informant-report methods is how accurately children, parents, or teachers report their own or others’ thoughts, feelings, and behaviors. Inaccuracies may occur because of a failure to recall important events, selective recall or bias, and in some cases, intentional distortions. Some individuals may try to make themselves or others look better or worse than they actually are. Reporting methods also require a certain level of verbal ability and may not accurately assess individuals who have difficulty expressing themselves. Obviously, young children would fall into this category—children under the age of 7 or 8 are usually not reliable reporters of their own behavior. Individuals from a cultural background different from the one in which a reporting method was developed may have difficulty understanding and responding to certain questions. For this reason, it is essential that the reporting method used be sensitive to the language and cultural background of the person being evaluated.

## Psychophysiological Methods

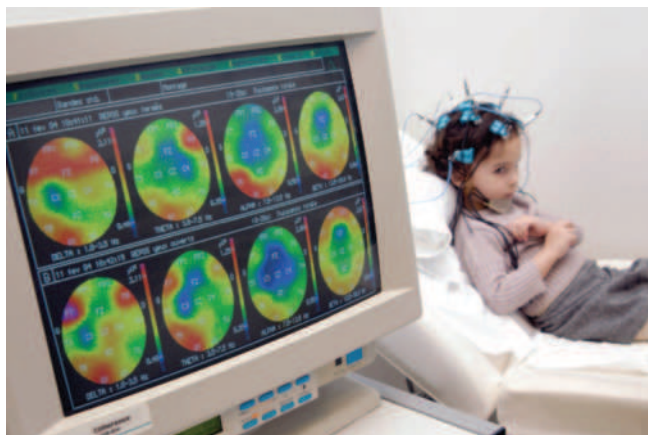
Psychophysiological methods assess the relationship between physiological processes and behavior to identify which nervous system structures and processes contribute to children’s atypical development and



behavior. Among the most common measures are autonomic nervous system activity, such as heart rate, blood pressure, breathing, pupil dilation, and electrical conductance of the skin. Changes in heart rate, for example, may be related to emotional responses. In addition, specific patterns of autonomic arousal may be associated with differences in children's temperament—their degree of shyness with people or responses to novel events (discussed in Chapter 11).

There are many limitations associated with psychophysiological measures, especially with young children. Sometimes, findings for these measures are inconsistent from one study to the next, and researchers may have to infer how the child may have processed a particular event or stimulus. Also, a child's physiological response can be influenced easily by other factors, such as the child's reaction to the recording equipment or to hunger, fatigue, or boredom. These extraneous influences must be minimized if conclusions are to be based on psychophysiological measures.

Many studies have used an *electrophysiological measure* of brain functioning, the **electroencephalogram (EEG)**, to link the brain's measurable electrical activity with ongoing thinking, emotion, or state of arousal (Rothenberger, 2009). The EEG records electrical brain activity using electrodes attached to the surface of the child's scalp. Because different EEG waves are related to different states of arousal, differential patterns of EEG activation may suggest sleep disturbances or various emotional states. For example, with respect to emotional states, a greater amount of electrical activity in the right frontal lobe of the brain as compared with the left frontal lobe is associated with anxiety and depression (McManis et al., 2002).



An electroencephalogram (EEG) is used to monitor electrical activity of the brain in a young girl



A child about to be evaluated using computed tomography (CT or CAT) scan

## Neuroimaging Methods

**Neuroimaging** methods are used to examine the structure and/or function of the living brain (Wong, Grunder, & Brasic, 2007). These methods provide new ways of testing neurobiological and other theories for many childhood disorders—for example, by identifying abnormalities in the structure or functioning of specific brain regions or in how regions of the brain communicate with one another. These brain abnormalities, for instance, may cause the problems that children with autism have in recognizing people's facial expressions. *Structural* brain imaging procedures include *magnetic resonance imaging (MRI)* and *computed tomographic (CT)* scans. MRI uses radio signals generated in a strong magnetic field and passed through brain tissue to produce fine-grained analyses of brain structures. CT scans also reveal the various structures of the brain. As we will see in Chapter 8, findings from CT and MRI studies have led to the hypothesis of abnormal neural maturation in children with attention-deficit/hyperactivity disorder (ADHD).

Two types of functional imaging procedures are *functional magnetic resonance imaging (fMRI)* and *positron-emission tomography (PET)*. fMRI is a form of MRI that registers neural activity in functioning areas of the brain. By doing so, it can show which brain areas are active during particular mental operations such as solving a specific type of problem or reacting to a fear-inducing stimulus. PET scans assess cerebral glucose metabolism. Glucose is the brain's main source of energy, so measuring how much is used is a good way to determine the brain's activity level.

*Diffusion MRI (dMRI)* is a magnetic imaging method that produces images showing *connections*

between brain regions. This method has become a key technology in the creation of the *human connectome*, which is the structure and organization of connections throughout the central nervous system.

Neuroimaging studies tell us that children with a particular disorder have structural differences, abnormal activity in certain areas of the brain, or abnormal brain connectivity, but they do not tell us why. Although remarkable advances have been made in the use of brain-imaging procedures with children during the past two decades, their promise for advancing our understanding or diagnosis of developmental disorders is just beginning (Insel, 2010; Peterson, 2003).

## Observation Methods

*You can observe a lot just by watching.*

—Yogi Berra

Using systematic *observational methods*, a researcher can directly observe the behavior of the child and others under conditions that range from unstructured observations in the child's natural environment (referred to as **naturalistic observation**) to highly structured situations involving specific tasks or instructions usually carried out in the clinic or laboratory (referred to as **structured observation**). When using naturalistic observation, the researcher goes into the child's home, classroom, or day-care center to observe and record the behaviors of interest of the child and often of parents, teachers, siblings, and peers with whom the child interacts. Alternatively, the researcher may make a video recording of behavior in the natural environment, which can be analyzed at a later time.

A researcher who uses structured observations in the laboratory or clinic sets up a situation or provides instructions to elicit behaviors of particular interest (Roberts & Hope, 2001). For example, numerous studies of child-caregiver attachment have assessed young children's reactions to increasingly stressful episodes of separation from and reunion with their caregivers in the laboratory using the *Strange Situation* procedure (Ainsworth et al., 1978). By structuring the situation to elicit specific attachment behaviors (e.g., seeking to be close to the mother), the Strange Situation permits researchers to assess the security or insecurity of children's attachment by noting how effectively they can use their caregivers as a source of comfort during times of distress.

Structured laboratory- or clinic-based observations are cost-effective and offer the advantage of focusing observations on the phenomena of interest. The method is especially useful for studying child behaviors that occur infrequently in everyday life. Structured



Tom & Dee Ann McCarthy/Corbis

A researcher might observe this young girl's behavior on the playground, as other children play around her, to help determine the cause of her emotional problems.

observations give the researcher greater control over the situation than do naturalistic observations, and they permit the use of other assessment procedures. For example, when a problem-solving discussion is recorded on video, replaying the interaction for family members can be used to ask them what they were thinking or feeling during the discussion (Sanders & Dadds, 1992). One negative aspect of using structured observations is that questions may arise as to whether observations in the laboratory or clinic provide a representative sample of the behaviors of interest (Mash & Foster, 2001). Knowing that they are being observed through a one-way mirror may make families feel as though they are in a fishbowl; children and parents may not behave in the laboratory as they do in real-life settings. Nevertheless, in general, samples of behavior obtained using observational methods—in the laboratory or in real-world settings—can be very informative. However, they should be regarded as “behavior in the presence of an observer,” as the observer's presence is likely to influence the behavior of the children and parents who are being observed.

## Section Summary

### Methods of Studying Behavior

- The measures and methods used to study child and family behavior must be standardized, reliable, and valid.
- Self-report and informant-report methods include unstructured clinical interviews, structured diagnostic interviews, and questionnaires.
- Psychophysiological methods are used to assess the relationship between physiological processes and behavior; these methods include measures of heart rate, blood pressure, breathing, pupil dilation, and electrical conductance of the skin.

- Electrophysiological measurements, such as the EEG, link electrical brain activity with ongoing thinking, emotion, or state of arousal.
- Neuroimaging methods are used to examine the structure and/or function of the brain, and connections between parts of the brain.
- Observational methods are used to directly observe the behavior of the child and others in unstructured settings, such as the home, classroom, or playground, and in structured task situations in the laboratory or clinic.

## RESEARCH STRATEGIES

The research strategies used to study children with problems ultimately contribute to the overall accuracy of research findings and conclusions. If a researcher is biased while selecting participants or chooses a research task that does not represent the problem of interest, then the validity of the results may be on shaky ground—the study may not be a fair test of the research question.

Research studies may be examined with respect to their internal and external validity. **Internal validity** reflects how much a particular variable, rather than extraneous influences, accounts for the results, changes, or group differences. Extraneous influences that could explain the results are called *threats to internal validity*. They include maturation, the effects of testing, subject-selection biases, and others. For example, suppose you found that providing relaxation training over several months to a group of 5-year-old children decreased their nighttime fears. It is possible that the observed decrease may be due to the extraneous influences of *maturation* or *the effects of testing*—the children's fears decrease because they are getting older or because they are being assessed repeatedly, rather than as a result of the relaxation training.

The reduction in fears could also be due to *subject-selection biases*, which are factors that operate in selecting subjects or in the selective loss or retention of subjects during the study. For example, if children with only mild fears are selected for our study, a high likelihood exists that their fears will decrease over time, even in the absence of treatment, as compared with children with more severe fears. Also, if children with more severe fears or children who do not benefit from relaxation training dropped out of the study prematurely, the observed decrease in fears may be the result of this selective loss of the most fearful subjects rather than a result of the treatment.

**External validity** refers to the degree to which findings can be generalized, or extended to people, settings,

times, measures, and characteristics other than the ones in a particular study. Threats to external validity may include characteristics of the participants that apply to some people but not others, the reactivity of subjects to participating in the research, the setting in which the research is carried out, or the time when measurements are made. For example, many research studies in abnormal child psychology underrepresent cultural minorities and children from low-SES backgrounds, often because of difficulties in recruiting and retaining participants or because cultural minorities are less likely to receive mental health services for their problems (Cummings & Druss, 2011). Because of this, it is difficult to generalize the findings from these studies to these other groups of children. As another example, children or parents may not behave naturally in an unfamiliar laboratory setting. If findings from a study in the laboratory are quite different from what is found in real-life settings, this study too would have low external validity.

As much as possible, potential threats to internal and external validity need to be addressed when designing a research study. As we discuss in the sections that follow, careful attention to how the sample is identified, how variables of interest are defined and measured, how participants are assigned to conditions or groups, and the types of control groups used are just a few of the many research-design considerations needed to increase our confidence that our findings are best accounted for by the variable(s) of interest and are not due to extraneous influences.

## Identifying the Sample

The validity of any research study in abnormal child psychology depends on the classification systems used to identify the samples of children who participate in the research. First, a careful definition of the sample is critical for comparability of findings across studies and for clear communication among researchers. Without such uniform standards, wide differences may result in estimated base rates for various childhood disorders and for many other findings.

In addition to our sample definition, a second issue is the need to consider possible comorbidities within our sample. **Comorbidity** is the simultaneous occurrence of two or more childhood disorders that is far more common than would be predicted from the general population base rates of the individual disorders. Comorbidity has direct implications for the selection of research participants and for the interpretation of results. Research samples drawn from clinical populations will have a disproportionately high rate of comorbidity because referral for treatment is most likely based on the combined symptoms of all disorders.



A failure to consider comorbidity may result in an interpretation of findings in relation to one disorder, when these findings are more validly attributed to a second disorder or to a combination of disorders. To deal with comorbidity in research samples, some researchers may select only participants with single, or pure, disorders. This strategy may yield small, atypical samples whose findings do not generalize to other populations. Although there is no single research strategy to address questions about comorbidity, studies that compare children showing single disorders with children showing comorbid disorders are needed to help disentangle the effects of comorbidity. It also needs to be recognized that much of the comorbidity among disorders may be artifactual, related more to the overlap in symptoms used to define and diagnose childhood disorders than to the co-occurrence of distinct conditions (Drabick & Kendall, 2010; Rutter, 2010).

A third issue is that we must be sensitive to the setting and source of referral of children for research.



Comorbidity: A 10-year-old girl with multiple disabilities, including intellectual disability, autism, and epilepsy.

*Random selection* occurs when subjects are drawn from a population in a way that gives each individual in that population an equal chance of being selected for the study. This is rare in studies of child psychopathology. At the other end of the spectrum are studies that use *samples of convenience*, in which subjects are selected for a study merely because of their availability, regardless of whether they provide a suitable test of the questions or conditions of interest. Research samples in abnormal child psychology have been selected from numerous settings, including outpatient psychology and psychiatry clinics, schools, hospitals, day-care centers, and the community. Effects related to different settings are often confounded with effects related to different referral sources (e.g., physicians, teachers, and parents), since referral sources also differ across settings.

## General Research Strategies

There are several different, yet complementary, approaches to research design that offer various advantages and disadvantages. The choice of approach frequently depends on the research questions being addressed, the nature of the childhood disorder under investigation, and the availability of resources (Hartmann, Pelzel, & Abbott, 2011).

### Nonexperimental and Experimental Research

One goal of scientific research is to simplify and isolate variables in order to study them more closely. Varying or manipulating values of the variable(s) of interest while trying to control or hold constant other factors that could influence the results meets this goal. Doing this makes it possible to study the association between the particular variables of interest. The basic distinction between nonexperimental versus experimental research reflects the degree to which the investigator can manipulate the experimental variable or, alternatively, must rely on examining the natural covariation of several variables of interest. The *independent variable* is manipulated by the researcher. Based on a research hypothesis, the independent variable is anticipated to cause a change in another variable. The variable expected to be influenced by the independent variable is called the *dependent variable*. The greater the degree of control that the researcher has over the independent variable(s), the more the study approximates a true experiment.

In a **true experiment** the researcher has maximum control over the independent variable or conditions of interest and can use random assignment of subjects to groups, include needed control conditions, and control possible sources of bias. Conversely, the less control the



researcher has in determining which participants will and will not be exposed to the independent variable(s), the more nonexperimental the research will be. Most variables of interest in child psychopathology cannot be manipulated directly, including the nature or severity of the child's disorder, parenting practices, or genetic influences. As a result, much of the research conducted on children with problems and their families relies on nonexperimental, correlational approaches.

In *correlational studies*, researchers often examine relationships among variables by using a **correlation coefficient**, a number that describes the degree of association between two variables. A correlation coefficient can range from  $-1.00$  to  $+1.00$ . The size of the correlation indicates the strength of the association between two variables. A zero correlation indicates no relationship; the closer the value gets to  $-1.00$  or  $+1.00$ , the stronger the relationship is. The sign of the correlation coefficient (plus or minus) indicates the direction of the relationship. A positive sign (+) indicates that as one variable increases in value, so does the other, whereas a negative sign (−) indicates that as one variable increases, the other decreases.

For example, a positive correlation of  $+0.70$  between symptoms of anxiety and symptoms of depression indicates that children who show many symptoms of anxiety are also likely to display symptoms of depression. Alternatively, children who show few symptoms of anxiety are likely to display few symptoms of depression. However, a negative correlation of  $-0.70$  between symptoms of depression and social skills, for example, indicates that children who show many symptoms of depression have fewer social skills.

The primary limitation of correlational studies is that interpretations of causality cannot be made. A correlation between two variables does not mean that one variable causes the other. If we find a relationship

between depression in children and depression in their parents, it could mean that being around a child who is depressed may lead to depression in parents, that parental depression may lead to depression in the child, or that depression in the child and parent may both be due to another, more fundamental variable, such as a shared genetic disposition to depression.

In experimental investigations, researchers must take steps to control for characteristics of participants that could decrease the accuracy of the findings. For example, if two groups of children differ with respect to education, intelligence, SES, or the presence of related disorders, it would be impossible to determine whether the independent variable or the other characteristics led to the results. **Random assignment** of participants to treatment conditions protects against this problem because the probability of a subject's appearing in any of the groups is the same. By assigning participants to groups on the basis of the flip of a coin, numbers drawn from a hat, or a table of random numbers, the chance is increased that characteristics other than the independent variable will be equally distributed across treatment groups.

As we have noted, many hypotheses in abnormal child psychology cannot be tested by randomly assigning participants to conditions or by manipulating conditions in the real world. A compromise involves the use of natural experiments, also called *quasi-experimental designs* or *known-group comparisons*. In **natural experiments**, comparisons are made between conditions or treatments that already exist. The experiments may involve children with different disorders, parents with different problems, or different family environments (e.g., children who have suffered from neglect vs. children who have not). These studies are essentially correlational, but the subjects are selected to ensure that their characteristics are as comparable as possible, with the exception of the independent variable. Despite the extreme care exercised by researchers to equate existing groups, natural experiments cannot achieve the same level of precision and rigor as true experimental research. Nevertheless, for many important questions in abnormal child psychology, natural experiments using known-group comparisons are the only option (Rutter, 2007b).

### **Prospective and Retrospective Research**

Research designs that address questions about the causes and long-term outcomes of childhood disorders may differ with respect to the time the sample is identified and the time data are collected. In a **retrospective design**, a sample of people is identified at the current time and asked for information relating to an earlier time. Individuals are identified who already



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Children's symptoms of anxiety and depression are often positively correlated.

show the outcome of interest, and they are compared with controls who do not show the outcome. Assessments focus on characteristics in the past, and inferences are made about past characteristics and the current outcome. For example, a sample of young adults with a substance-use disorder might be asked to provide retrospective ratings and descriptions of their early family experiences.

Although data are immediately available in retrospective studies, they are also highly susceptible to bias and distortion in recall. Parents of teenagers diagnosed with schizophrenia may reinterpret their views of the teen's childhood, distorting their recollection of the teen's prior behavior or friendships. Moreover, retrospective designs fail to identify the individuals who were exposed to certain earlier experiences but did not develop the problem. Young adult females with an eating disorder may report more childhood experiences of sexual abuse. However, this finding could not serve as the basis for a conclusion that childhood sexual abuse is a specific precursor to eating disorders in young adulthood. The retrospective study fails to identify children who experienced childhood sexual abuse but did not develop an eating disorder as young adults.

In **real-time prospective designs**, the research sample is identified and then followed over time, with data collected at specified time intervals. The same youngsters are followed or assessed over time in order to understand the course of change or differences that may develop over time or during important developmental transitions such as middle-school entry or adolescence. For example, infants who are fearful in response to novel events may be followed over time to determine whether they later develop anxiety disorders or other problems to a greater extent than infants who are not fearful.

Prospective designs correct for several of the problems associated with retrospective research. By following a sample over time we can identify children who develop a disorder as well as those who do not. Since information is collected in real time, problems relating to bias and distortion in recall are minimized. Disadvantages of prospective designs include loss of participants over time and the extended length of time needed to collect data.

### **Analogue Research**

**Analogue research** evaluates a specific variable of interest under conditions that only resemble or approximate the situation for which one wishes to generalize. Analogue studies focus on a circumscribed research question under well-controlled conditions. Often, the purpose of the research is to illuminate a specific process that would otherwise be difficult to study.

For example, Lang et al. (1989) were interested in whether the higher-than-normal rates of alcohol consumption observed in fathers of boys with attention-deficit/hyperactivity disorder (ADHD)/conduct disorder (CD) might be partly due to the distress associated with interacting with their difficult children (these researchers must have been parents, too!). Male and female single college students who were social drinkers were randomly assigned to interact with boys who were trained to perform behaviors characteristic of either typical children (friendly and cooperative) or children with ADHD/CD (overactive and disruptive). Participants also rated their own mood before and after interactions with the child. After the interaction, participants were given a 20-minute break while they anticipated another interaction with the same child. During the break, beer was freely available for their consumption. Both male and female participants reported comparable levels of elevated distressed mood after interacting with children enacting the ADHD/CD role. However, only the men who had interacted with these children drank enough to increase blood alcohol levels.

The findings suggest that interacting with a child with ADHD/CD may increase alcohol consumption in fathers. However, an analogue study only resembles the conditions of interest—the study participants were single college students, not parents of children with ADHD/CD; the children did not really have ADHD/CD; drinking was confined to an artificial laboratory setting; and only beer was available. Therefore, it is difficult to know whether similar effects would occur in real-life circumstances (despite anecdotal reports by some parents that their kids drive them to drink!). These conditions raise the question of external validity, or the generalizability of research findings.

## **Research Designs**

**Research designs** are the strategies used to examine question(s) of interest. They refer to the ways in which a researcher arranges conditions to draw valid inferences about the variables of interest.

### **Case Study**

The **case study**, which involves an intensive, usually anecdotal, observation and analysis of an individual child, has a long tradition in the study of abnormal development and behavior. Itard's description of Victor, the Wild Boy of Aveyron; Freud's treatment of a phobia in Little Hans; John Watson's conditioning of a phobic reaction in Albert B.; and many other similar case studies have played an influential role in shaping the way we think about children's problems. The case study, especially as used in the clinical context, brings together

a wide range of information about an individual child from various sources, including interviews, observations, and test results. The goal is to get as complete a picture as possible of the child's psychological functioning, current environment, and developmental history. Sometimes the goal is to describe the effects of treatment on the child.

Case studies yield narratives that are rich in detail and provide valuable insights into factors associated with a child's disorder. Nevertheless, they also have drawbacks. They are typically viewed as unscientific and flawed because they are characterized by uncontrolled methods and selective biases, by inherent difficulties associated with integrating diverse observations and drawing valid inferences among the variables of interest, and by generalizations from the particular child of interest to other children. Hence, case studies have been viewed primarily as rich sources of descriptive information that provide a basis for subsequent testing of hypotheses in research using larger samples and more controlled methods. They may also provide a source for developing and trying out new treatment methods.

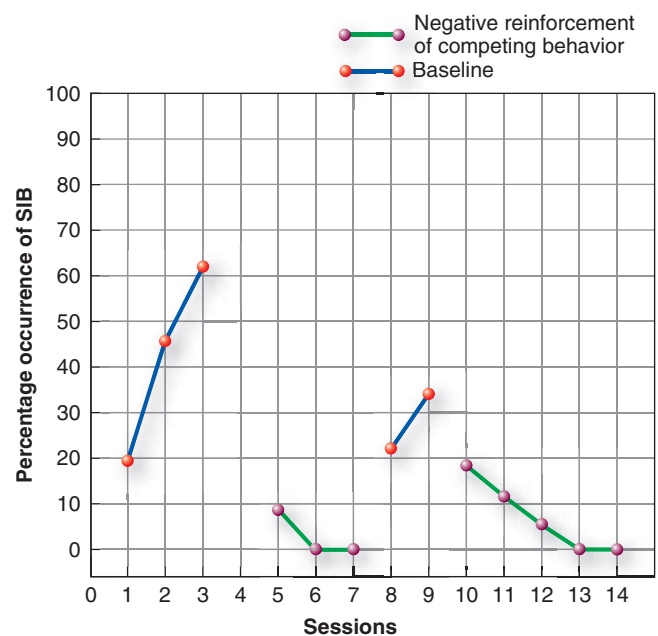
Despite their unscientific nature, there are compelling reasons why systematically conducted case studies are likely to continue to play a useful role in research on childhood disorders. First, some childhood disorders, such as childhood-onset schizophrenia, are rare, making it difficult to generate large samples of children for research. Second, the analyses of individual cases may contribute to the understanding of many striking symptoms of childhood disorders that either occur infrequently or are hidden and therefore difficult to observe directly. Third, significant childhood disturbances such as post-traumatic stress disorder (see Chapter 12) often develop as the result of a natural disaster, severe trauma, or abuse. These extreme events and circumstances are not easily studied using controlled methods.

### Single-Case Experimental Designs

Single-case experimental designs have most frequently been used to evaluate the impact of a clinical treatment, such as reinforcement or stimulant medication, on a child's problem (Kazdin, 2011). The central features of single-case experimental designs that distinguish these from uncontrolled case studies include systematic repeated assessment of behavior over time, the replication of treatment effects within the same subject over time, and the participant's serving as his or her own control by experiencing all treatment conditions (Barlow, Nock, & Hersen, 2009). Many single-subject designs exist, the most common being the A-B-A-B (reversal) design and the multiple-baseline design carried out across behaviors, situations, or individuals.

In an **A-B-A-B reversal design**, a baseline of behavior is first taken (A), followed by an intervention phase (B), then a return-to-baseline phase during which the intervention is removed (A), and a final phase in which the intervention is reintroduced (B). When changes in behavior only occur during the intervention phases, this provides evidence that changes in behavior are due to the intervention. Findings from a study using a *reversal design* are presented in ● Figure 3.5. In this example, a behavioral intervention was used to reduce self-injurious behavior (SIB) in Ann, a 5-year-old girl with profound intellectual disability and multiple handicaps. Ann's SIB consisted of biting her hand and wrists during grooming activities, such as brushing her teeth. These behaviors were getting progressively worse and causing open wounds. During the initial baseline phase, the percentage of intervals during which Ann engaged in SIB during three brief sessions of toothbrushing ranged from 20% to 60%.

Intervention consisted of a negative reinforcement procedure in which Ann was permitted to briefly escape from the grooming activity when she performed an appropriate competing behavior (in this case, pushing a button that, when activated, played the message "Stop!"). She was also physically guided by a trainer to brush her teeth whenever she engaged in SIB. When these procedures were implemented during the intervention phase,



● **FIGURE 3.5** | A-B-A-B (reversal) design: treatment of Ann's self-injurious behavior (SIB).

Based on Use of Negative Reinforcement in the Treatment of Self-Injurious Behavior by M.W. Steege, D.P. Wacker, K.C. Cigrand, W.K. Berg, G.C. Novak, T.M. Reimers, G.M. Sasso & A. DeRaad, 1990, *Journal of Applied Behavior Analysis*, 23, 459–467.

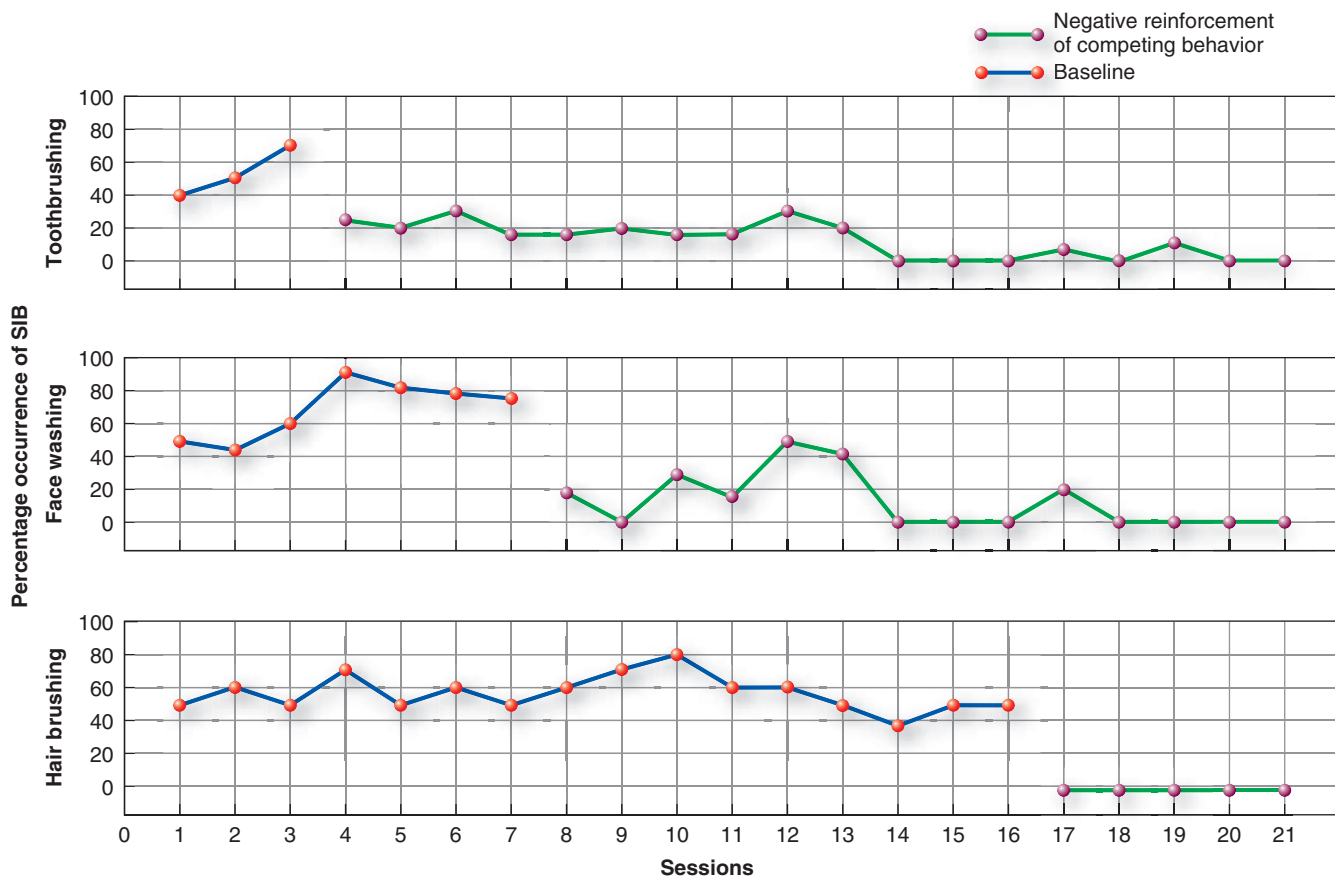
an immediate reduction of SIB to 10% resulted, with no SIB occurring in the next two sessions. During the reversal, or return-to-baseline, phase, treatment was withdrawn and Ann's SIB increased to previous baseline levels. When treatment was reinstituted, SIB decreased again, and no biting was observed during the final two sessions. The finding that Ann's levels of SIB decreased only during the intervention phases, and not during the baseline or return-to-baseline phases, suggests that the reductions in Ann's SIB resulted from the intervention procedures.

Although the reversal design is applicable for use with a wide range of behaviors, there are limitations. One limitation is that if a treatment really works, the behavior may not reverse during the return-to-baseline phase. Do you see any other limitations of this design? Once Ann stopped engaging in SIB after intervention, do you think there was sufficient justification for reinstituting her harmful behavior for experimental purposes? We intentionally selected this example to illustrate a major limitation of the A-B-A-B design, which is the ethical concerns surrounding the return-to-baseline condition following effective treatment for undesirable or even dangerous behaviors. The

multiple-baseline design that we describe next gets around this concern, because no reversal is needed once intervention is introduced.

In a **multiple-baseline design** across behaviors, different responses of the same individual are identified and measured over time to provide a baseline against which changes may be evaluated. Each behavior is then modified in turn. If each behavior changes only when it is specifically treated, a cause-and-effect relationship between the treatment and the behavior change is inferred. Other common varieties of multiple-baseline designs involve successive introductions of treatment for the same behavior in the same individual across different situations or for the same behavior across several individuals in the same situation. The critical feature of the multiple-baseline approach is that change must occur only when treatment is instituted and only for the behavior, situation, or individual that is the target of treatment. Simultaneous changes must not occur for untreated behaviors, situations, or individuals until the time that each is, in turn, targeted for treatment.

Findings from a study using a multiple-baseline design across situations are presented in ● Figure 3.6.



● **FIGURE 3.6** | Multiple-baseline design across situations: treatment of Dennis's self-injurious behavior (SIB).

Based on Use of Negative Reinforcement in the Treatment of Self-Injurious Behavior, by M. W. Steege, D. P. Wacker, K. C. Cigrand, W. K. Berg, G. C. Novak, T. M. Reimers, G. M. Sasso & A. DeRaad, 1990, *Journal of Applied Behavior Analysis*, 23, 459–467.



In this example, the same intervention procedures used with Ann were used to reduce self-injurious behavior (SIB) in Dennis, a 6-year-old boy who also had profound intellectual disability and multiple handicaps. Dennis's SIB consisted of biting his hands, wrists, or arms during grooming activities such as toothbrushing, face washing, and hair brushing. His SIB was getting worse and causing open wounds. During the initial baseline phase, the percentage of intervals during which Dennis engaged in SIB averaged 50% or more during toothbrushing, face washing, and hair brushing. When an intervention was implemented during toothbrushing, an immediate decrease in Dennis's SIB resulted, with consistently low rates of SIB maintained throughout treatment. Moreover, no changes in Dennis's SIB were observed during face washing or hair brushing until the intervention was introduced during those situations.

Because changes in Dennis's SIB occurred only when an intervention was introduced during each of the specific situations, there is support for the hypothesis that intervention led to those changes. A multiple-baseline design avoids the problem associated with the reversal design of having to return to baseline when treating dangerous or unwanted behaviors.

Several advantages and limitations are associated with the use of single-case experimental designs. These designs preserve the personal quality of the case study and offer some degree of control for potential alternative explanations of the findings, such as the effects of maturation and reactivity to observation. Single-case designs also provide an objective evaluation of treatment for individual cases, permit the study of rare disorders, and facilitate the development and evaluation of alternative and combined forms of treatment. The negative aspects of the design are the possibilities that specific treatments will interact with unique characteristics of a particular child, the limited generalization of findings to other cases, and the subjectivity involved when visual inspection rather than statistical analysis is used to evaluate the data. The findings for Ann and Dennis were fairly clear-cut. Difficulties in interpretation arise when baseline data or observed changes are highly variable.

### Between-Group Comparison Designs

Many research designs are based on comparisons between one group of children assigned to one or more conditions and other groups of children assigned to one or more different conditions. When participants are randomly assigned to groups, and groups are presumed to be equivalent in all other respects, one group typically serves as the *experimental group* and

the other serves as the *control group*. Any differences observed between groups are then attributed to the experimental condition.

The choice of an appropriate control or comparison group often depends on what we know prior to the study and the questions we wish to answer. For example, if an established and effective treatment for adolescent depression exists, testing a new approach against a no-treatment control group will likely answer the wrong question, not to mention that it may raise ethical concerns about withholding a proven effective treatment. We do not want to know whether the new approach is better than nothing—we want to know whether it is better than the best available alternative treatment.

In many cases, assignment of participants to groups may not be possible, particularly when one wishes to make comparisons between known or intact groups, such as children who have been referred to clinics for depression versus those with depression who have not been referred. In these types of known-group comparisons there is no assignment; rather, the selection criteria for including or excluding participants from the groups must be carefully specified.

### Cross-Sectional and Longitudinal Studies

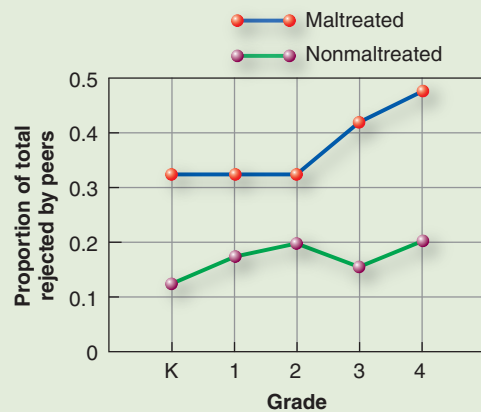
Researchers interested in developmental psychopathology need information about the ways in which children and adolescents change over time. To obtain this information, researchers extend correlational and experimental approaches to include measurements taken at different ages. Both cross-sectional and longitudinal designs are research strategies in which a comparison of children of different ages serves as the basis for research.

In **cross-sectional research**, different youngsters at different ages or periods of development are studied at the same point in time, whereas in **longitudinal research**, the same children are studied at different ages or periods of development. In cross-sectional studies, researchers do not have to worry about the many problems associated with studying the same group of children over a long period. When participants are measured only once, researchers need not be concerned about selective loss of participants, practice effects, or general changes in the field that would make the findings obsolete by the time the study is complete. Although cross-sectional approaches are efficient, they are limited in the information they generate with regard to developmental changes. Evidence about individual change is not available. Rather, comparisons are limited to age-group averages.

Longitudinal designs are conducted prospectively. Data collection occurs at specified points in time from

## Longitudinal Research: Does Child Maltreatment Lead to More Peer Rejection over Time?

Dodge, Pettit, and Bates (1994a) assessed a representative sample of 585 boys and girls for physical maltreatment in the first 5 years of life and then followed them for 5 consecutive years, from kindergarten through the fourth grade. Twelve percent of the sample was identified as having experienced maltreatment. The children's peers, teachers, and mothers independently rated the maltreated children as being more disliked, less popular, and more socially withdrawn than the nonmaltreated children in every year of evaluation—and the magnitude of the difference increased over time. As shown in the accompanying figure, by grade 4 more than twice as many maltreated as nonmaltreated children were rejected by their peer group. The results suggest that early maltreatment may disrupt relationships with adults, which in turn impairs a child's ability to form effective relationships with other children.



Proportions of maltreated and nonmaltreated children rejected by their peer group.

Based on Effects of Physical Maltreatment on the Development of Peer Relations by K.A. Dodge, G.S. Pettit & J.E. Bates, 1994, *Development and Psychopathology*, 6, 43–55.

the same individuals initially selected because of their membership in one or more populations of interest. In studies of child psychopathology, the populations of interest often consist of children at risk for developmental problems due to exposure to any one of a number of factors—for example, having a mother with depression or growing up in an abusive family situation.

The prospective longitudinal design allows the researcher to identify patterns that are common to all youngsters and to track differences in developmental paths that children follow. For example, a longitudinal study can tell that certain fears may decrease with age for all children but that some children may have an anxious disposition and show less of a reduction in specific fears with age. Because data are collected on the same individuals at time 1 and time 2, causal inferences between earlier events and later events and behavior based on temporal ordering can be made. Such inferences of causality cannot be made in cross-sectional designs, in which different individuals are assessed at the two time points. Longitudinal designs also allow for identification of individual developmental trends that would be masked by averaging data over individuals. The prepubertal growth spurt exemplifies this, where rapid accelerations in growth

occurring at different ages across the population are not reflected in growth measures averaged across adolescents. An example of a longitudinal study is presented in A Closer Look 3.2.

Despite their advantages, longitudinal designs have many practical and design difficulties (Hudziak & Novins, 2013). Practical concerns include obtaining and maintaining research funding and resources over many years and the long wait for meaningful data. Design difficulties relate to aging effects and cohort effects. *Aging effects* are general changes that occur because as participants age there are increases in physical prowess, impulse control, or social opportunity. *Cohort effects* are influences related to being a member of a specific **cohort**—a group of individuals who are followed during the same time and experience the same cultural or historical events. For example, the cohort of teens who lived in war-torn Yugoslavia in the early 1990s differ in many respects from North American teenagers living through the technological boom of the early 1990s.

The experience of being repeatedly studied, observed, interviewed, and tested may also threaten the validity of a longitudinal study. Children and adults may become more sensitized to the thoughts, feelings, and behaviors under investigation, thus thinking about

them and revising them in ways that have nothing to do with age-related changes. Furthermore, with repeated testing, participants may improve as the result of practice effects, including greater familiarity with test items and better test-taking skills. Finally, changes within the field of abnormal child psychology may create problems for longitudinal studies conducted over an extended period. Theories and methods are constantly changing, and those that first led to the longitudinal study may become outdated.

## Qualitative Research

**Qualitative research** focuses on narrative accounts, description, interpretation, context, and meaning (Denzin & Lincoln, 2011). The purpose of qualitative research is to describe, interpret, and understand the phenomenon of interest in the context in which it is experienced (Daly, 2007; Patton, 2002). This approach can be contrasted with a quantitative approach, which emphasizes operational definitions, careful control of the subject matter, the attempted isolation of variables of interest, quantification of dimensions of interest, and statistical analysis. Rather than beginning with already developed observational systems or assessment tools, qualitative researchers strive to understand the phenomenon from the participant's perspective. Qualitative data are typically collected through observations or open-ended interviewing and are recorded narratively as case study notes, for example. The observations and narrative accounts obtained are examined to build general categories and themes.

Proponents of qualitative research believe that it provides an intensive and intimate understanding of a situation that is rarely achieved in quantitative research (Denzin & Lincoln, 2011). Qualitative methods, such as the use of examples or stories, may be particularly engaging to children and enable the discussion of sensitive topics, while allowing the children a sense of control over the research situation (Barter & Renold, 2000). On the other hand, qualitative methods may also be biased by the researcher's values and preferences, and the findings cannot easily be generalized to individuals and situations other than the ones studied. Nonetheless, quantitative and qualitative research methods can be used in complementary ways (Lyons & Coyle, 2007). Qualitative methods can be used to identify important dimensions and theories that can then be tested quantitatively. Alternatively, qualitative case studies may be used to illuminate the meaning of quantitatively derived findings (Guerra et al., 2011). In addition, if qualitative data have been reduced to

numbers through word counts or frequency counts of themes, the data can be analyzed using quantitative methods.

To give you a feel for qualitative research, consider a study by Petalas and colleagues (2009), who were interested in the experiences and views of siblings growing up in families that included a child with autism spectrum disorder (ASD). Eight typically developing children (9 to 12 years of age) with a brother with ASD were interviewed. Semi-structured interviews were analyzed using *interpretive phenomenological analysis* (IPA), a qualitative research approach that seeks to capture the richness and diversity of participants' accounts by uncovering central themes that emerge from their talk (Smith, Flowers, & Larkin, 2009). From this perspective, each sibling participant is seen as an expert on his or her personal experience. Each sibling interview lasted about 20 minutes on average and was audio-recorded and fully transcribed, resulting in 70 single-spaced pages of data. Analysis of these data involved reading and rereading of the transcripts until emergent themes were extracted. Briefly, one of the investigators listened to the recording and read the transcript to become familiar with the interview content. Transcripts were then read line by line, noting comments in the margins (e.g., summaries of meaning). Transcripts were then reread multiple times until themes emerging from the data were extracted by grouping sibling comments that clustered together. The themes were then checked and validated by the investigators to be sure that they were grounded in the data. This process, yielded five main themes, which are shown in A Closer Look 3.3, along with examples of a few of the sibling comments on which the themes were based.

The themes and examples highlight several features of the experiences of children growing up with a brother with ASD. You can see that siblings differ in their attitudes and interpretations of their experiences, and, to varying degrees, all mention positive aspects of having a brother with ASD. Siblings also describe different ways they were affected by having a brother with ASD, such as becoming socially isolated, changing their own behavior to cope with their brother's odd mannerisms and aggressive behavior, and having less family time for leisure and recreation. The exploratory findings from this qualitative study can be used to inform future larger-scale studies and quantitative research. They may also have implications for practice—for example, the need to develop enhanced support services for siblings of children with ASD (Petalas et al., 2009).

## Qualitative Research: Siblings Talk about Their Brothers with Autism Spectrum Disorder (ASD)

### Theme 1. Living with a Brother with ASD: Siblings' accounts of the impact on themselves and their families

- "I never feel like the youngest, even when I was small. ... I suppose I learned how to take care of people just like if I had a younger brother." [Lizzie]
- "Jake's loud and he won't stop running into my bedroom when we're talking; and then he just wants to play with us all the time. I get very irritated and I can't get him out. That's why I have a lock on my bedroom door now. [Maddie]
- "I feel quite angry, because he has spoiled a day, which we were all enjoying to that point. I feel quite sad because my Mom and Dad spend that money on us, and then he has to go and spoil it by having a tantrum." [Kevin]

### Theme 2. Others' Reactions: Implications for siblings

- "It's quite annoying because they don't see Jack for who he really is; they just see a big person that's got Asperger's and [who] is really annoying. [Leah]
- "So if he starts swearing or starts kicking, you know, it's quite embarrassing because people might think, oh, you know, their mother or father taught him to do that, so it's quite embarrassing to me to think that people sort of disrespecting my family and me and my brother." [Kevin]
- "Just sometimes they sort of—well, when you make new friends they ask what's wrong with him and I have to explain it. And they get used to it when they get to know him. You tell them more about it, and you tell them stories and stuff. [Lizzy]

### Theme 3. Acceptance and Wanting Change

- "Jack's just like an average person, that he's just got this Asperger's; but he's just like a normal. He's just got Asperger's. ... He's just like my normal brother; I never even think about it. I just recognize him as just another human. [Dylan]
- "... I like him the way he is. He's my brother. I'd never make him normal because I knew him like this. And I can't imagine a brother any other way. Well, not like Tyler any other way. I can't imagine him any other way, I wouldn't change anything." [Lizzy]

- "I'd like to tell him how much I appreciate him, because I don't really do that enough. He's often said to me, you're the worst brother in the world, you know, I don't like you, and I could show my appreciation more towards him than I do now." [Kevin]

### Theme 4. Positive Views and Experiences

- "He's good at remembering things, like if he puts something up on his textbook, he'll remember it there, he'll remember it easier than anyone else. [Eddie]
- "I like that he always shows who he is. He always shows that he does have a personality and he is someone. And also just so he can't talk doesn't mean he doesn't have anything to say. He can sort of speak to you in a way." [Lizzy]
- "Last year, I'm not quite sure, he won a computer by doing horse riding. He didn't win, but he got it for doing so well, which I was really pleased by him for doing that. Not just for winning the computer, but because he'd done so well." [Kevin]

### Theme 5. Support

- "He had someone called Lana who took him out on days out which was fun for him, and gave us as a family some time to go to places that maybe he wouldn't like to go. Like just as a family, without him, so that he would go where he liked to go, and us where we liked to go. Like just daytrips." [Lizzy]
- "I feel quite annoyed, because there's no one really to talk to about when I feel angry with Jack, and when he always gets his own way, and stuff about that. [Leah]
- "Mom went to a meeting for people who had children like Ryan and once she had to take me, and I met two other girls there, who had brothers who were autistic which is cool because you can still have a laugh with them and that, but they understand it better." [Kelsey]

From Petalas, M. A., Hastings, R. P., Nash, S., Dowey, A., & Reilly, D. (2009). "I like that he always shows who he is": The perceptions and experiences of siblings with a brother with autism spectrum disorder. *International Journal of Disability, Development and Education*, 56, 381–399.

## Section Summary

### Research Strategies

- Careful attention must be given to the way in which samples are identified for research in abnormal child psychology, including issues such as how the disorder of interest is defined, criteria for inclusion in the study,

comorbidity, the setting from which subjects are drawn, and sample size.

- We can distinguish between nonexperimental and experimental research strategies on the basis of the degree to which the investigator can manipulate the experimental variable or, alternatively, must rely on examining the covariation of variables of interest.



- In prospective research, a sample is followed over time, with data collected at specified intervals. In retrospective research, a sample is identified at the current time and the sample members asked for information relating to an earlier time.
- Analogue research evaluates a specific variable under conditions that only resemble the situation for which the researcher wishes to generalize.
- The case study involves an intensive, usually anecdotal, observation and analysis of an individual child.
- Single-case designs involve repeated assessments of the same subject over time, the replication of treatment effects within the same subject, and the subject's serving as his or her own control. Two common examples are the A-B-A-B (reversal) design and multiple-baseline design across behaviors, situations, or individuals.
- Between-group designs compare the behavior of groups of individuals assigned to different conditions, such as an experimental group, or a comparison group and a control group.
- In cross-sectional research, different individuals at different ages or stages of development are studied at the same point in time. In longitudinal research, the same individuals are studied at different ages or stages of development.
- Qualitative research focuses on narrative accounts, description, interpretation, context, and meaning, and strives to understand the phenomenon from the participant's perspective and in the context in which it is experienced.

## ETHICAL AND PRAGMATIC ISSUES

The image of overzealous scientists in white lab coats using children as guinea pigs for their experiments is a far cry from current research practices in abnormal child psychology. Researchers and policy makers have become increasingly sensitive to the possible ethical misuses of research procedures and are correspondingly more aware of the need for standards to regulate research practices (Fisher et al., 2013; Hoagwood & Cavaleri, 2010).

Research in abnormal child psychology must meet certain standards that protect children and families from stressful procedures. Any study must undergo careful ethical review before it can be conducted. Current ethical guidelines for research with children are provided through institutional review boards, federal funding agencies, and professional organizations such as the American Psychological Association and the Society for Research in Child Development.

Ethical standards for research with children attempt to strike a balance between supporting

freedom of scientific inquiry and protecting the rights of privacy and the overall welfare of the research participants. Finding this balance is not always easy, especially with children. Although researchers are obligated to use nonharmful procedures, exposing the child to mildly stressful conditions such as a brief separation from their parent or exposure to an anxiety-producing stimulus may be necessary in some instances if benefits associated with the research are to be realized. Children are more vulnerable than adults to physical and psychological harm, and their immaturity may make it difficult or impossible for them to evaluate exactly what research participation means. In view of these realities, precautions must be taken to protect children's rights during the course of a study.

## Informed Consent and Assent

The individual's fully informed consent to participate, obtained without coercion, serves as the single most protective regulation for research participants. **Informed consent** requires that all participants be fully informed of the nature of the research—as well as the risks, benefits, expected outcomes, and alternatives—before they agree to participate. Informed consent also includes informing participants of the option to withdraw from the study at any time, and of the fact that participation or nonparticipation in the research does not affect eligibility for other services.

Regarding research with children, protection is extended to obtaining both the informed consent of the parents or other legal guardian acting for the child and the assent of the child. **Assent** means that the child shows some form of agreement to participate without necessarily understanding the full significance of the research, which may be beyond younger children's cognitive capabilities. Guidelines for obtaining assent of the child call for doing so when the child is around the age of 7 or older. Researchers must provide school-age children with a complete explanation of the research activities in language they can understand. Factors that require particular attention when seeking children's assent include age, developmental maturity, psychological state, family factors, and the influence of the investigator seeking assent (Meaux & Bell, 2001). In addition to parents and children, consent must be obtained from other individuals who act on behalf of children, such as institutional officials when research is carried out in schools, day-care centers, or medical settings.

## Voluntary Participation

Participation in research is to be voluntary, yet some individuals may be more susceptible to subtle pressure and coercion than others. Protection for vulnerable populations, including children, has received considerable attention. Families of high-risk infants and children are potentially more vulnerable, owing in part to the families' distress over their children's high-risk status. Although instructed otherwise, parents recruited from social service agencies or medical settings may still feel that their treatment or quality of care will be threatened if they do not participate in the research. Parents who mistreat their children may feel that their failure to participate in research could result in the loss of their child, a jail sentence, or failure to receive services.

The role of the researcher requires balancing successful recruiting with not placing pressure on potential participants. Volunteerism is itself a biasing factor in research. Individuals who agree to participate in research obviously differ from those who are approached but refuse. The question of whether volunteerism significantly biases findings on the variables of interest remains unanswered.

## Confidentiality and Anonymity

Information revealed by individuals through participation in research is to be safeguarded. Most institutions require that individuals be informed that any information they disclose will be kept confidential and that they be advised regarding any exceptions to confidentiality. Adult informants must be told about the limits of confidentiality prior to their participation in research. In research with children, one of the most frequently encountered challenges to confidentiality occurs when the child or parent reveals past abuse or information that would suggest the possibility of future abuse of the child. Procedures for handling this situation vary across studies. They depend on the circumstances of the disclosure (e.g., by an adult within the context of therapy) and the reporting requirements of the state or province.

## Nonharmful Procedures

No research procedures should be used that may harm the child either physically or psychologically. Whenever possible, the researcher is also obligated to use procedures that are the least stressful to the child and family. In some instances, psychological harm may be difficult to define, but when doubt is present, the researcher has

the responsibility to seek consultation from others. If harm seems inevitable, alternative methods must be found or the research must be abandoned. In cases in which exposure of the child to stressful conditions may be necessary if therapeutic benefits associated with the research are to be realized, careful deliberation and analysis of the risks and benefits by an institutional review board are needed.

## Other Ethical and Pragmatic Concerns

Sensitivity to ethical concerns is especially important when the research involves potentially invasive procedures, deception, the use of punishment, the use of participant payment or other incentives, or possible coercion. In longitudinal research, investigators must be particularly sensitive to the occurrence of unexpected crises, unforeseen consequences of research, and issues surrounding the continuation of the research when findings suggest that another course of action is required to ensure the child's well-being.

Many research problems typically addressed through standardized instructions and procedures are compounded by children's limited experience and understanding of novel research tasks and the particular characteristics of children with problems and their families. Researchers working with children with mental health problems and/or developmental disorders may face unique research challenges, such as motivating the children; keeping within time limitations; ensuring that instructions are well understood; and coping with possible boredom, distraction, and fatigue. Similarly, the families of children with problems often exhibit characteristics that may compromise their research participation and involvement. These characteristics include high levels of stress, marital discord, parental psychiatric disorders, substance-use disorders, restricted resources and/or time for research, and limited verbal abilities.

The final responsibility for the ethical integrity of any research project lies with the investigator. Researchers are advised or—in the case of research funded by government agencies—required to seek advice from colleagues. Special committees exist in hospitals, universities, school systems, and other institutions to evaluate research studies on the basis of risks and benefits. This evaluation involves weighing the costs of the research to participants in terms of inconvenience and possible psychological or physical harm against the value of the study for advancing knowledge and improving the child's life situation. If there are any risks to the safety and welfare of the child or family that the research does not warrant, priority is always given to the participants.

## Section Summary

### Ethical and Pragmatic Issues

- Research in abnormal child psychology must meet certain standards that protect children and families from stressful procedures, including informed consent and assent,

voluntary participation, confidentiality and anonymity, and nonharmful procedures.

- To ensure that research meets ethical standards, researchers seek advice from colleagues and have their research evaluated by institutional ethics review committees. The final responsibility for the ethical integrity of any research project is with the investigator.

## Study Resources

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### KEY TERMS

A-B-A-B reversal design 73  
analogue research 72  
assent 79  
case study 72  
cohort 76  
comorbidity 69  
correlation coefficient 71  
cross-sectional research 75  
electroencephalogram (EEG) 67  
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# 4

## Assessment, Diagnosis, and Treatment

*If there is anything that we wish to change in the child, we should first examine it and see whether it is not something that could better be changed in ourselves.*

—C. G. Jung

### CHAPTER PREVIEW

#### CLINICAL ISSUES

The Decision-Making Process  
Developmental Considerations  
Purposes of Assessment

#### ASSESSING DISORDERS

Clinical Interviews  
Behavioral Assessment  
Psychological Testing

#### CLASSIFICATION AND DIAGNOSIS

Categories and Dimensions  
The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5)

#### TREATMENT AND PREVENTION

Intervention  
Cultural Considerations

Treatment Goals  
Ethical and Legal Considerations  
General Approaches to Treatment  
Treatment Effectiveness

#### NEW DIRECTIONS



**M**OST CHILDREN AND ADOLESCENTS referred for assessment and treatment have multiple problems. More often than not, the accumulation of these problems over time results in a referral. We have emphasized that most childhood disorders involve breakdowns in normal development. Felicia (see below), for example, is having difficulty coping with the demands of adolescence—gaining autonomy from her parents, getting along with peers, performing well in school, establishing her self-identity, and regulating her emotions. Felicia also experienced the added stress of her mother’s hospitalization for pneumonia.

The clinician who sees Felicia will need to evaluate how well Felicia can cope with life events; her appraisal of the events; her physical status, cognitive abilities, behavioral skills, and personality; and support from her parents, teachers, or peers. To sort out the importance of these complex and interacting forces, we must devise an effective plan of assessment that leads to diagnostic and treatment decisions. We will be revisiting Felicia’s case throughout the chapter to see how we address these issues.

## CLINICAL ISSUES

In this chapter, we emphasize the clinical strategies and methods used to assess children with psychological and behavioral problems, and the various approaches to

the classification and diagnosis of childhood disorders. We also provide a brief introduction to treatment—a topic that we will discuss in detail for the individual disorders in the chapters that follow. We begin this important overview of clinical issues with a look at the decision-making process that surrounds assessment, diagnosis, and treatment.

## The Decision-Making Process

How do we determine whether Felicia has a psychological disorder that requires professional attention or whether she will simply outgrow or overcome her problems on her own? Mental health clinicians have to systematically consider many important questions to understand a child’s basic problem(s) and to make diagnoses and devise treatment plans. In many ways, this process is like good detective work. It requires sorting through the many factors that bring a child or adolescent to the attention of professionals, and checking out alternative hypotheses and plans. This ongoing decision-making process is aimed at finding answers to both immediate and long-term questions about the nature and course of the child’s disorder and its optimal treatment (Mash, 2006).

The decision-making process typically begins with a clinical assessment. **Clinical assessments** use systematic problem-solving strategies to understand children with disturbances and their family and school

### FELICIA

#### Multiple Problems



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Felicia seemed unhappy and withdrawn at home and at school.

Felicia, age 13, was referred because of her depression, school refusal, social withdrawal at home and school, and sleep disturbance. Her parents first noticed her recent difficulties about a year ago, just after her mother was hospitalized for pneumonia. Felicia was in a regular eighth-grade class and began to refuse to attend school. She complained of frequent stomach pains before school as a reason not to attend. Her social behavior also got worse at this time. She wanted to be close to her mother at all times and frequently requested her mother’s help with homework or chores. Felicia became extremely quiet, appeared sad and unhappy, and withdrew from social activities. Not long afterward, she began to complain of sleep problems and a loss of appetite. At about this time her grades in school dropped from mostly Bs to Cs and Ds. She reported that no one liked her, that she couldn’t do anything well, and that her life was hopeless.

Based on Depression, by D. J. Kolko, 1987. In M. Hersen and V. B. Van Hasselt (Eds.), *Behavior Therapy with Children and Adolescents: A Clinical Approach*, p. 160.



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Clinical assessment is like good detective work.

environments (Mash & Hunsley, 2007). Strategies typically include an assessment of the child's emotional, behavioral, and cognitive functioning, as well as the role of environmental factors (Sattler & Hoge, 2006). These strategies—which should be based on scientific evidence and clinical expertise—form the basis of a flexible and ongoing process of hypothesis testing regarding the nature of the problem, its causes, and the likely outcomes if the problem is treated as opposed to leaving it untreated (Haynes, Smith, & Hunsley, 2011).

Clinical assessment is much broader than interviewing or testing alone. The ultimate goal of assessment is to achieve effective solutions to the problems children and their families face, and to promote and enhance their well-being. *Clinical assessments are meaningful to the extent that they result in practical and effective interventions.* In other words, a close and continuing partnership between assessment and intervention is vital; they should not be viewed as separate processes (Mash & Hunsley, 2005; Youngstrom, 2013).

The focus of clinical assessment is to obtain a detailed understanding of the *individual* child or family as a unique entity (e.g., Felicia and her family), referred to as **idiographic case formulation**. This is in contrast to a **nomothetic formulation**, which emphasizes broad general inferences that apply to large *groups* of individuals (e.g., children with a depressive disorder). A clinician's nomothetic knowledge about general principles of psychological assessment, normal and abnormal child and family development, and specific childhood disorders is likely to result in better hypotheses to test at the idiographic level (Haynes, Mumma, & Pinson, 2009).

As you can imagine, the process of decision-making is similar to studying for several exams at the same time. You must be familiar with fundamental information in areas such as childhood depression or specific learning disorders and then be able to integrate this knowledge in new ways to make it

applicable to help solve a particular problem. Like studying for exams, this process at first seems like you are trying to cram everything into a funnel to distill what is most important. Unlike studying for exams, however, working with children and families and applying your training and experience to new situations is often very enjoyable!

Clinicians begin their decision making with an assessment, which can range from a clinical interview with the child and parents to more structured behavioral assessments and psychological testing. Keep in mind that assessment is not something done *to* a child or family—it is instead a collaborative process in which the child, family, and teacher all play active roles. Because adults play a critical role in defining the child's problem and providing information, it is particularly important to establish a rapport with them, and active family and teacher involvement are important for both assessment and intervention (Dowell & Ogles, 2010).

## Developmental Considerations

*Diversity is the one true thing we all have in common.*

*Celebrate it every day.*

—Anonymous

In assessing children and families, one needs to be sensitive to the child's age, gender, and cultural background as well as to normative information about both typical and atypical child development. Such knowledge provides the clinician with a context for evaluating and understanding the behavior and circumstances of an individual child and family.

### Age, Gender, and Culture

A crucial building block for assessment and treatment is recognizing diversity within children's developmental functions and capacities at various ages. How might Felicia's age, gender, or cultural background influence our approach to assessment, diagnosis, and treatment?

School refusal in a 13-year-old like Felicia is significant because it results in missed educational and social opportunities. In contrast, a 13-year-old's refusal to travel by airplane may be inconvenient or distressing, but in most cases would not have the same serious consequences as missing school. A child's age has implications not only for judgments about deviancy but also for selecting the most appropriate assessment and treatment methods. For example, at what age can a child provide reliable information in an interview? With respect to treatment, how might time-out for misbehavior for a 3-year-old differ from time-out for a school-age child?

Like age, the child's gender also has implications for assessment and treatment. Numerous studies have reported gender differences in the rates and expression of childhood disorders (Bell, Foster, & Mash, 2005). As shown in Table 4.1, some childhood disorders and conditions are more common in males than in females, others are more common in females than in males, and still others are equally common in the two sexes (Rutter, Caspi, & Moffitt, 2003). In general, boys are about three to four times more likely than girls to display early-onset disorders such as autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD), whereas girls are more likely than boys to display disorders that have their peak onset in adolescence, such as depression and eating disorders (Martel, 2013).

As we have emphasized, most childhood disorders are identified and defined by adults, usually because adults find the child's symptoms particularly salient or troublesome. In general, overactivity and aggression are more common in boys than in girls; girls tend to express their problems in less observable ways such as sadness, fear, and shame (Chaplin & Aldao, 2013). In fact, among the symptoms that best distinguish boys who are referred for treatment are "showing off or clowning" (as reported by parents) and "disturbing other pupils" (as reported by teachers) (Achenbach & Rescorla, 2001). Thus, boys may receive an excess of referrals, and girls may be overlooked because of their less visible forms of suffering. Our assessments and interventions must be sensitive to possible referral biases related to gender and gender differences. The difficulty

in distinguishing between true gender differences and differences in reporting is illustrated by the finding that the rate of ADHD diagnoses during the early to mid-1990s increased approximately threefold among girls, as compared with twofold for boys (Robison et al., 2002). Could the rate of ADHD in girls possibly increase threefold during one decade? It is more likely that increasing recognition of the disorder and its various forms of expression in girls contributed to the dramatic increase in these ADHD diagnoses (Hinshaw & Blachman, 2005). In considering gender differences, it is critical to keep in mind that there is great variability not just between boys and girls but also within each group. In addition, gender differences in emotional expression and behavior have been shown to vary depending on the age of the child, the interpersonal context in which the child is observed, and the personal relevance and demands of the situation (Chaplin & Aldao, 2013).

The study of gender differences has contributed enormously to our understanding and assessment of childhood disorders (Rose & Rudolph, 2006). However, it is also extremely important to study both girls and boys as distinct groups in their own right. An exclusive focus on sex differences could delay careful study of the expression of and underlying processes associated with specific disorders in one group or the other (Hinshaw, 2008). For example, studies into social aggression in girls have found that when angry, girls show aggression indirectly through verbal insults, gossip, ostracism, getting even, or third-party retaliation—referred to as *relational aggression* (Crick & Rose, 2000). As girls move into adolescence, the function of their aggressive behavior increasingly centers on group acceptance and affiliation. When adjustment problems are studied in relation to the issues most salient for girls (e.g., relationships, body image), it has been shown that girls experience significant problems during childhood. These problems include relational aggression and also behaviors that are self-serving, directed outward, and intended to physically harm others. This combination of relational and physical aggression is the strongest predictor of future psychological-social adjustment problems in girls (Crick, Ostrov, & Werner, 2006). Interestingly, children who engage in forms of social aggression that are not typical of their sex (overtly aggressive girls and relationally aggressive boys) are significantly more maladjusted than are children who engage in gender-normative forms of aggression (Crick, 1997).

Finally, cultural factors must be carefully considered during assessment and treatment (Achenbach & Rescorla, 2007; Nikapota, 2009). There is a rapidly changing demographic and cultural landscape in the United States as its population becomes increasingly

**TABLE 4.1** Gender Patterns for Selected Problems of Childhood and Adolescence

More Commonly Reported among Males	
Attention-deficit/hyperactivity disorder	Autism spectrum disorder
Childhood conduct disorder	Language disorder
Intellectual disability	Specific learning disorder
	Enuresis
More Commonly Reported among Females	
Anxiety disorders	Eating disorders
Adolescent depression	Sexual abuse
Equally Reported among Males and Females	
Adolescent conduct disorder	Feeding disorder
Childhood depression	Physical abuse and neglect

Source: Adapted from "Gender differences in the diagnosis of mental disorders: Conclusions and controversies of DSM-IV," by C. M. Hartung and T. A. Widiger, 1998, *Psychological Bulletin*, 123, 260–278. Copyright © 1998 by the American Psychological Association. Reprinted with permission. APA is not responsible for the accuracy of this translation.





Courtesy of David Wolfe



Courtesy of David Wolfe

Biology and socialization interact to create different interests and behavior profiles of girls and boys.

multiracial and multicultural. By 2030, European-Americans in the United States will no longer constitute the majority among children under 18 years of age, and this is already true in children under 8 years of age (U.S. Census Bureau, 2013). Consequently, cultural sensitivity in the assessment, diagnosis, and treatment of children with emotional and behavioral problems and their families has become increasingly important (Pumariega et al., 2013). Consistent with this view is the expanded cultural emphasis in the most recent revision of the *Diagnostic and Statistical Manual of Mental Disorders* DSM (DSM-5; APA, 2013). The DSM-5 includes a framework for developing a cultural formulation of the child's disorder based on the child and family's cultural identity; their cultural concepts of distress; psychosocial stressors and cultural features of vulnerability and resilience; cultural aspects of the relationship between the child, family, and clinician; and an overall cultural assessment including a culturally appropriate plan for treatment. To assist, the DSM-5 also contains a "Cultural Formulation Interview," with a module for children and adolescents, to gather information about the impact of culture on the child's presenting problems and implications for treatment (APA, 2013; available at [www.psychiatry.org/practice/dsm/dsm5/online-assessment-measures](http://www.psychiatry.org/practice/dsm/dsm5/online-assessment-measures)).

Cultural patterns reflect learned behaviors and values that are shared among members, are transmitted to group members over time, and distinguish the members of one group from those of another group. Culture can include ethnicity, language, religious or spiritual beliefs, race, gender, socioeconomic status (SES), age, sexual orientation, geographic origin, group history, education and upbringing, and life experiences.

Children who are ethnic minorities may have a greater risk of being misdiagnosed or underdiagnosed. For example, one study found that psychiatrically hospitalized African American adolescents were more often diagnosed with organic/psychotic disorders and less often diagnosed with mood/anxiety disorders than Caucasian teens (Kilgus, Pumariega, & Cuffe, 1995). In addition, African American and Hispanic children are less likely than white children to receive treatment (Zimmerman, 2005). Culturally competent assessment and treatment practices require that clinicians examine their own belief systems and the culturally based assumptions that guide their clinical practice.

A cultural formulation is necessary to establish a relationship with the child and family, motivate family members to change, obtain valid information, arrive at an accurate diagnosis, and develop meaningful recommendations for treatment. Ethnic identity and racial



socialization are key factors to consider in the assessment of all children and families, including those from the dominant culture (Dishion & Stormshak, 2007b).

**Cultural syndromes** refer to a pattern of co-occurring, relatively invariant symptoms associated with a particular cultural group, community, or context (APA, 2013). For example, *mal de ojo* or the “evil eye” is a concept that is widespread throughout Mediterranean cultures and Latino communities throughout the world. A malady to which children are especially vulnerable and believed to be caused by a hateful look or glance from a malicious person, the evil eye can cause fitful sleep, crying without apparent cause, diarrhea, vomiting, and fever in children. Cultural syndromes rarely fit neatly into one Western diagnostic category (Alarcón, 2009). In addition, although the cross-cultural validity of Western diagnostic criteria varies widely depending on the disorder, data regarding their validity across cultures for many childhood disorders is lacking (Canino & Alegria, 2008). Therefore, it is important that clinicians assess the extent to which a child’s cultural background and context affect the expression of both individual symptoms and clinical disorders. Although cultural syndromes may not be recognized as disorders in the culture in which they occur, distress and other illness features may still be recognized by an outside observer (APA, 2013).

What is considered abnormal child behavior may vary from one cultural group to the next (Serafica & Vargas, 2006). For example, a child’s shyness and oversensitivity are likely to lead to peer rejection and social maladjustment in Western cultures, but the same qualities may be associated with leadership, school competence, and educational achievement in Chinese children (Chen, Rubin, Li, & Li, 1999). In addition, it may be difficult to engage parents from some cultures if mental health issues are seen as particularly taboo, if intervention into personal family matters by strangers is viewed negatively, or if the causes of the illness in that culture are seen as physical or spiritual (Yasui & Dishion, 2007).

In negotiating assessment and treatment plans with children and families who may not share the clinician’s concept of mental illness, a clinician must recognize the diversity that exists across and within racial and ethnic groups in lifestyle and patterns of acculturation (i.e., level of adaptation to dominant culture versus background culture). Generalizations about cultural practices frequently fail to capture these regional, generational, SES, and lifestyle differences. For example, SES level is a major confound in findings of differences in rates of psychopathology between various cultures because ethnic minority cultures are frequently overrepresented in low SES populations (Glover & Pumariega, 1998). An individual’s acculturation level can also significantly



Recognizing diversity across and within ethnic groups is an important role of the clinician.

impact assessment and subsequent interventions. The lower the level of one’s acculturation, the higher one scores on measures of psychopathology, particularly in conjunction with low SES and education level (Cuéllar, 2000). Having an awareness of the cultural customs and values that can affect behaviors, perceptions, and reactions to assessment and treatment, as well as recognizing the major confound of SES with these factors, puts the clinician in a better position to develop a meaningful assessment and intervention strategy.

### Normative Information

Felicia’s school refusal and sad mood started after her mother’s hospitalization. Is Felicia’s reaction normal for a stressful life event? How common are these symptoms in girls her age after a brief period of separation from a parent? Felicia also withdrew from social contact and experienced sleep disturbances. Adolescence is a time of biological and social upheaval for many youths. Therefore, we need to know whether Felicia is different from other girls her age with respect to these problems; if she is different, when should we become concerned and take action?

Knowledge, experience, and basic information about norms of child development and behavior problems are the crucial beginning to understanding how children’s problems or needs come to the attention of professionals. As many parents discover, figuring out what to expect of their children at various ages can be challenging. Parents are faced with determining what difficulties are likely to be chronic versus those that are common and transient, deciding when to seek advice from others, and determining what treatment is best for their child. Immigrant parents can have even more difficulty with these tasks when trying to assess their second-generation child’s behavior as the child attempts to navigate at least two different cultures (Falicov, 2003).

Isolated symptoms of behavioral and emotional problems generally show little correspondence with children’s overall adjustment. Usually, the *age inappropriateness*, *severity*, and *pattern* of symptoms, rather than individual symptoms, define childhood disorders. Also, the extent to which symptoms result in impairment in the child’s functioning is a key consideration. Nevertheless, certain symptoms do occur more frequently in children referred for assessment and treatment. Table 4.2 provides examples of parent- and teacher-rated symptoms that occur more frequently or in more extreme forms in children ages 6 to 18 who are referred for treatment and that best discriminate them from same-age children who are not referred for treatment. As you can see, these symptoms are relatively common behaviors that occur to some extent in all children—sadness, a lack of concentration, and demands for attention top the list.

Purposes of Assessment

Children and families are assessed for one or more purposes. These purposes guide the assessment process, including decisions regarding the use of particular assessment methods. As described below, three common purposes of assessment are description and diagnosis, prognosis, and treatment planning (McLeod, Jensen-Doss, & Ollendick, 2013).

Description and Diagnosis

“Diagnosis is not the end but the beginning of practice.”  
—Fischer (1879–1962)

The first step in understanding a child’s problem is to provide a **clinical description**, which summarizes the unique behaviors, thoughts, and feelings that together make up the features of the child’s psychological

disorder. A clinical description attempts to establish basic information about the child’s (and usually the parents’) concerns at presentation, especially how the child’s behavior or emotions are different from or similar to those of other children of the same age, sex, socioeconomic, and cultural background.

If you conducted an evaluation of Felicia, what information would be most important to include in your clinical description? You would start by describing how her behavior differs from normal behavior of girls her age. First, assessing and describing the *intensity*, *frequency*, and *severity* of her problem would communicate a sense of how excessive or deficient her behavior is, under what circumstances it may be a problem, how often it does or does not occur, and how severe the occurrences are. Second, you would need to describe the *age at onset* and *duration* of her difficulties. Some problems are transient and will spontaneously remit, while others persist over time. Like frequency and intensity, age at onset and duration of the problem behavior must be appraised with respect to what is considered normative for a given age. Finally, you would want to convey a full picture of her *different symptoms and their configuration*. Although Felicia needed help because of particular problems at school and with her peers, you need to know the full range, or profile, of her strengths and weaknesses to make informed choices about the likely course, outcome, and treatment of her disorder.

After establishing an initial picture of Felicia’s presenting symptoms, you would next determine whether this description meets the criteria for diagnosis of one or more psychological disorders. **Diagnosis** means analyzing information and drawing conclusions about the nature or cause of the problem, or assigning a formal diagnostic label for a disorder. Does Felicia meet standard diagnostic criteria for a major depressive disorder and, if so, what might be the cause?

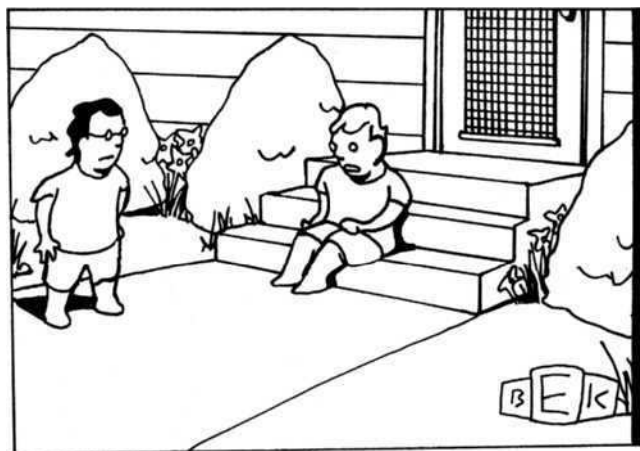
Diagnosis has acquired two separate meanings, which can be confusing. The first meaning is *taxonomic diagnosis*, which focuses on the formal assignment of cases to specific categories drawn from a system of classification such as the DSM-5 (APA, 2013) or from empirically derived traits or dimensions (discussed later in this chapter) (Achenbach & Rescorla, 2001). *Problem-solving analysis*, the second, much broader meaning of diagnosis, is similar to clinical assessment and views diagnosis as a process of gathering information that is used to understand the nature of an individual’s problem, its possible causes, treatment options, and outcomes.

Thus, Felicia’s assessment will involve a complete diagnostic (problem-solving) analysis to get the most comprehensive picture possible. In addition, Felicia may receive a formal diagnosis of *major depressive*

TABLE 4.2 Parent- and Teacher-Rated Problems That Best Discriminate between Referred and Nonreferred Children

• Unhappy, sad, or depressed	• Poor schoolwork
• Can’t concentrate	• Inattentive
• Demands attention	• Stubborn
• Disobedient at school	• Moody
• Doesn’t get along with others	• Sulks
• Impulsive	• Temper
• Nervous	

Based on Achenbach, T. M. and Rescorla, L. A. (2001), Manual for the ASEBA School-Age Forms & Profiles, ISBN 978-0-938565-73-4. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families) p. 144.



Bruce Eric Kaplan / The New Yorker Collection / www.cartoonbank.com

*disorder* (discussed in Chapter 10), which means that she possesses characteristics that link her to similar youths presumed to have the same disorder (taxonomic diagnosis). A secondary diagnosis of an anxiety disorder, such as separation anxiety disorder or school refusal, may be necessary for Felicia, since comorbidity of depression and anxiety is very common among girls her age. Comorbidity exists when certain disorders among children and adolescents are likely to co-occur within the same individual, especially disorders that share many common symptoms (see Chapter 3). Awareness of one disorder alerts us to the increased possibility for another disorder. Some of the more common comorbid disorders are conduct disorder and ADHD, ASD and intellectual disability, and childhood depression and anxiety (Drabick & Kendall, 2010).

### Prognosis and Treatment Planning

*Prediction is very difficult, especially if it's about the future.*

—Attributed to Niels Bohr (1885–1962)

**Prognosis** is the formulation of predictions about future behavior under specified conditions. If Felicia does not receive help for her problem, what will likely happen to her in the future? Will her problems diminish as she gets older, or will they get worse?

Naturally, parents and others immediately want to know the possible short- and long-term outcomes for their child and what events might alter such projections. Remember that many childhood concerns, such as fears, worries, and bed-wetting, are common at certain ages, so any decision to treat a child's particular problem must be based on an informed prognosis. Clinicians must weigh the probability that circumstances will remain the same, improve, or deteriorate with or without treatment, as well as what course of treatment should be followed.

In addition, treatments for children and adolescents often focus on enhancing the child's development rather than merely on removing symptoms or restoring a previous level of functioning. In Felicia's case, for example, an assessment might reveal that she has poor social skills, so intervention plans might focus on efforts to teach her these skills in a concerted fashion to reduce the chances of continuing social relationship difficulties. A prognosis based on careful assessment can also serve to inform parents and others about the importance of doing something now that may reduce the likelihood of major problems later.

**Treatment planning and evaluation** means using assessment information to generate a plan to address the child's problem and to evaluate the effectiveness of the treatment. Felicia's mother keeps her daughter home from school when Felicia complains of stomach pains. She also does Felicia's homework. Does this information suggest a possible course of action? Felicia thinks she can't do anything well. Will helping her to change this and other irrational beliefs make a difference in her depression? When action is taken, how can we evaluate whether it is having the desired effect?

Treatment planning and evaluation may involve further specification and measurement of possible contributors to the problem, determination of resources and motivation for change, and recommendations for the treatments likely to be the most feasible, acceptable, and effective for the child and family. For example, are Felicia's parents unintentionally rewarding her physical complaints and school refusal by giving her extra attention when she doesn't go to school? Is Felicia willing to discuss with a therapist why she refuses to go to school? Are her parents willing to set limits on her behavior despite a history of struggle and failure with previous attempts?

## Section Summary

### Clinical Issues

- Clinical assessment is directed at differentiating, defining, and measuring the child's behaviors, cognitions, and emotions of concern, the environmental circumstances that may contribute to these problems, and the child's strengths and competencies.
- Assessments are meaningful to the extent that they result in effective interventions; a close and continuing partnership must exist between assessment and intervention.
- Age, gender, and culture influence how children's symptoms and behavior are expressed and recognized, and have implications for selecting the most appropriate methods of assessment and treatment.

(continues)



## Section Summary *(continued)*

- The age inappropriateness, the severity, and the pattern of symptoms, rather than individual symptoms, usually define childhood disorders.
- Three purposes of assessment are: (1) description and diagnosis that determine the nature and possible causes of the child's problem, (2) prognosis that predicts future behavior under specified conditions, and (3) treatment planning and evaluation.

## ASSESSING DISORDERS

*If something exists, it exists in some amount. And if it exists in some amount, then it is capable of being measured.*

—René Descartes

*Not everything important can be measured, and not everything that can be measured is important.*

—Albert Einstein

If you were planning to assess Felicia's problems, where would you begin and what might you include in your assessment? Should you interview Felicia, both parents, and her teacher? Do you need to observe Felicia at home? At school? Are there psychological tests or questionnaires to help you pinpoint Felicia's strengths and weaknesses, such as intelligence, emotion regulation, concentration, social skills, and learning ability?

You'll quickly recognize how massive the decision-making process can seem. In view of this complexity, many clinical settings use a multidisciplinary team approach to assessment. Psychological test administration and interpretation experts work with others to generate the most complete picture of a child's mental health needs. Multidisciplinary teams may include a psychologist, a physician, an educational specialist, a speech pathologist, and a social worker.

Some children may need to be referred for a medical exam as part of a comprehensive assessment to investigate whether a physical problem is related to their disorder. For example, a physiological problem may be causing a particular child's bed-wetting or sleep disorder. A thorough medical assessment by a physician could evaluate Felicia's stomach pains, sleep disturbances, and weight loss and be used to determine whether Felicia's depression was related to drug use or a general medical condition such as hypothyroidism (low levels of thyroid hormones).

Ideally, the clinical assessment of children experiencing difficulties relies on a **multimethod assessment approach**, which emphasizes the importance of obtaining information from different informants in

a variety of settings and using a variety of methods that include interviews, observations, questionnaires, and tests. Deciding which assessment is best for a specific case is based on whether the assessment is for diagnosis, treatment planning, or treatment evaluation; on whether the problem is observable (like aggression) or internal (like anxiety); and on the child's and family's characteristics and abilities. In addition, the methods used need to be reliable, valid, cost-effective, and useful for treatment (Hunsley & Mash, 2008).

Clinical assessment consists of many strategies and procedures designed to help understand the child's thoughts, feelings, and behaviors as they occur in specific situations. Clinical interviews are usually conducted with the parents and child separately or in a family interview, and they help establish a good working relationship with the child and family. They are also extremely useful in obtaining basic information about existing concerns as viewed by the child and family members and in pinpointing directions for further inquiry. Behavioral assessments, checklists and rating scales, and psychological tests are then used in accordance with a decision-making approach. Information is also obtained from teachers and other significant individuals who interact with the child in various settings. The purpose is to obtain the most complete picture possible in order to develop and implement an appropriate treatment plan, within the limits of available resources.

A comprehensive assessment requires that some consideration be given to evaluating the child's strengths and weaknesses in areas ranging from basic language and self-care skills to coping and leadership abilities. If our detective work suggests that a particular area of functioning deserves closer scrutiny, then a more in-depth assessment of that area is warranted. However, if initial assessments indicate that certain areas of functioning are not a problem, then further assessments may not be necessary. For example, for a child who performs poorly in school, an assessment of intellectual functioning and academic performance is essential. On the other hand, for a child who experiences difficulties at home but is doing fine at school, assessment of intellectual and academic functioning may be unnecessary. Keep in mind that the most comprehensive assessment procedures will have little clinical impact if they are not practical to use in the settings in which youths with mental health problems are typically assessed. Thus, practitioners and policy makers more and more are seeking assessment protocols that are cost-effective and feasible to use in real-world service delivery settings (Ebesutani et al., 2012).



## Clinical Interviews

Children and adolescents don't usually refer themselves for treatment. Typically, they are referred because of the impact of their behavior on others. Thus, they often do not understand why they are seeing a mental health professional, and in fact they may not even experience any distress or recognize any cause for concern. (To be fair, some adults are like this, too!) The initial clinical interview can be very important not only in obtaining information, but also in setting the stage for collaboration and cooperation among the child, family members, and other concerned parties.

The clinical interview is the assessment procedure usually used with parents and children. However, based on interviewers' theoretical orientations, styles, and purposes, interviews may vary considerably in terms of the kinds of information obtained and the meaning assigned to that information (Sattler & Mash, 1998). Interviews allow professionals to gather information in a flexible manner over many sessions. The findings can then be integrated with more time-consuming assessments, such as family observations or psychological testing.

Clinical interviews use a flexible, conversational style that helps the child or parent to present the most complete picture possible. Interviewees will be encouraged to tell their stories with minimal guidance, which permits the children and parents to convey their thoughts and feelings in ways that approximate how they think in everyday life. During the clinical interview, the interviewer may observe nonverbal communications by the child and parent, such as facial expressions, body posture, voice, mannerisms, and motor behavior. These informal observations can provide the clinician with additional insights



Children's initial reactions to seeing a mental health professional are often ones of fear and resistance.

into the parent-child relationship that may be relevant in determining the presenting problem and the direction for treatment planning.

Clinical interviews can provide a large amount of information during a brief period. For example, during an hour-long interview with a parent, much detail about the child's developmental history, likes and dislikes, behavioral strengths and deficits, responses to discipline, relationships with others, and school performance can be obtained—far more than would be learned by observing the parent and child interacting for the same amount of time (Sattler, 1998).

Many clinicians develop their own style for engaging school-age children and adolescents in discussing their situation. We often use video games, crafts, and similar enticements to help the child feel more comfortable. When younger children are referred, it may be more appropriate to involve one parent in a joint game or activity. Younger children are more likely to “be themselves” with their parents than with a stranger. (For this age group, drawing, coloring, and similar fun activities are almost always successful in initiating a new relationship.) Also, because of their developmental level, younger children or children with intellectual disabilities may be capable of providing only general impressions of their internal states, behavior, and circumstances.

Depending on the child's age, you may want to adopt a child-friendly approach for the interview that fits with the child's developmental status, the nature of the problem, and the interview purpose. The interview typically will attempt to elicit information about the child's self-perceptions and perceptions of others, and to obtain samples of how the child responds in a social situation with an adult. Children's views of why they were brought to the clinic, their expectations for improvement, and their understanding of the assessment situation are all important to consider, along with the manner in which they interpret significant events such as divorce or family violence. Engaging unwilling children can be difficult. Since other people typically seek help on behalf of the child, some children and adolescents may feel that they do not have a problem and therefore they see no need to be interviewed.

What questions would you ask Felicia's parents? Perhaps you want to know how long Felicia's reluctance to separate from her parents has been a concern and whether help has been sought previously. You might also want to discuss the exact nature of the problems her parents are concerned about and to provide them with some indication of the next steps in the assessment and treatment process.

## Developmental and Family History

Initial assessments often include a **developmental history** or **family history**, in which information is obtained from the parents regarding potentially significant developmental milestones and historical events that might impact the child's current difficulties. Often this information is gathered via a background questionnaire or interview that typically covers the following areas (Sattler, 1998):

- ▶ *The child's birth and related events*, such as pregnancy and birth complications or the mother's use of drugs, alcohol, or cigarettes during pregnancy
- ▶ *The child's developmental milestones*, such as age at which walking, use of language, bladder and bowel control, and self-help skills started
- ▶ *The child's medical history*, including injuries, accidents, operations, illnesses, and prescribed medications
- ▶ *Family characteristics and family history*, including the age, occupation, cultural background, and marital status of family members and the medical, educational, and mental health history of parents and siblings
- ▶ *The child's interpersonal skills*, including relations with adults and other children, and play and social activities
- ▶ *The child's educational history*, including schools attended, academic performance, attitudes toward school, relations with teachers and peers, and special services
- ▶ *The adolescent's work history and relationships*, including relationships with others of the same sex and the opposite sex
- ▶ *A description of the presenting problem*, including a detailed description of the problem and surrounding events, and how parents have attempted to deal with the problem in the past
- ▶ *The parents' expectations* for assessment and treatment of their child and themselves

Here is part of the developmental and family history given by Felicia's parents:

### FELICIA

#### History

Her parents reported that Felicia was the result of an unplanned pregnancy following an initial miscarriage, the adoption of a son, and the birth of a sister. The pregnancy and Felicia's early life were described as uncomplicated and generally happy. Felicia reached developmental milestones late, required extra assistance

with tasks, was quite reserved and uncommunicative, and experienced speech articulation problems. Her parents said they tended to "baby" Felicia, since she was seen as "slow." She was similarly described as developmentally immature by her teachers. As a result, she had repeated the first grade even though her attendance and academic performance were consistently good.

Felicia's adopted brother, age 23, attended a local college and lived at home. Her sister, age 16, also lived at home and attended high school. Felicia's mother had trained to become a registered nurse; her father held a Ph.D. in chemistry and managed the research department of a large company. No significant problems were reported for the other children, with the exception of some difficulty on the part of the brother in establishing independence.

Felicia's mother described experiencing a significant depression after each of her pregnancies and following her own father's death the previous year, a loss that was reported to have been very painful for Felicia also. Felicia's father reported no difficulties and was considered a stable and dependable person.

Based on Depression, by D. J. Kolko, 1987. In M. Hersen and V. B. Van Hasselt (Eds.), *Behavior Therapy with Children and Adolescents: A Clinical Approach*, pp. 163–164.

Many events presented in this developmental and family history may be relevant to the assessment of Felicia's current problems and must be explored as the assessment proceeds. For example, the babying described by Felicia's parents may reflect a more general pattern of overdependency on her parents that is contributing to her school refusal. The significant depression experienced by Felicia's mother following her pregnancies may suggest a family risk for depression. The death of Felicia's grandfather a year earlier may have been a triggering event, leading to a mood disturbance in both Felicia and her mother. During the early stages of assessment, these are hypotheses; as evidence accumulates with ongoing detective work, hypotheses can be supported or rejected as indicated by new data.

## Semistructured Interviews

Most interviews with children and parents are unstructured. Clinicians use their preferred interview style and format, as well as their knowledge of the disorder, to pursue various questions in an informal and flexible manner. Unstructured clinical interviews provide a rich source of clinical hypotheses. However, their lack of standardization may result in low reliability and selective or biased gathering of information. To address this problem, clinicians sometimes use **semistructured interviews** that include specific questions designed to elicit information in a relatively consistent manner regardless of who is conducting the interview. The

format of the interview usually ensures that the most important aspects of a particular disorder are covered. An appealing feature of semistructured interviews, especially for older children and youths, is that they can be administered by computer, something many children find entertaining and often less threatening at first than a face-to-face interview. The semistructured format also permits the clinician to follow up on issues of importance that may emerge during the interview. For younger children, a semistructured interactive interview using hand puppets may provide useful information about the child's emotional, behavioral, and peer problems (Ringoot et al., 2013).

The consistency and coverage of semistructured interviews may be offset by a loss of spontaneity between the child and the clinician, especially if the interview is conducted too rigidly. Under such circumstances, children and adolescents may be reluctant to volunteer important information not directly relevant to the interviewer's questions. With appropriate modifications that make the interview process easier to follow, however, semistructured interviews are reliable and very useful in assessing a wide range of children's symptoms (Edelbrock, Crnic, & Bohnert, 1999). Sample questions from a semistructured interview for young people like Felicia who are experiencing depression are presented in Table 4.3.

## Behavioral Assessment

The clinical interviews described in this chapter are valuable in eliciting information from parents and school-age children. They provide an initial look at how the child and family think, feel, and behave and an initial hypothesis with regard to the factors that might be contributing to the child's problems. However, it is often necessary to obtain a firsthand look at the child's behavior in everyday life situations at home or at school or to ask someone who sees the child on a regular basis to observe the child's behavior.

**Behavioral assessment** is a strategy for evaluating the child's thoughts, feelings, and behaviors in specific settings, and then using this information to formulate hypotheses about the nature of the problem and what can be done about it (Haynes & Heiby, 2004). Behavioral assessment frequently involves observing the child's behavior directly, rather than inferring how children think, behave, or feel on the basis of their descriptions of inkblots or the pictures they draw.

Using behavioral assessment, the clinician or another person who sees the child regularly identifies **target behaviors**, which are the primary problems of concern, with the goal of then determining what specific factors may be influencing these behaviors. Sometimes this is a

**TABLE 4.3** Semistructured Interview Questions for an Older Child or Adolescent with Depression

<b>Depressed Mood/Irritability</b>
<ul style="list-style-type: none"> <li>Do you feel sad?</li> <li>Do you get moody?</li> </ul>
<b>Loss of Interest</b>
<ul style="list-style-type: none"> <li>Have you lost interest in doing things, like your hobbies?</li> <li>Is there anything you look forward to doing?</li> </ul>
<b>Self-Deprecatory Ideation</b>
<ul style="list-style-type: none"> <li>Do you feel that you are worthless?</li> <li>Have you thought about committing suicide?</li> </ul>
<b>Sleep Disturbances</b>
<ul style="list-style-type: none"> <li>Do you have trouble sleeping lately?</li> <li>Do you need more sleep than usual lately?</li> </ul>
<b>Change in School Performance</b>
<ul style="list-style-type: none"> <li>Do you have trouble concentrating in school?</li> <li>Have you ever refused to go to school?</li> </ul>
<b>Decreased Socialization</b>
<ul style="list-style-type: none"> <li>Have there been any changes in your relationships with friends?</li> <li>Do you feel a need to be alone?</li> </ul>
<b>Somatic Symptoms</b>
<ul style="list-style-type: none"> <li>Do you get pains in your stomach?</li> <li>Do you get muscle pains and aches?</li> </ul>
<b>Loss of Usual Energy</b>
<ul style="list-style-type: none"> <li>Do you feel you have less energy to do things?</li> <li>Do you often feel tired?</li> </ul>
<b>Change in Appetite and/or Weight</b>
<ul style="list-style-type: none"> <li>Do you have to force yourself to eat?</li> <li>Has there been a change in your weight?</li> </ul>

Based on Clinical and Forensic Interviewing of Children and Families: Guidelines for the Mental Health, Education, Pediatric, and Child Maltreatment Fields by J. M. Sattler, pp. 938-940.

straightforward task, as with a child who complains of illness every Monday morning and, as a result, is kept out of school for the day (sound familiar?). In other cases, the child displays multiple problems at home or school. Felicia's school refusal appears to be part of a larger pattern of difficulties that includes social withdrawal, depression, and possibly separation anxiety.



Even the seemingly simple task of identifying what is bothering a child can be a challenge. Remember that an adult usually decides that the child has a problem and that the child should be referred for an assessment. Adults often disagree about the nature of the child’s problem, especially when they observe children in different settings (De Los Reyes & Kazdin, 2005). Ratings by various people may be influenced by differences between their cultures and that of the child. For example, when teachers rate youths from another cultural background, they are more likely to rate them higher on behavioral and emotional problems than are the teachers who have a similar background, the parents, or the children themselves (Skiba, Knesting, & Bush, 2002). Further, a child’s presenting problem can often be very different from the one eventually identified as the target for intervention.

A commonly used and simple framework for organizing findings in behavioral assessment has been dubbed the “ABCs of assessment”:

- A = Antecedents, or the events that immediately precede a behavior
- B = Behavior(s) of interest
- C = Consequences, or the events that follow a behavior

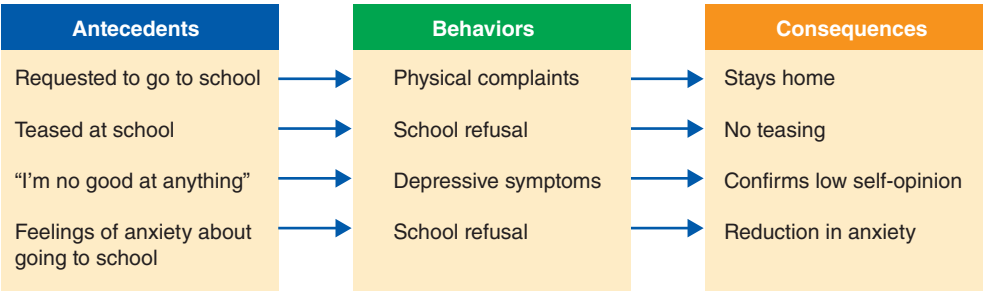
In Felicia’s case we might observe the following sequence: (A) Whenever Felicia’s mother asks her to go to school (antecedent), (B) Felicia complains that she has stomach pains and refuses to go (behaviors), and (C) her mother lets Felicia stay home (consequence). This antecedent–behavior–consequence sequence might suggest that Felicia is being reinforced for her physical complaints and school refusal by not having to go to school. In addition, because there are no positive consequences for going to school and no negative ones for staying at home, Felicia might act this way on future school days. The ABCs of assessment can be used to organize information in specific contexts, as just described, or as an overall framework for assessment.

**Behavior analysis or functional analysis of behavior** is the more general approach to organizing and using

assessment information in terms of antecedents, behaviors, and consequences (Hanley, Iwata, & McCord, 2003). As shown in ● Figure 4.1, functional analysis can be used to identify a wide range of antecedents and consequences that might be contributing to Felicia’s school refusal and depression. The antecedents and consequences for Felicia’s behavior include events in the immediate situation (a reduction in anxiety), more remote occurrences (being teased at school), events in the external environment, and Felicia’s inner thoughts and feelings.

The goal of functional analysis is to identify as many factors as possible that could be contributing to a child’s problem behaviors, thoughts, and feelings and to develop hypotheses for the factors that are most important and/or the most easily changed. In some cases, hypotheses can be confirmed or rejected by changing the antecedents and consequences to see whether the behavior changes. For example, we might teach Felicia to relax when thinking about going to school in order to reduce her anxiety (changing an antecedent) to see whether this decreases her school refusal. Or she could be instructed to substitute more positive self-statements (“I can succeed in school”) for her negative ones (“I’m no good at anything”) to see whether this decreases her depressive symptoms and raises her self-esteem. In these examples, you can see a close interplay between assessment and intervention when carrying out a functional analysis.

The process of gathering information about the child’s behavior in specific settings takes many different forms. Often it involves either asking the parent, teacher, or child about what goes on in specific situations or observing the child. Clinicians develop their initial hypotheses based on information provided by the parents and the child during the interview; they pursue their hypotheses further using behavioral assessments, such as behavior checklists and rating scales and observations of behavior in real life or in role-play simulations. In general, behavioral assessment can be viewed as an approach to organizing assessment information for an individual child and developing hypotheses for treatment (Francis & Chorpita, 2004).



● **FIGURE 4.1** | Functional analysis: antecedents, behaviors, consequences.  
© Cengage Learning \*



## Checklists and Rating Scales

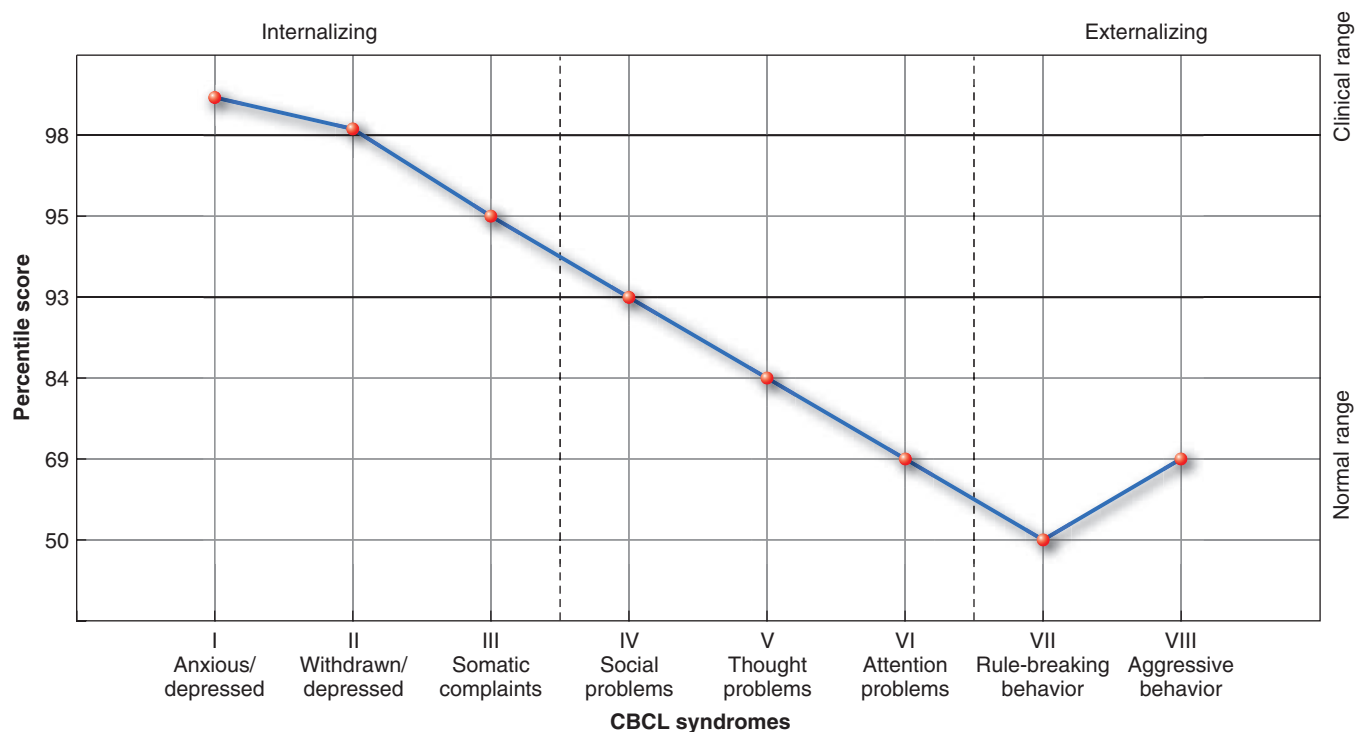
Reports concerning child behavior and adjustment can be obtained using global checklists and problem-focused rating scales. Global behavior checklists are used to ask parents, teachers, and sometimes the youths themselves to rate the presence or absence of a wide variety of child behaviors or to rate the frequency and intensity of these behaviors.

Unlike a clinical interview, the use of a well-developed checklist is strengthened by its known degree of standardization and by the opportunities to compare an individual child's score with a known reference group of children of a similar age and the same gender (Fernandez-Ballesteros, 2004). Checklists are economical to administer and score, and they provide a rich source of information about parents' or teachers' reports about children's behavior, including possible differences in the reports by parents in the same family and differences between parent and teacher reports. Keep in mind, however, that informants may differ in their views of the child's strengths and weaknesses because they interact with the child in different surroundings and circumstances. These discrepancies are not necessarily bad because they inform the clinician about the possible range of behavior in which the child engages, the possible circumstances that increase or decrease target behaviors, and the possibly unrealistic demands or expectations placed on the child.

Nevertheless, these discrepancies underscore the importance of obtaining information from multiple observers (Grigorenko, Geiser, Slobodskaya, & Francis, 2010).

The Child Behavior Checklist (CBCL) developed by Thomas Achenbach and his colleagues is a leading checklist for assessing behavioral problems in children and adolescents ages 6 to 18 (Achenbach & Rescorla, 2001). The CBCL is widely used in treatment settings and schools, and its reliability and validity has been documented in numerous studies. One form of the CBCL, which is completed by the parent, is often used in combination with teacher-completed and youth-completed checklists, classroom observations, and interviews designed to assess the same child behavior problems (Achenbach, 2009). A notable feature of the CBCL is that it has been used to assess children in 80 or more cultural groups throughout the world and as such provides a robust measure for evaluating immigrant, refugee, and minority children from diverse backgrounds (Achenbach et al., 2008).

The scales of the CBCL can be used to create a profile that gives the clinician an overall picture of the variety and degree of the child's behavioral problems. A CBCL profile derived from a checklist completed by Felicia's mother is shown in ● Figure 4.2. The profile shows that her major areas of concern about her daughter are with respect to symptoms of *anxious/depressed*



● **FIGURE 4.2** | Child Behavior Checklist (CBCL) profile for Felicia.

Based on Achenbach & Rescorla, 2001. Reference Crediting: Achenbach, T. M., & Rescorla, L. A. (2001). Manual for the ASEBA school-age forms & profiles. Burlington: University of Vermont, Research Center for Children, Youth, and Families.

(e.g., “fears school,” “cries a lot”), *withdrawn/depressed* (e.g., “rather be alone,” “enjoys little”), and *somatic complaints* (e.g., “feels dizzy,” “aches”). Felicia’s scores on these dimensions are extreme, and place her in the upper 5% or higher (clinical or near-clinical range) as compared with girls of a similar age.

Brief problem checklists based on scales such as the CBCL may also be administered to children and caregivers in a brief rating scale or interview format. These checklists provide a practical and cost-effective way to assess ongoing progress in treatment and to consider modifying treatment if our assessments indicate a lack of progress (Achenbach et al., 2011; Chorpita et al., 2010). Other checklists assess progress in relation to a small number of “top problems” identified by the child or parents as important (Weisz et al., 2011).

In addition to checklists such as the CBCL that span a wide range of behavior problems, other rating scales focus mainly on specific disorders—depression, anxiety, ADHD, ASD, or conduct problems—or on particular areas of functioning, such as social competence, adaptive behavior, or school performance (Mash & Barkley, 2007). Children are usually rated by parents and teachers. Self-report checklists, administered in an engaging, child-friendly manner to increase the child’s interest in the material, is another option. We like to administer questionnaires to adolescents by computer, simply because they find this approach more interesting. With younger children, we like to hand them a card showing the range of responses they may have, using happy or sad faces and similar images that appeal to that age group. Rating scales provide the clinician with a look at specific problems that is more focused than that provided by a global behavior checklist. You will see many examples of rating scales used to assess specific problems in the chapters to follow.

### **Behavioral Observation and Recording**

Since some children are not old enough or skilled enough to report on their own behavior, parents, teachers, or clinicians may keep careful records of specific target behaviors. Parents or other observers typically record *baseline* (prior to intervention) data on one or two problems that they wish to change—for example, how often their child complies with their requests or how often he or she throws a temper tantrum (Dishion & Granic, 2004). Portable electronic devices that cue the parent or older child to record and rate the intensity of specific symptoms or behaviors “in the moment” at various times during the day

can also provide valuable information (Whalen et al., 2011).

Recordings by parents have the advantage of providing ongoing information about behaviors of interest in life settings that might not otherwise be accessible to observation by the clinician. Parental monitoring may also provide secondary benefits that are not directly related to assessment—teaching parents better observation skills, assessing parental motivation, and providing parents with realistic estimates of their child’s rate of responding and feedback with regard to the effects of treatment. However, many practical problems may arise in asking parents to keep accurate records; for example, children often know when they are being watched and may not act in their usual way. A Closer Look 4.1 illustrates why observing behavior can be a useful part of any clinical assessment.

The clinician may also set up a *role-play simulation* in the clinic to see how the child and family might behave in daily situations encountered at home or school or in a problem-solving situation, such as figuring out how to play a game together (Roberts & Hope, 2001). When observing families who have physically abused their preschool-age child, for example, we choose activities most likely to elicit both parent–child cooperation and conflict: We first ask parents to play with their child so that we can observe their teaching style; then we ask them to have the child put away her or his favorite toys, which often results in noncompliance and conflict.

In Felicia’s case, role-play simulations were used to assess her social skills. The clinician first described the situation to Felicia as follows: “You’re sitting in the school cafeteria eating lunch by yourself when Maria, a girl from your math class, comes over to your table and sits across from you.” Next, the clinician takes the role of Maria and says, “Hi Felicia. How’s your lunch?” Felicia then responds, and the interaction continues, giving the clinician a chance to directly observe Felicia’s social skills in a situation that might come up in everyday life.

Remember, direct observation is not foolproof. Clinicians must take into account the informant, the child, the nature of the problem, and the family and cultural context because any of these issues can distort the findings. Despite its limitations, direct observation is a valid and beneficial step in the decision-making process for most families who voluntarily seek assistance and understand what may be required to conduct a thorough assessment and treatment plan. Direct observation can be quite helpful in assessing less motivated families as well.

## Observing Behavior: Seeing the Whole Picture

Sometimes observations of a child with his or her parent can be extremely illuminating. Recently, the mother of Sammy, a 4-year-old child with severe behavior problems, came to one of our clinics for assistance. During the interview she told the clinician that her son was “impossible to get dressed,” and “doesn’t listen to a thing I say to him.” She had been told by a family member that Sammy seemed “hyperactive,” and her family doctor had requested a psychological assessment as a result of her insistence on this diagnosis.

A note from his preschool teacher painted a very different picture of this young boy. His teacher spoke frankly of Sammy’s undeveloped skills at following directions or concentrating on a task for any length of time, but pointed out how he settled down much like the other children once he found something that he enjoyed to do. This boy seemed calm during our visit with him at the clinic, so we decided to get a clearer picture of the situation by visiting his home and school.

When we visited the home, the problem stood out within minutes. His home was littered with his toys and games, which his mother let him rummage through and toss around the room freely. Attempts to get her to provide some structure to his play and other activities resulted in an immediate confrontation between the two—he simply turned away and grabbed the toys he wanted, and she became upset and started to chase after him, yelling at him to put his toys away. “See,” she said, turning to the observer, “he doesn’t do a thing I ask him to do.” The boy clutched his toys and quieted down at this point, turned on the TV, and plunked himself in front of it.

Similar attempts on Sammy’s part to avoid doing what his teacher asked were observed during our school visit, although his teacher was more successful at getting him back to the activity at hand by using praise and other positive rewards.

Obviously, the description this mother gave us of her son’s behavior lacked a few of the details that make an accurate diagnosis possible. Her description also failed to mention how upset she got when Sammy “didn’t listen” and that the home



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Observing behavior directly assists in obtaining an accurate picture of the child’s behavior under certain circumstances

environment was rather chaotic and unstructured for a child his age. If we had not made this home observation visit, our assessment of the problem and recommendations for treatment might have been quite different; we may have attributed his misbehavior primarily to hyperactivity, as the mother initially led us to assume. Instead, we developed strategies to teach the mother how to structure her home in a child-friendly manner, how to spend time playing with her son, and how to encourage his compliance by starting with simple requests and using the positive rewards of praise, attention, and activities he enjoyed.

Source: Based on authors’ case material.

## Psychological Testing

A **test** is a task or set of tasks given under standard conditions with the purpose of assessing some aspect of the child’s knowledge, skill, or personality. Most tests are standardized on a clearly defined reference group—for example, children of a certain age, sex, or SES, referred to as a *norm group*. An individual child’s scores can then be compared with the scores of a comparable group of children to determine the extent to which that child’s scores deviate from the norm. The prevalence and visibility of test use in our culture have led some people to adopt the mistaken view that testing and psychological assessment

are one and the same. Although tests play an important role in a child’s assessment, they represent only one part of the overall decision-making process.

It is also important to keep in mind that many psychological tests, because they may have been “normed” on narrow and limited samples, may not be appropriate to use with individuals from racial, ethnic, or cultural groups other than those with whom the tests were normed. It has also been argued that many standardized tests, particularly intelligence and achievement tests, are culturally biased, unfairly penalizing children whose family, SES, and cultural background are different from those of Euro-American middle-class children.

These and other valid criticisms have led to improved tests. For example, test developers now select normative groups that are representative of the population, and test items that are as free of cultural bias as possible. In addition, several professional organizations have joined together to develop a Code of Fair Testing Practices, which presents guidelines for professionals for “fulfilling their obligation to provide and use tests that are fair to all test takers regardless of age, gender, disability, race, ethnicity, national origin, religion, sexual orientation, linguistic background, or other personal characteristics” (Joint Committee on Testing Practices, 2004, p. 2). As a result of these efforts, clinicians have become increasingly sensitive to the role of cultural factors in test administration and interpretation (Sattler, 2008).

Clinicians commonly use developmental scales, intelligence and educational tests, projective tests, personality tests, and neuropsychological tests to assess children’s disorders of development, learning, and behavior (Sattler & Hoge, 2006). In fact, tests (particularly intelligence tests) are among the most frequently used assessment methods with children (Cashel, 2002). Remember, however, that test scores should always be interpreted in the context of other assessment information. Often, observations of a child’s behavior during the test situation can tell us as much or more about the child as his or her test scores.

### Developmental Testing

**Developmental tests** are used to assess infants and young children, and are generally carried out for the purposes of screening, diagnosis, and evaluation of early development. **Screening** refers to identifying children at risk, who are then referred for a more thorough evaluation. Infants and young children at risk for developing later mental health problems are now being assessed more frequently. This is the result of a growing recognition of the importance of early identification, intervention, and prevention, which in turn, have resulted in new laws and public policies requiring such screening (National Infant & Toddler Child Care Initiative, 2010; Wissow et al., 2013). As we discuss in Chapter 6, early screening of children for ASD in primary care settings is now seen as a key to early intervention. Because screening tests are brief, a more thorough assessment of a young child’s development is also needed.

### Intelligence Testing

Evaluating a child’s intellectual and educational functioning is a key ingredient in clinical assessments for a wide range of childhood disorders (Sattler, 2008). For some children, impairments in thinking and learning may result from their behavioral or emotional problems. The drop in Felicia’s grades from Bs to Cs and Ds was likely a function of the impact of her school refusal

and depression on her school performance. For other children, particularly those with intellectual disability or language and specific learning disorders, problems in thinking and learning may be part of the disorder itself.

In many other cases, the nature of the relationship between the child’s disorder and disturbances in thinking and learning is less clear. For example, children with ADHD score lower on standard tests of intelligence and do more poorly in school than other children. Is this lowered performance related to their inattentiveness in the test situation or classroom, or to some other more basic deficit in how they process information? Intellectual and educational assessments can help answer some of these questions.

How would you define intelligence? In Western cultures, most people think intelligence involves problem-solving ability, verbal ability, and social intelligence. David Wechsler, whose test has come to be the one most frequently used to assess intelligence in children, defined intelligence as “the overall capacity of an individual to understand and cope with the world around him” (Wechsler, 1974, p. 5). This definition is consistent with the theories on which commonly used intelligence tests are based. Although debate remains about how to define *intelligence*, intelligence tests are primarily used in clinical settings to identify children who may have difficulty succeeding in a regular classroom and to plan interventions.

Numerous intelligence tests for children exist, each with its own strengths and weaknesses. The Wechsler Intelligence Scale for Children (WISC-IV), the most recent version of a test that was introduced over 60 years ago, is the most popular (Wechsler, 2003). The WISC-IV is made up of 10 mandatory and 5 supplementary subtests that span the age range of 6 to 16 years. According to Wechsler, these subtests assess the child’s global capacity in different ways, but do not represent different types of intelligence. Relative to earlier versions, the WISC-IV places greater emphasis on fluid reasoning abilities, higher-order reasoning, and information-processing speed and less emphasis on possible externally or culturally influenced factors such as arithmetic knowledge (Prifitera, Saklofske, & Weiss, 2005). Tests to assess intelligence in younger children include the Wechsler Preschool and Primary Scale of Intelligence—III (WPPSI-R) (Wechsler, 2002), the Stanford–Binet intelligence scales, 5th edition (SB5) (Roid, 2003), and the Kaufman Assessment Battery for Children (K-ABC-II) (Kaufman & Kaufman, 2004).

Examples of questions and items included on each WISC-IV subtest are shown in A Closer Look 4.2. The WISC-IV is individually administered to the child by a highly trained examiner who follows prescribed procedures. The test produces a Full Scale IQ, derived from four indices: Verbal Comprehension Index,



## Items Similar to Those Included in WISC-IV

### I. Verbal Comprehension Index

#### Similarities (23 items)

- In what way are a pencil and a piece of chalk alike?
- In what way are tea and coffee alike?
- In what way are an inch and a mile alike?
- In what way are binoculars and a microscope alike?

#### Vocabulary (36 items)

- What is a ball?
- What does *running* mean?
- What is a poem?
- What does *obstreperous* mean?

#### Comprehension (21 items)

- Why do we wear shoes?
- What is the thing to do if you see someone dropping a package?
- In what two ways is a lamp better than a candle?
- In the United States, why are we tried by a jury of our peers?

#### Information (33 items)

- How many legs do you have?
- What must you do to make water freeze?
- Who developed the theory of relativity?
- What is the capital of France?

#### Word Reasoning (24 items)

The task is to identify the common concept being described with a series of clues.

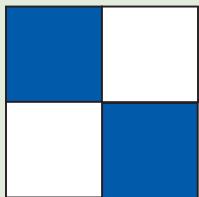
Clue 1: This has a motor . . .

Clue 2: . . . and it is used to cut grass.

### II. Perceptual Reasoning Index

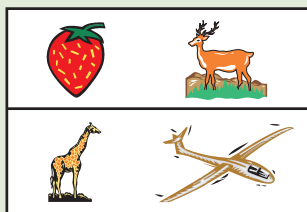
#### Block Design (14 items)

The task is to reproduce stimulus designs using four or nine blocks (see below).



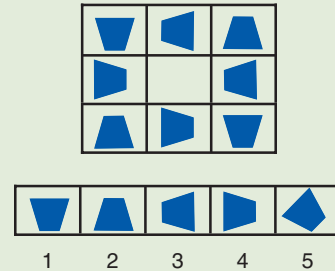
#### Picture Concepts (28 items)

The task is to choose one picture from each of two or three rows of pictures in such a way that all the pictures selected have a characteristic in common (see below).



#### Matrix Reasoning (35 items)

The task is to examine an incomplete matrix and select whichever of the five choices best completes the matrix (see below).



#### Picture Completion (38 items)

The task is to look at a picture—such as that of a car without a wheel, a scissors without a handle, or a telephone without numbers on the buttons—and identify the essential missing part (see below).



### III. Working Memory Index

#### Digit Span (16 items; 8 in Digit Span Forward, 8 in Digit Span Backward)

In one part, the task is to repeat in a forward direction a string of from 2 to 9 digits presented by the examiner (example: 1–8). In the other part, it is to repeat in a backward direction a string of from 2 to 8 digits (example: 6–4–9).

#### Letter-Number Sequencing (10 items, each with 3 trials)

The task is to listen to a string of from 2 to 8 letters and digits (example: 1–b) and repeat it back with the numbers in ascending order followed by the letters in alphabetical order (example: e–6–d–9 would be repeated back as 6–9–d–e).

#### Arithmetic (34 items)

If I have one piece of candy and get another one, how many pieces will I have?

At 12 cents each, how much will 4 bars of soap cost?

If suits sell for 1/2 of the regular price, what is the cost of a \$120 suit?

(continues)

(continued)

#### IV. Processing Speed Index

**Coding (59 items in Coding A and 119 items in Coding B)**

The task is to copy symbols from a key (see below).

1	2	3	4	5	6
x	o	=	L	/	V

2	4	1	5	6	3	5	2	1	6	4	3

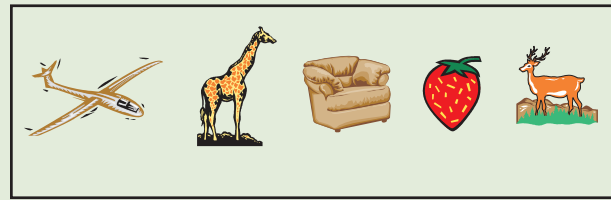
**Symbol Search (45 items in Part A and 60 items in Part B)**

The task is to decide whether a stimulus figure (a symbol) appears in an array (see below).

△	◇	☆	□	◇	±	△	=	×	YES	NO
☆	±	◇	△	±	□	=	×	△	YES	NO
=	×	△	△	☆	□	±	x	◇	YES	NO

#### Cancellation (2 items, one Random and one Sequenced)

The task is to scan both a random arrangement and a sequenced arrangement of pictures and mark target pictures (animals) within a specified time limit (see below).



Note: All of the above items resemble those that appear on the WISC-IV but are not actually from the test.

Based on Sattler, J. M., *Assessment of Children: WISC-IV and WPPSI-III Supplement*, Exhibit 9–1 in *Assessment of Children: Cognitive Foundations*, Sixth Edition, 2008 (pp. 268–269).

Perceptual Reasoning Index, Working Memory Index, and Processing Speed Index. The profile of these four abilities represents key indicators of the cognitive strengths and weaknesses considered important to the assessment of learning disabilities, executive functions, attention disorders, traumatic brain injuries, intellectual disability, giftedness, and various other medical and neurological concerns (Prifitera et al., 2005). Nevertheless, the best evidence indicates that the overall general intelligence score should be favored over the individual indices when interpreting the WISC-IV (Watkins, 2010). True to tradition, IQ scores on the WISC-IV are good predictors of academic achievement.

Felicia obtained a Verbal Comprehension IQ score of 107, a Perceptual Reasoning Index score of 105, a Working Memory Index score of 104, a Processing Speed Index score of 105, and a Full Scale IQ score of 106 on the WISC-IV, which means that her intelligence is in the average range. With this information, the clinician next considers how her test scores relate to each other and whether there is a pattern to the results that might clarify her relative strengths and weaknesses. He or she must also consider any circumstances in the testing situation that might have affected Felicia's performance—anxiety, personality factors, motivation, or medication—and how her scores compare with those of other girls of comparable age, grade, ethnic group, or disability. Finally, and most important, the clinician must consider how the test scores will be used in treatment and educational planning. To assist with treatment planning modified versions of the core and supplemental WISC-IV subtests may be used to gather additional information about how

and why a child obtained a low score on one or more of the subtests (Benson, Hulac, & Bernstein, 2013).

#### Projective Testing

**Projective tests** present the child with ambiguous stimuli such as inkblots or pictures of people, and the child is asked to describe what she or he sees. The hypothesis is that the child will “project” his or her own personality—unconscious fears, needs, and inner conflicts—onto the ambiguous stimuli of other people and things. Without being aware, the child discloses his or her unconscious thoughts and feelings to the clinician, thus revealing information that would not be shared in response to direct questioning (Leichtman, 2004). Many “junior-sized” versions of projective tests have been developed for younger children, for whom the ambiguous stimuli have been made child-friendly by incorporating family scenes or pictures of animals (Levitt & French, 1992).

Projective testing has generated more controversy over the past century than any other clinical assessment method. Most clinicians have strong views about projective testing, either pro or con. You may very well have your own strong opinions about the Rorschach inkblot and similar methods. Some clinicians believe that projective tests provide a rich source of information about the child's coping styles, affect, self-concept, interpersonal functioning, and ways of processing information (Mihura et al., 2013). Other clinicians see them as inadequate with respect to meeting minimum standards for reliability and validity (Lilienfeld, Wood, & Garb, 2006; Wood et al., 2000).

Despite the controversy surrounding their use, projective tests continue to be one of the most frequently used clinical assessment methods (Cashel, 2002). Representative of the many projective techniques used with children and adolescents are human figure drawings, the Rorschach inkblot test, and thematic picture tests, in which children are asked to tell a story in response to pictures of children in everyday situations with their families, peers, or alone. Clinicians may also attempt to assess the child's inner life through play—for example, through the use of puppets, storytelling, or other material (Chethik, 2000). Although they are not formal projective tests, play and drawings are presumed by some clinicians to function in much the same way as projective tests—as a window into the child's unconscious processes.

### Personality Testing

Personality is usually considered an enduring trait or pattern of traits that characterize the individual and determine how he or she interacts with the environment (Roberts & DelVecchio, 2000). For example, children who withdraw from social contact may be characterized

by their parents as shy; others who are socially busy are characterized as outgoing. In a sense, a child's early temperament provides a foundation on which personality is built (discussed in Chapter 2). Several dimensions of personality have been identified, including whether a child or adolescent is timid or bold, agreeable or disagreeable, dependable or undependable, tense or relaxed, reflective or unreflective (Shiner, 2007). These central dimensions of personality have been dubbed the “Big 5” factors (Mervielde & Fruyt, 2002). Many of the methods already discussed, such as interviews, projective techniques, and behavioral measures, provide some information about the child's personality. However, many objective inventories focus specifically on personality, using either the child or a parent as the informant. Two personality inventories frequently used with children are the Minnesota Multiphasic Personality Inventory—Adolescent (MMPI-A) (Butcher et al., 1992/2006) and the Personality Inventory for Children, Second Edition (PIC-2) (Lachar, 1999). Examples of the type of content that may be included in personality inventories are shown in Table 4.4.



Myrleen Pearson / PhotoEdit

Some clinicians may use puppets or other play materials to engage young children in the assessment.

**TABLE 4.4** | Self-Report of Personality Scale Definitions

Construct	Definition
Anxiety	Feelings of nervousness, worry, and fear; the tendency to be overwhelmed by problems
Attitude to school	Feelings of alienation, hostility, and dissatisfaction regarding school
Attitude to teachers	Feelings of resentment and dislike of teachers; the belief that teachers are unfair, uncaring, or overly demanding
Atypicality	The tendency toward bizarre thoughts, or other thoughts and behaviors considered odd
Depression	Feelings of unhappiness, sadness, and dejection; a belief that nothing goes right
Interpersonal relations	The perception of having good social relationships and friendships with peers
Locus of control	The belief that rewards and punishments are controlled by external events or people
Relations with parents	A positive regard toward parents and a feeling of being esteemed by them
Self-esteem	Feelings of self-esteem, self-respect, and self-acceptance

Based on Behavior Assessment System for Children, Second Edition (BASC-2).

## Neuropsychological Assessment

Put simply, neuropsychology is the study of brain-behavior relations (Pennington, 2009). In the clinical context, **neuropsychological assessment** attempts to link brain functioning with objective measures of behavior known to depend on an intact central nervous system. For example, try closing your eyes and then touching the tip of your nose with your ring finger, first with your right hand and then with your left. How do you think you would do on this task if you were sleep-deprived? Even a simple task like this one depends on many psychological functions as well as on an intact nervous system. For children with certain brain injuries or dysfunctions, carrying out this or other tasks may prove difficult.

The premise underlying neuropsychological assessments is that behavioral measures can be used to make inferences about central nervous system dysfunction and, more important, the consequences of this dysfunction for the child. Neuropsychological assessments use this information clinically for determining a diagnosis, planning treatment, documenting the course of recovery, measuring subtle but significant improvements, and performing follow-up care with children who have neurological impairments or learning disorders (Reynolds & Fletcher-Janzen, 2009).

Neuropsychological assessments usually consist of comprehensive batteries that assess a full range of psychological functions: verbal and nonverbal *cognitive functions* such as language, abstract reasoning, and problem solving; *perceptual functions* including visual, auditory, and tactile-kinesthetic; *motor functions* relating to strength, speed of performance, coordination, and dexterity; and *emotional/executive control* functions such as attention, concentration, frustration tolerance, and emotional functioning.

Although neuropsychological assessments were originally used to identify an underlying brain injury or process, this is no longer their primary purpose. The routine use of neuroimaging procedures (Chapter 3), combined with mixed or inconsistent neuropsychological findings, has turned the focus away from diagnosis and toward obtaining information about strengths and deficits in functioning. This information can lead to effective intervention for children with a wide range of neurodevelopmental and learning problems (Riccio, Sullivan, & Cohen, 2010).

## Section Summary

### Assessing Disorders

- Clinical assessment relies on a multimethod assessment approach, which emphasizes obtaining information from

different informants in a variety of settings, using a variety of methods.

- The clinical interview continues to be the most universally used assessment procedure with parents and children.
- In unstructured interviews, interviewers use their preferred style and format to pursue various questions in an informal and flexible manner. In contrast, semistructured interviews include specific questions designed to elicit information in a relatively consistent manner regardless of who is conducting the interview.
- Behavioral assessment evaluates the child's thoughts, feelings, and behaviors in specific settings and uses this information to formulate hypotheses about the nature of the problem and what can be done about it.
- Reports concerning child behavior and adjustment can be obtained using global checklists and problem-focused rating scales. An individual child's scores can be compared with a known reference group of children of a similar age and the same gender.
- Tests are tasks given under standard conditions with the purpose of assessing some aspect of the child's knowledge, skill, or personality.
- Evaluating a child's intellectual functioning is a key ingredient in clinical assessments for a wide range of childhood disorders.
- Projective tests present children with ambiguous stimuli to assess their inner thoughts and feelings that reflect aspects of their personality.
- Objective personality tests assess traits such as whether a child is timid or bold, agreeable or disagreeable, dependable or undependable, tense or relaxed, reflective or unreflective.
- Neuropsychological assessment attempts to link brain functioning with objective measures of behavior that are known to depend on central nervous system functioning.

## CLASSIFICATION AND DIAGNOSIS

Over the past two decades, major changes have occurred in the classification of childhood disorders (Rutter & Uher, 2012). By **classification**, we mean a system for representing the major categories or dimensions of child psychopathology, and the boundaries and relations among them. As you may recall, one definition of *diagnosis* refers to the assignment of cases to categories of a classification system.

We begin our discussion of this important topic by considering some of the reasons for classification and diagnosis with children and adolescents, and we will go into some detail about current approaches. Because diagnosis is not without criticism, we also raise awareness of the impact of labeling children. Until now, we have looked at Felicia's problems on a very



individual basis. We looked at her depression, school refusal, and social skills deficits, and we assessed her general intellectual functioning and behavior. This information tells us what is unique about Felicia and how she differs from others her age. Isn't this enough, you might ask? Why do we need to pigeonhole Felicia by tagging her with a diagnostic label such as "major depressive disorder"? Can't we just find a way to help her with her problems based on what we have learned about her unique characteristics?

Treating every child as unique has its drawbacks: research into the causes and treatments of childhood disorders would be impossible to conduct, and we would have little direction about how to proceed in treating an individual (Waldman & Lilienfeld, 1995). For this reason, we also need to consider what Felicia has in common with others who present with similar problems or symptoms and whether there are general principles that apply to many children. In effect, we do this throughout this text, as we learn about the core symptoms of child and adolescent disorders, their prevalence and course, their associated features, their prognosis, and their treatment. Without such information to use for comparison, making the best decisions concerning Felicia's problem and course of action would be difficult.

As you may recall from our earlier discussion, clinical assessment and diagnosis involve two related strategies for determining the best plan for a given individual. We use an *idiographic* strategy to highlight a child's unique circumstances, personality, cultural background, and other features that pertain to his or her particular situation. Each child who comes in for an assessment has unique strengths and challenges that make his or her problem a little different from the "textbook" case.

In addition, we use a *nomothetic* strategy as part of our assessment in order to benefit from all the information accumulated on a given problem or disorder and to determine the general category for the presenting problem. That is, we attempt to name or classify the problem using an existing system of diagnosis, such as the DSM-5 (APA, 2013) or the ICD-10 (International Classification of Diseases, 10th rev.) Classification of Mental and Behavioural Disorders (World Health Organization [WHO], 1992/2010). Classifying the problem leads to a foundation of knowledge from which we can draw in an attempt to understand the child and family; classification also helps us to communicate with others and to select an intervention, preferably one shown by research to be effective for children with similar difficulties.

Although most of us recognize the advantages of classification for medical and psychological problems,

developing a classification system that is simple and concise enough to be of practical benefit is not an easy task (Taylor, 2011). In fact, despite years of effort, there is no single, agreed-upon, reliable, and valid worldwide classification system for childhood disorders. The DSM has become the standard in North America, but—although it has been used with children across a wide age range—concerns continue to be raised about its limited coverage of childhood disorders, the overlap in symptoms across different childhood disorders, and its insensitivity to the developmental complexities that characterize these problems (e.g., changes in symptom expression with age), particularly for very young children (Pine et al., 2011; Regier et al., 2011). As we discuss below, the DSM-5 has attempted to address these and other concerns, but not without controversy.

## Categories and Dimensions

The first approach to diagnosing child psychopathology involves the use of categorical classification systems. **Categorical classification** systems such as DSM-5 are based primarily on informed professional consensus, an approach that has dominated and continues to dominate the field of child (and adult) psychopathology. A *classical* (or pure) categorical approach assumes that every diagnosis has a clear underlying cause, such as an infection or a malfunction of the nervous system, and that each disorder is fundamentally different from other disorders. Therefore, individual cases can be placed into distinctive categories.

We might say, for example, that Felicia meets the criteria for a major depressive disorder but not for separation anxiety disorder. The disadvantage to this approach, of course, is that children's behavior seldom falls neatly into established categories, so a certain degree of confusion remains. Moreover, categories of behavior (as opposed to some medical diseases) do not typically share the same underlying causes; thus, the mental health field has had to modify the classical categorical approach to accommodate the current state of knowledge. Children given the same diagnosis don't necessarily share the same etiology, nor do they respond to the same treatment. It is therefore crucial to understand that current diagnostic categories represent only our current knowledge about how symptoms cluster together.

The second approach to describing abnormal child behavior involves empirically based dimensional classification. **Dimensional classification** approaches assume that many independent dimensions or traits of behavior exist, and that all children possess them to varying degrees. For example, rather than saying that Felicia's symptoms fit the category of major depressive

disorder, we might say that she is significantly above average (often referred to as being within the *clinical range*) on the dimensions of depression and anxiety. These and other traits or dimensions are typically derived using statistical methods from samples drawn from both clinically referred and nonreferred child populations to establish ranges along each dimension (Achenbach & Rescorla, 2001).

Although they are more objective and potentially more reliable than clinically derived categorical systems, dimensional approaches based on statistical data also have limitations. First and foremost, the derived dimensions are dependent on sampling, method, and informant characteristics, as well as on the age and sex of the child (Mash & Hunsley, 2007). Consequently, integrating information obtained from different methods, from various informants, and over time or across situations can be challenging (De Los Reyes et al., 2013). Dimensional approaches may also be insensitive to contextual influences. For example, suppose you were a parent and were asked to describe whether your child “acts too young” using the scale “never, sometimes, a lot.” You might want to clarify the circumstances or context under which she sometimes acts too young (“whenever I take her grocery shopping” or “when she is playing with other children”). Dimensions provide a useful estimate of the degree to which a child displays certain traits and not others, yet they often have to be tailored to the child’s unique circumstances and developmental opportunities.

Many dimensions of child psychopathology have been identified through research. These include the *externalizing behavior* and *internalizing behavior* dimensions, which reflect aggressive/rule-breaking behaviors and anxious/withdrawn/depressed behaviors, respectively. Some of the most common dimensions identified in children and adolescents are presented in Table 4.5, along with examples of specific associated problem behaviors.

Although the debate about which approach is “best” has not been resolved, there is a growing consensus that each approach has value in classifying childhood disorders and that a combined approach may be needed (Pickles & Angold, 2003). In fact, to some extent, current approaches attempt to do this. For example, the DSM-5 includes dimensional ratings of severity for categorical diagnoses such as ADHD and ASD, and items drawn from empirically derived dimensions such as “anxious/depressed” have been used to develop rationally derived DSM-oriented scales identified by experts from different cultures as being consistent with DSM categories. However, it is not yet known whether combining the two approaches makes an appreciable difference in diagnosis as compared with using just one approach or the other (Ebesutani

**TABLE 4.5** Commonly Identified Dimensions of Child Psychopathology and Examples of Items That Reflect Each Dimension

Anxious/ Depressed	Withdrawn/ Depressed	Social Problems
Cries a lot	Would rather be alone	Too dependent
Worries	Refuses to talk	Doesn't get along
Feels worthless	Secretive	with peers
Nervous, tense	Shy, timid	Gets teased
Somatic Symptoms	Thought Problems	Aggressive Behavior
Feels dizzy	Hears things	Argues
Overtired	Sees things	Mean to others
Aches, pains	Strange behavior	Attacks people
Headaches	Strange ideas	Destroys others' things
Attention Problems	Rule-Breaking Behavior	
Inattentive	Lacks guilt	
Can't concentrate	Bad companions	
Can't sit still	Lies	
Confused	Runs away from home	

Based on Achenbach, T. M. & Rescorla, L. A. (2001). Manual for the ASEBA School-Age Forms and Profiles. (Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families, 2001.

et al., 2010). Some severe forms of intellectual disability may be best conceptualized as qualitatively distinct conditions (categories), whereas most other childhood disorders, such as depression or anxiety, may be best described as extreme points on one or more continuous dimensions.

Also, depending on whether the purpose is clinical diagnosis or research, one approach may be more useful than the other. A dimensional approach to conceptualizing psychological factors such as behavior, affect, and cognitive abilities among children is compatible with research methods that determine the degree of association between two or more variables. Therefore, a dimensional approach is often preferred by those conducting psychological research. A categorical approach, on the other hand, is often more compatible with clinical purposes, for which the objective is to incorporate the whole pattern of the child’s behavior into a meaningful diagnosis and treatment plan. In addition, categories are useful for communicating among clinicians, and categorical diagnoses are

often required for clinical decisions—for example, to determine a child’s eligibility for specialized services. In light of the different types of information provided by dimensions and categories, it is important to incorporate dimensions into current diagnostic practices while also finding feasible ways to reach categorical decisions (Rutter, 2011b).

## The Diagnostic and Statistical Manual of Mental Disorders (DSM-5)

We begin our discussion of the DSM-5 with a brief synopsis of the evolution of current systems of diagnosis to show how far we have come in recognizing mental disorders in children and adolescents. The terminology and focus of prior systems reflected the major theoretical views of mental illness at the time; a shift to a more objective, informed approach occurred by the 1990s and continues today.

### Historical Context

The slow process of formal recognition of the prevalence and significance of mental disorders began in 1948, when the *International Classification of Diseases* (ICD-6) added a section on mental disorders (WHO, 1948). Because many thought that the early ICD system was inadequate, in 1952 the American Psychiatric Association (APA, 1952) developed its own *Diagnostic and Statistical Manual of Mental Disorders* (DSM-I), which was revised in 1968 (DSM-II) (APA, 1968). These first efforts were not a huge success, but they did launch a sustained effort to improve the classification of mental disorders, an effort that continues today. Unfortunately, children and adolescents were neglected in the early versions of DSM; most childhood disorders were relegated to the adult categories, with the exception of mental retardation (intellectual disability), schizophrenia–childhood type, and transient disturbances in behavior or mood.

The DSM-III and DSM-III-R (APA, 1980, 1987) provided significant advances over the earlier versions. They discarded psychodynamic assumptions about etiology used in the earlier versions in favor of an atheoretical descriptive approach based on observable signs and symptoms. Clinical descriptions were replaced by explicit diagnostic criteria that helped to increase diagnostic reliability. In addition, they included more child categories and placed a greater emphasis on empirical data. With these changes came a shift in diagnostic systems and causal models. Less focus was put on the disorder existing within the child alone, and more emphasis was placed on the surrounding context in which the problem occurred. The DSM-III-R was developed to be a *prototypical* classification system by

which a child could be diagnosed with a certain subset of symptoms without having to meet all symptom criteria. This was an important change, especially in view of the heterogeneity of symptoms associated with most childhood disorders (Mash & Hunsley, 2007). On the other hand, it also means that individuals with the same diagnosis can and often do show very different patterns of symptoms. Consider that there were nearly 150 million different ways for an individual to meet the DSM-III-R criteria for an antisocial personality disorder (Widiger, 1993). The DSM-IV was published in 1994, followed by a revision in 2000 (DSM-IV-TR). Many changes were made to the classification system, the criteria sets for diagnosis, and the descriptive text in order to keep up with new research, correct factual errors, and provide new information.

### DSM-5 Disorders

The DSM-5 was published in 2013, nearly two decades after the DSM-IV. The child and adolescent knowledge base has changed dramatically in the past 20 years. These changes necessitated conceptual, diagnostic, and procedural revisions, which are described in later chapters on disorders. We first introduce you to DSM-5 disorders that apply to children and adolescents. The first grouping, *Neurodevelopmental Disorders*, is shown in Table 4.6, and will be discussed in detail in the chapters to follow. Historically, these disorders were thought of as first occurring in childhood or as exclusive to childhood. However, it is now apparent that these early-occurring disorders continue into adolescence and adulthood for many of those affected. In addition to

**TABLE 4.6 | Neurodevelopmental Disorders**

Intellectual Disabilities	DSM-5
(Intellectual Disability [Intellectual Developmental Disorder] [mild, moderate, severe, profound], Global Developmental Delay)	
Autism Spectrum Disorder (with or without accompanying intellectual or language impairment)	
Communication Disorders (Language Disorder, Speech Sound Disorder, Childhood-Onset Fluency Disorder [Stuttering], Social [Pragmatic] Communication Disorder)	
Specific Learning Disorder (with impairment in reading, written expression, or mathematics)	
Attention-Deficit/Hyperactivity Disorder (predominantly hyperactive/impulsive predominantly inattentive, or predominantly combined presentation)	
Motor Disorders (Developmental Coordination Disorder, Stereotypic Movement Disorder, Tourette’s Disorder, Persistent [Chronic] Motor or Vocal Tic Disorder)	

Source: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. American Psychiatric Association.

their early age at onset, the grouping of these disorders is also based on a suggested overlap of risks (e.g., genetic, developmental trajectories) that are not shared by disorders in other groups (Andrews et al., 2009). This grouping also recognizes that neurodevelopmental disorders frequently have overlapping symptoms and that they often co-occur in the same individual (e.g., a comorbid diagnosis of ASD and ADHD, or ADHD and Specific Learning Disorder) (Pettersson et al., 2013).

Table 4.7 presents other major disorders that apply to children and adolescents. Under the DSM-5 guidelines, diagnostic criteria for nearly all disorders (e.g., ADHD, ASD, mood, anxiety, eating, sleep) can apply to children as well as adults and both groups can be diagnosed using essentially the same criteria with some adjustment for developmental factors such as age and context (e.g., PTSD for Children Age 6 Years or Younger). A child can (and often does) receive more than one DSM-5 diagnosis, with the principal diagnosis listed first (e.g., ADHD; anxiety disorder). You should not try to memorize all of these terms right now, but simply get a feel for the organization and coverage to follow in later chapters.

**DSM-5 Specifiers**

After assessment using DSM-5 diagnostic criteria, **specifiers** are used to describe more homogeneous subgroups of individuals with the disorder who share particular features and to communicate information that is relevant to treatment of the disorder. Specifiers

may be used to rate subtypes of the disorder, co-occurring conditions, or the course or severity of the disorder, as appropriate. Common examples are: a subtype specifier such as “Predominantly inattentive presentation” for a child with ADHD; a co-occurring condition specifier such as “language impairment” or “intellectual impairment” for a child with ASD; a course specifier such as “onset prior to age 10 years” for a child with conduct disorder; or a severity specifier such as “mild,” “moderate,” “severe,” or “profound” for a child with intellectual disability (ID) (APA, 2013).

Specifiers may also be used to note general medical conditions relevant to the understanding or management of the individual’s mental disorder. Because DSM-5 assumes that mental disorders are closely related to physical and biological factors, the purpose of specifying general medical conditions is to encourage thoroughness in evaluation and to enhance communication among health care providers. General medical conditions can be related to mental disorders in a variety of ways. In some cases, the disorder may play a direct role in the development of physical problems, such as a disruption in sleep due to depression. In other cases, a child’s clinical disorder, such as anxiety, may be a psychological reaction to a medical condition, such as being diagnosed with childhood cancer or diabetes. Clearly, it is important to document the co-occurrence and temporal order of problems to gain an overall understanding and to develop an appropriate treatment plan for an individual.

**TABLE 4.7 | Other Selected Disorders of Childhood and Adolescence**

<i>Disruptive, Impulse Control, and Conduct Disorders</i> (Oppositional Defiant Disorder, Conduct Disorder [childhood-onset or adolescent-onset type; with limited prosocial emotions], Antisocial Personality Disorder)	<b>DSM-5</b>
<i>Depressive Disorders</i> (Disruptive Mood Dysregulation Disorder, Major Depressive Disorder, Persistent Depressive Disorder [Dysthymia])	
<i>Bipolar Disorders</i> (Bipolar I Disorder, Bipolar II Disorder, Cyclothymic Disorder)	
<i>Anxiety Disorders</i> (Separation Anxiety Disorder, Selective Mutism, Specific Phobia, Social Anxiety Disorder [Social Phobia], Panic Disorder, Agoraphobia, Generalized Anxiety Disorder)	
<i>Obsessive—Compulsive and Related Disorders</i> (Obsessive-Compulsive Disorder, Body Dysmorphic Disorder, Hoarding Disorder, Trichotillomania [Hair-Pulling Disorder], Excoriation [Skin-Picking] Disorder)	
<i>Trauma- and Stressor-Related Disorders</i> (Reactive Attachment Disorder, Disinhibited Social Engagement Disorder, Post-Traumatic Stress Disorder [PTSD] including PTSD for Children 6 Years and Younger, Acute Stress Disorder, Adjustment Disorders)	
<i>Feeding and Eating Disorders</i> (Pica, Rumination Disorder, Avoidant/Restrictive Food Intake Disorder, Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder)	
<i>Elimination Disorders</i> (Enuresis, Encopresis)	
<i>Sleep-Wake Disorders</i> (Insomnia Disorder, Hypersomnolence Disorder, Narcolepsy, Breathing-Related Sleep Disorders, Parasomnias)	
<i>Somatic Symptoms and Related Disorders</i> (Somatic Symptom Disorder, Illness Anxiety Disorder, Conversion Disorder, Psychological Factors Affecting Other Medical Conditions, Factitious Disorder (including imposed on self and imposed on another)	
Others: Substance-Related and Addictive Disorders, Personality Disorders	

Source: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. American Psychiatric Association.



## Other Considerations

In making a diagnosis, it is also important to consider *psychosocial and environmental problems* that may affect the diagnosis, treatment, and prognosis of clinical disorders. Such problems include negative life events, environmental disruptions or deficiencies, family or other interpersonal stress, and lack of social support or personal resources. Typically, clinicians note only the problems that have been present over the past year, unless prior events—for example, an automobile accident—have likely contributed to the mental disorder. Contextual factors, such as child abuse or parental unemployment, are potentially important for understanding an individual's behavior and emotions. We remind you of this important consideration throughout our discussion of various disorders of childhood and adolescence because a child's presenting problem is often better understood if we can see the whole picture. Although DSM-5 did not develop its own classification of psychosocial and environmental problems, it refers clinicians to selected codes from the most current version of the ICD (ICD-10; WHO, 1992/2010).

Based on our clinical assessment Felicia was given the DSM-5 diagnosis of “Major Depressive Disorder, single episode,” with “mild anxious distress,” and a current severity rating of “Moderate” (based on the number and intensity of her symptoms and her impairment in social and school functioning). A diagnosis of Major Depressive Disorder (MDD), which we discuss in Chapter 10, was made because Felicia showed symptoms of depressed mood, loss of interest in almost all activities, significant weight loss, insomnia nearly every night, and feelings of worthlessness that persisted for more than 2 weeks and represented a change from her previous functioning. These symptoms were causing significant distress and impairment in Felicia's social and school functioning. We also noted that Felicia was experiencing mild anxious distress based on her reports of feeling tense and finding it difficult to concentrate on most days when she was depressed. Although the loss of her grandfather may have been a factor in Felicia's depression, it did not seem to be the major factor accounting for her symptoms.

## Criticisms of DSM-5

Although DSM-5 includes numerous improvements over previous versions because of its greater emphasis on empirical research and more explicit diagnostic criteria sets, it is not faultless. Because DSM-5 focuses on descriptions of symptoms as the basis for generating categories, it has been criticized for failing to capture the complex adaptations, transactions,

and setting influences that we have identified as crucial to understanding and treating psychopathology in children (Mash & Hunsley, 2007). DSM-5 also gives relatively less attention to disorders of infancy and childhood than to those of adulthood, and it fails to fully capture the interrelationships and overlap known to exist among many childhood disorders.

A further difficulty with DSM-5 diagnostic criteria for children is the relative lack of emphasis on the situational and contextual factors surrounding and contributing to various disorders in making a clinical diagnosis (Beauchaine, 2003). This reflects the fact that DSM-5 views a mental disorder as an individual psychopathology or risk for psychopathology, rather than in terms of problems in psychosocial adjustment or adaptation. However, DSM-5 explicitly gives much greater consideration than did its predecessors to factors such as culture, age, and gender that are associated with the expression of each disorder, and it has increased its recognition of the importance of family problems and extrafamilial relationship difficulties. In all likelihood, this awareness of the context for childhood disorders will encourage a greater sensitivity to developmental factors in diagnosing these disorders.

A different type of criticism deals with how DSM-5 is used rather than with the classification system itself. In some cases, DSM-5 categorical diagnoses can be an impediment to gaining proper services to address children's needs. For example, to qualify for a special education class, a child may be required to meet specific diagnostic criteria for a specific learning disorder. In the “typical” case, such requirements are usually met. However, some children may not have developed problems to the degree that they meet specific diagnostic criteria, or their problems may relate to more than one DSM category. These children may not qualify for services that otherwise could prove beneficial. It might be difficult to access programs to *prevent* future problems from developing in these at-risk children.

Finally, there are broader concerns about current classification systems such as DSM-5. One concern is that current systems contain excessively large numbers of diagnostic categories of limited validity, particularly in relation to improving treatment selection and outcomes (Uher & Rutter, 2012). A second is that they define disorders based on observable signs and symptoms that fail to map closely onto the underlying causes for these disorders. In response, the National Institute of Mental Health (NIMH) launched an initiative—the Research Domain Criteria (RDoC)—to classify mental disorders based on their biological origins

(Insel et al., 2010; Sanislow et al., 2010). The goal of RDoC is to develop future classification systems based on research findings for domains of functioning that map onto the underlying pathophysiology of the disorder rather than onto its observable symptoms. Preliminary work has defined various domains of functioning (e.g., cognitive systems, arousal/regulatory systems), broken down into specific constructs within domains (e.g., attention, circadian rhythms) that have units of analysis at the genetic, molecular, neural, and behavioral levels (Cuthbert & Kozak, 2013; Insel et al., 2010). We already know that many, if not all, of these levels of analysis will cut across disorders as they are currently defined, which suggests to some that an alternative approach based on underlying neurobiological systems is needed (Hayden & Mash, 2014).

RDoC proponents believe that this approach will eventually displace current classification systems and that laboratory-based approaches will supplant those classification systems in clinical assessment, leading to the identification of more precise and effective treatments (Insel, 2013; Insel et al., 2010). This is an ambitious goal in light of the currently limited ability of genetic and neuroimaging findings to predict treatment

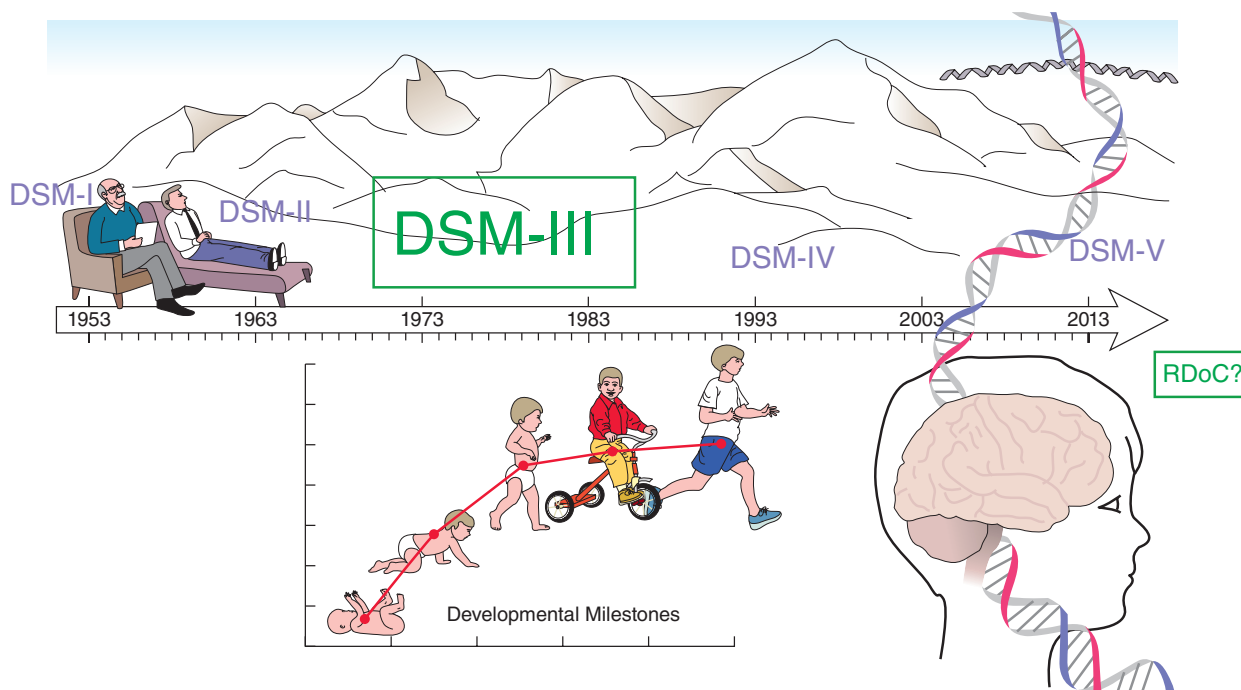
response or other important clinical outcomes; at present, most constructs that predict clinical outcomes (e.g., age at onset, negative life events) would be regarded as “psychological” or “behavioral” rather than biological (Hayden & Mash, 2014). The RDoC initiative is still in its infancy. It remains to be seen whether this approach will achieve its expressed objectives and also lead to a classification system that viable for use in clinical practice.

### Pros and Cons of Diagnostic Labels

*What's the use of their having names, the gnat said, "if they won't answer to them?" No use said Alice, "but it's useful to the people that name them, I suppose. If not, why do things have names at all?"*

—Lewis Carroll, 1871

Despite every attempt to the contrary, the history of the classification of mental disorders has been fraught with disparaging and negative connotations that become attached to the labels used to describe these disorders (Hinshaw & Stier, 2008). The terms *moron*, *imbecile*, and *idiot*, for instance, were originally chosen in the



● **FIGURE 4.3** | Classification of Child and Adolescent Disorders: 60 Years and Still Developing  
Developments in child and adolescent diagnosis increased dramatically with the appearance of DSM-III in 1980. Current developments, such as the RDoC initiative, are focusing on the development of a classification system based on what we know about the genetic, brain, and other processes underlying child and adolescent disorders.

Source: Pine, D. (2013). A 60-Year Climb on the Mountain of Nosology. *Journal of the American Academy of Child & Adolescent Psychiatry*, 55, 1254.

early 1900s as neutral terms to describe lower levels of intellectual functioning, but they quickly became insults when they began to be used in common language. As a result, they gave way to terms such as *mental deficiency* and then *mental retardation*, which has now given way to the term *intellectual disability* for much the same reason. Stigma, it would seem, rapidly catches up with changes in terminology.

Much has been written about the positive and negative aspects of assigning diagnostic labels to children. On the positive side, labels help clinicians summarize and order observations, which can facilitate communication among professionals and sometimes aid parents by providing more recognition and understanding of their child's problem. Providing a label that communicates that the basis of the child's disorder is a condition (e.g., neurodevelopmental disorder) that is outside the control of the family or child and is not the result of something the parents did may also be welcomed. Moreover, descriptive labels are consistent with the natural tendency to think in terms of categories. That is, we tend to talk about ourselves, our friends, and our children as being happy, angry, depressed, or fearful, rather than use a number on a scale that signifies a range of emotion, even if a number might give a more accurate account. Finally, the use of descriptive terms or labels assists clinicians in locating a relevant body of detailed research and clinical data, and facilitates research on the causes, epidemiology, and treatment of specific disorders.

On the negative side are criticisms as to whether current diagnostic labels are effective in achieving any of the aforementioned purposes. There are also concerns about negative effects and stigmatization associated with assigning labels to children (Ben-Zeev, Young, & Corrigan, 2010; Hinshaw, 2007a). Public stigma and media messages allow negative attitudes to grow around children who are labeled. Once labeled, others may perceive and react to a child differently ("he's a hyperactive boy—you'll never get him to listen"). Classmates pick up on the use of labels, especially labels associated with visible treatments such as taking medication. A note sent by a classmate to a boy with ADHD reflects this: "Jack was ill, he took his pill, let's hope it makes him sit still." Standing out and being teased or bullied by other children may worsen the problem. Equally disturbing is that labels can negatively influence children's views of themselves and their behavior. In general, the reactions of others to persons who seem different or who have been diagnosed with a mental illness versus a physical illness reveal a tendency to generalize inappropriately from the labels (Corrigan, 2000; Martinez et al., 2011).

## Section Summary

### Classification and Diagnosis

- Classification refers to a system for representing the major categories of child psychopathology and the relations among them.
- Diagnosis refers to the assignment of cases to categories of the classification system.
- Childhood disorders have been classified using categories and dimensions.
- Categorical classification systems such as the DSM-5 have been based primarily on informed professional consensus and overt symptoms.
- Dimensional classification approaches assume that many independent dimensions or traits exist and that all children possess these to varying degrees.
- The terminology and focus of early classification systems reflected the major theoretical views of mental illness at the time; a shift to a more objective, informed approach occurred by the 1990s and continues today.
- The DSM-5 includes a number of neurodevelopmental disorders that have an onset in early childhood, as well as a broad range of other clinical disorders relevant to children.
- The DSM-5 incorporates the use of *specifiers* to define more homogeneous subgroupings of individuals with the disorder who share particular features and to communicate information that is relevant to treatment of the disorder.
- The DSM-5 has been criticized for failing to capture the complexity of child psychopathology, for giving less attention to disorders of infancy and childhood than to those of adulthood, for its relative lack of emphasis on situational and contextual factors, and for its emphasis on symptoms rather than on underlying etiology.
- Although diagnostic labels can facilitate communication among professionals, concerns have been raised about the negative effects and stigmatization associated with the assignment of labels to children.

## TREATMENT AND PREVENTION

*I have found the best way to give advice to your children is to find out what they want and then advise them to do it.*

—Harry S Truman

Over the past two decades, effective treatment approaches for children and adolescents with behavioral and emotional problems and their families have grown tremendously in their sophistication and their breadth (Chorpita et al., 2011; Kaslow et al., 2012). Interventions today are planned by combining the most effective approaches to particular problems in an ongoing developmentally sensitive manner (Mash, 2006). Behavioral reward programs, for example, may be very useful for

teaching parents of a young, difficult child ways to encourage desirable behavior. Once the child is a bit older, he or she may profit from cognitive-behavioral methods that address how the child thinks about social situations, such as making friends and avoiding conflicts.

A thorough clinical assessment and diagnosis constitute a critical first step in helping Felicia and other children who have psychological problems and their families. However, assessment and diagnosis are only the beginning of an ongoing helping process. We next must ask: “How can we help Felicia reduce her feelings of depression and hopelessness, eliminate her sleep disturbances and other somatic symptoms, increase her school attendance and performance, and improve her social skills and relationships with other children and her parents?” This is where intervention comes into play.

How do we determine the best type of intervention for children like Felicia and for those with other problems? We will consider this question in some detail for each disorder discussed in the chapters that follow; thus, our coverage of treatment and prevention in this section is intended to provide only a brief introduction. Our discussion of interventions in later chapters addressing specific problems follows from our general conviction that the most useful treatments are based on what we know about the nature, course, associated characteristics, and potential causes of a particular childhood disorder. However, this is not enough. We also need data to show that our interventions work (Silverman & Hinshaw, 2008). Interventions that zoom in on a specific problem with clear guidelines for treatment appear to be the most effective. Thus, our chapter-by-chapter coverage of treatments will be selective, focusing primarily on interventions that are tailored to what we know about each disorder and that have evidence for their effectiveness in treating youths with this disorder.

In this section, we provide an overview of what we mean by intervention, cultural considerations in treatment, treatment goals, ethical and legal considerations, main approaches to helping children with problems and their families, and what we know about the effectiveness of interventions for young people. The overall goal is to introduce you to important foundational issues associated with interventions for youths and their families.

## Intervention

*Better put a strong fence 'round the top of the cliff than an ambulance in the valley.*

—Joseph Malins (1895)

**Intervention** is a broad concept that encompasses many different theories and practices directed at helping the child and family adapt more effectively to their current and future circumstances. There is no one best single

approach to working with children and families—multiple problems require multiple solutions. Clinical assessment and diagnosis are usually followed by efforts to select and implement the most promising approach to intervention. Since psychological disorders typically represent failures in adaptation on the part of the child and/or his or her social environment, problem-solving strategies are part of a *spectrum* of activities for treatment, maintenance, and prevention.

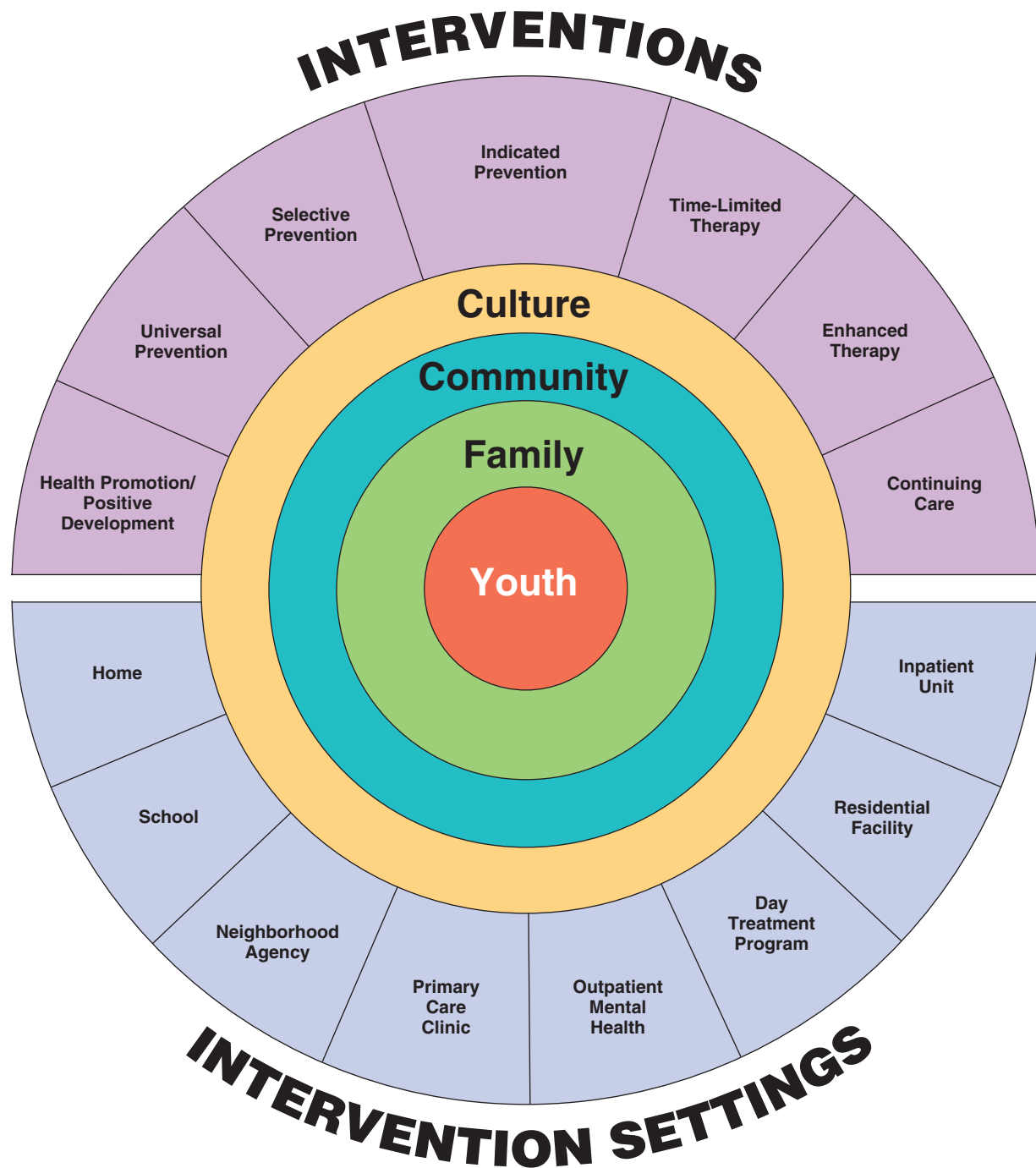
● Figure 4.4 illustrates a spectrum of interventions and intervention settings for children and families. As shown, the strengths of youths, their families, communities, and cultures are nourished and maintained by effective interventions across a variety of life settings using a coordinated system of care (American Academy of Child and Adolescent Psychiatry [AACAP], 2007a). Interventions in the upper portion of the figure range from the most universal (directed at groups not having specific risks, problems, or disorders) on the left, to those that focus specifically on youths with lasting long-term conditions (e.g., autism) on the right (Weisz et al., 2005).

Note that interventions cover a wide range of actions, from prevention to maintenance. **Prevention** efforts are directed at decreasing the chances that undesired future outcomes will occur (Ialongo et al., 2006). They are based on the premise that it is inherently better to promote health and prevent problems before they occur, for example, by using school-based programs to prevent bullying and victimization (Farrington & Ttofi, 2009). **Treatment** refers to corrective actions that will permit successful adaptation by eliminating or reducing the impact of an undesired problem or outcome that has already occurred; **maintenance** refers to efforts to increase adherence to treatment over time to prevent relapse or recurrence of a problem. Prevention, treatment, and maintenance efforts complement one another by focusing on different stages of problem development with youths identified in different ways and in different settings, including those who may never seek help. By targeting both risks *and* existing problems and disorders, the combination of prevention and treatment has enormous potential to reach a diverse range of youths and families across a wide range of settings (Weisz, Donenberg et al., 1995).

Interventions are best depicted as part of the ongoing decision-making approach emphasized throughout this chapter. Our assessments should help us answer many questions that are essential for intervention. In Felicia’s case, our answers to some of the following questions will guide us in determining which, if any, of the numerous available treatment options will be used:

- ▶ Should Felicia’s difficulties be treated? If so, which ones? Depression? School refusal? Social skills deficits? Relations with family members? All of them?





● **FIGURE 4.4** | The intervention spectrum and settings for childhood disorders.

Based on Weisz, J. R., Sandler, I. N., Durlak, J. A., and Anton, B. S. (2005). Promoting and protecting youth mental health through evidence-based prevention and treatment.

- ▶ What are the projected outcomes for Felicia in the absence of treatment?
  - ▶ Based on the evidence, what treatments are likely to be most effective, efficient, and cost-effective for Felicia's depression, school refusal, and social skills deficits?
  - ▶ What treatments are likely to be most acceptable to Felicia and to her family?
  - ▶ When should treatment for Felicia begin? When should treatment be terminated?
  - ▶ Is the intervention having the desired impact on Felicia's behavior? Are the changes meaningful for Felicia and her family? Do they make a real difference in their lives?
- The ultimate goal of addressing these questions should be to achieve effective solutions to the problems

faced by Felicia, her family, and other children like her, and then to promote and enhance long-term adjustments.

## Cultural Considerations

Most interventions for youths with problems have failed to incorporate the unique experiences of ethnic minority children and their families (Yasui & Dishion, 2007). However, as evidence-based interventions have advanced, so has a growing awareness of the cultural context of children and families receiving psychological interventions (Huey & Polo, 2008; Scott et al., 2010). Parents from different ethnic groups and cultures have different parenting values and use different child-rearing practices. They also have different beliefs about childhood problems, how mental health services are provided, how to describe their children's problems when they seek help, and preferred interventions (Yasui & Dishion, 2007; Yeh et al., 2005). The **cultural compatibility hypothesis** states that treatment is likely to be more effective when it is compatible with the cultural patterns of the child and family. The importance of cultural sensitivity in treatment is reflected in the finding that for some problems and treatments, ethnic similarity between a child's caregiver and the therapist is associated with better treatment outcomes for the child (Halliday-Boykins, Schoenwald, & Letourneau, 2005).

Culturally competent children's mental health services may be provided in a number of ways. For example, in therapy for Hispanic children and adolescents, cultural competence may be achieved by matching children and families with clinicians of the same ethnicity; by customizing the treatment to Hispanic

cultural values, beliefs, and customs (e.g., familism, spiritualism, and *respeto*); or by incorporating ethnic and cultural narratives and role play into therapy (Malgady, 2010). In recent years, existing evidence-based treatments have been successfully adapted and implemented to meet the needs of specific cultural groups—as, for example, in the case of a cognitive-behavioral intervention for trauma in American Indian youths (Goodkind, LaNoue, & Milford, 2010). Such cultural adaptations of existing treatments may include changes in treatment surface structure (e.g., changes in treatment materials, mode of service delivery, or treatment setting), as well as deep structure changes that focus on factors unique to a particular racial or ethnic group, such as cultural beliefs regarding how trauma affects health and cultural practices for treating these problems.

Treatment services for children must not only attend to the presenting symptoms but must also consider the specific values, norms, and expectations present within many cultures; the various religious beliefs and practices of each family; and other circumstances that might make what is a successful treatment for one family a failure for another (Schwoeri, Sholevar, & Combs, 2003). Cultural values and common parenting practices and beliefs for five different cultural groups are shown in Table 4.8.

Can you think of how these cultural beliefs and practices might lead us to use different treatments? One issue might be the different parenting styles cross-culturally. African American families place greater emphasis on strict discipline, whereas Latino and Native American parents are generally more permissive. In helping families establish effective rules and forms of discipline for their children, the clinician must be aware of these important cultural practices and find methods that each parent is comfortable using. As we emphasized earlier, generalizations about cultural practices and beliefs may fail to capture the diversity that exists within and across cultural groups, so we must be extremely careful not to stereotype individuals of any cultural group.



*"I like to think that each generation will need a little less therapy than the generation before."*

The New Yorker Collection 1999 Barbara Smeller from Cartoonbank.com. All Rights Reserved.

## Treatment Goals

What are the typical goals of treatment? Reducing symptoms (problems), producing more substantial changes that will enhance the child's long-term functioning, or both? Since both are important, treatment goals often focus on building children's adaptation skills to facilitate long-term adjustment, rather than on merely eliminating problem behaviors or briefly

**TABLE 4.8 | Cultural Values and Parenting Practices and Beliefs**

	<b>African American</b>	<b>Latino American</b>	<b>Asian American</b>	<b>Native American</b>	<b>European American</b>
<b>Cultural Values</b>	Communalism Individualism Kinship relations Unity Creativity Cooperation Authenticity Racial identity	Family loyalty Interpersonal connectedness Mutual respect Self-respect	Self-control Social courtesy Emotional maturity Respect for elders	Centrality of family Sharing Harmony Humility	Independence Autonomy Individualism Initiative Acquisition of skills Self-development Standing up for one's own rights
<b>Parenting Practices and Beliefs</b>	Authoritarian parenting No-nonsense parenting Unilateral parental decision-making Egalitarian family structure Strict discipline Communal parenting	Authoritarian parenting Patriarchal family structure High expression of parental warmth Communal parenting Freedom	Authoritarian parenting Structural and managerial parental involvement Patriarchal family structure Strict discipline Parental control Negotiation of conflict Parent as teacher	Permissive, lax parenting Shame as discipline Patriarchal and matriarchal family structures Communal parenting	Authoritative parenting Egalitarian family structure Parent as manager Demanding

Sources: Adapted from Forehand and Kotchik, 1996; and from Yasui and Dishion, 2007.

reducing subjective distress. Other treatment goals and outcomes are also of crucial importance to the child, family, and society (Jensen, Hoagwood, & Petti, 1996; Kazdin, 1997). These include:

- ▶ *Outcomes Related to Child Functioning:* Reduction or elimination of symptoms, reduced degree of impairment in functioning, enhanced social competence, improved academic performance
- ▶ *Outcomes Related to Family Functioning:* Reduction in family dysfunction, improved marital and sibling relationships, reduction in stress, improvement in quality of life, reduction in burden of care, enhanced family support
- ▶ *Outcomes of Societal Importance:* Improvement in the child's participation in school-related activities (increased attendance, reduced truancy, reduction in school dropout rates), decreased involvement in the juvenile justice system, reduced need for special services, reduction in accidental injuries or substance abuse, enhancement of physical and mental health

The interlocking network of physical, behavioral, social, and learning difficulties that characterizes most childhood disorders requires a multidisciplinary approach to attain these treatment and prevention goals.

In many instances, children require medication or medical intervention that must be coordinated with psychosocial interventions, such as in connection with ADHD, ASD, eating disorders, depression, and chronic medical conditions. Thus, the use of combined treatments is common. In addition, psychological interventions for children and adolescents often require integration with effective teaching strategies, as illustrated in later chapters addressing intellectual disability, communication disorders, and specific learning disorder. Finally, some children require integration of community and social services to aid in their protection and basic needs, which we discuss in Chapter 12 in the section on child abuse and neglect.

## Ethical and Legal Considerations

Many children referred for assessment and treatment experience multiple disadvantages and arguably need special help and protection. Both ethically and legally, clinicians who work with children and families are required to think about the impact that their actions will have not only on the children themselves, but also on the responsibilities, rights, and relationships that connect the children and their parents (Dishion & Stormshak, 2007a; Prout & Prout, 2007).



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Cultural background is an important consideration in understanding the child's uniqueness and expectation.

The ethical codes of professional organizations, such as the American Academy of Child and Adolescent Psychiatry (2009) and the American Psychological Association (2002, 2010), provide minimum ethical standards for practice, including: (a) selecting treatment goals and procedures that are in the best interests of the client; (b) making sure that client participation is active and voluntary; (c) keeping records that document the effectiveness of treatment in achieving its objectives; (d) protecting the confidentiality of the therapeutic relationship; and (e) ensuring the qualifications and competencies of the therapist. There is also an increasing emphasis on involving children, depending on their developmental level, as active partners in decision making with regard to their own psychological or medical treatment (McCabe, 1996, 2006).

In addition to these general ethical standards, there is a growing recognition of the unique challenges and ethical dilemmas associated with mental health interventions for children and their families (Belitz &

Bailey, 2009). Several core ethical issues for mental health interventions with children and families versus interventions with adults are highlighted in Table 4.9. Ethical issues with children are complex because of ongoing changes in the legal status of children and a trend toward recognition of minors' constitutional rights, including self-determination and privacy (Melton, 2000). However, a more basic issue is determining when a minor is competent to make his or her own decisions, rather than determining only whether he or she has the legal right to do so. Some of the challenging issues faced by clinicians working with children include deciding when a minor can provide informed consent or refuse treatment as well as balancing the child's rights to confidentiality against the rights of the parents and the integrity of the family.

In addition to these ethical and legal concerns, much larger ethical questions concern the provision of services for children and families. Many interventions currently used to treat children with complex problems are known to be limited in scope—for example, 1 hour per week of therapy—and cannot realistically be expected to have a meaningful or lasting impact on children who are experiencing severe problems. Furthermore, a number of currently used interventions are intrusive,

**TABLE 4.9** Ethical Issues in Clinical Work with Children and Families

1. Children are inherently more vulnerable than adults.
2. Children's abilities are more variable and change over time.
3. Children are more reliant upon others and upon their environment.
4. Ethical principles and practices in the treatment of adults must be modified in response to the child's current developmental abilities and legal status.
5. Boundary and role issues are often more prevalent and more complex when caring for children than for adults.
6. Adult practices, and the adult knowledge base, do not transfer reliably to the care of children.
7. Practitioners must develop skills to work with families, agencies, and systems.
8. It is key to monitor one's own actions and motivations.
9. Seeking consultation and advice is helpful in difficult situations.
10. It is essential to maintain an absolute commitment to the safety and well-being of the patient.

Source: Reprinted from *Psychiatric Clinics of North America*, 32, Belitz, J. & Bailey, R. A., Clinical ethics for the treatment of children and adolescents: A guide for general psychiatrists, 243–257, Copyright 2009, with permission from Elsevier.



expensive, and not supported by data (Kazdin, 2000). A more fundamental and thorny ethical question in some cases is whether we should provide any treatment when we know that the treatment may not make a difference or, even worse, may have harmful effects.

Clinicians who work with children and their parents need to be aware of federal, state, and local laws that affect both assessment and treatment of children with special needs. Many of these laws apply to children with mental and physical disabilities and handicaps and are based on the recognition that disability is a natural part of the human experience and that all citizens (children included) are entitled to equal treatment and education. Two laws that have had a profound influence on services for children with disabilities are the Education for All Handicapped Children Act (1975) and its amendment, the Individuals with Disabilities Education Improvement Act (2004). The following are two of the many purposes of these laws:

- ▶ To ensure that all children with disabilities have available to them a free, appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for employment and independent living.
- ▶ To ensure that the rights of children with disabilities and of the parents of such children are protected.

## General Approaches to Treatment

The number and diversity of treatments for children have grown tremendously; currently, more than 550 treatments are currently in use to help children (Kazdin, 2000). While we will (thankfully) not attempt to cover them all, in the remainder of this chapter we provide a brief overview of several of the major approaches. More than 70% of practicing clinicians who work with children and families identify their approach as *eclectic*; this means that they use different approaches for children with different problems and circumstances and that they see most of these approaches as having value. In light of this practice, the large number of treatments specified above likely represents a vast underestimate of the full range of treatments used with children. Let's now turn to a brief overview of some of the general approaches to treatment and see how they might apply to Felicia.

### Psychodynamic Treatments

Psychodynamic approaches view child psychopathology as determined by underlying unconscious and conscious conflicts (Lesser, 1972). Therefore, the focus is on helping the child develop an awareness of unconscious factors that may be contributing to his or her problems (AACAP, 2012; Galatzer-Levy et al., 2000). With

younger children, this awareness can occur through play therapy (Chethik, 2000); with older children, it occurs through verbal interactions with the therapist. As underlying conflicts are revealed, the therapist helps the child resolve the conflicts and develop more adaptive ways of coping. Research has found some support for the effectiveness of both long- and short-term approaches to psychodynamic psychotherapy with children and adolescents (Abbass et al., 2013; Midgley & Kennedy, 2011), although further controlled studies are needed.

In Felicia's case, a therapist would help her gain insight into her problems through an intensive process of psychotherapy, perhaps lasting months or even years. The therapist might explore her earliest memories of her relationship with her parents by having her recall positive and negative memories and exploring how she constructs her childhood memories and relationships. The assumption is that once she resolves the underlying problems, such as an insecure attachment to her mother, Felicia's overt symptoms of depression, social withdrawal, school refusal, and physical symptoms will be alleviated (Muratori et al., 2003).

### Behavioral Treatments

Behavioral approaches assume that many abnormal child behaviors are learned. Therefore, the focus of treatment is on re-educating the child, using procedures derived from theories of learning or from research. Such procedures include positive reinforcement, time-out, modeling, and systematic desensitization (Morris & Kratochwill, 2007). Behavioral treatments often focus on changing the child's environment by working with parents and teachers.

In Felicia's case, a therapist might try to decrease her school refusal by instructing her parents to not let her stay at home when she protests and by rewarding her for going to school with praise or a preferred activity. In addition, the therapist might use modeling, role-playing, and reinforced practice to help Felicia learn more effective social skills.

### Cognitive Treatments

Cognitive approaches view abnormal child behavior as the result of deficits and/or distortions in the child's thinking, including perceptual biases, irrational beliefs, and faulty interpretations (Kendall, 2011b). For example, for an attractive girl who gets A grades but thinks she is ugly and is going to fail in school, treatment emphasis is on changing these faulty cognitions. As cognitions change, the child's behaviors and feelings are also expected to change.

In Felicia's case, she may believe that she can't do well in school, that if she goes to school then harm will befall her mother, or that children at school will think she's stupid. Changing these negative views by

challenging them and by helping Felicia develop more rational and more adaptive forms of thinking, should lead to changes in her behavior.

### **Cognitive–Behavioral Treatments**

Cognitive–behavioral approaches view psychological disturbances as the result of both faulty thought patterns, and faulty learning and environmental experiences. These approaches begin with the basic premise that the way children and parents think about their environment determines how they will react to it (Meichenbaum, 1977). Combining elements of both the behavioral model and the cognitive model, the cognitive–behavioral approach grew rapidly as behavior therapists began to focus on the important role of cognition in treatment for both the child and the family (Kendall, 2011a).

Faulty thought patterns that are the targets of change include distortions in both cognitive content (e.g., erroneous beliefs) and cognitive process (e.g., irrational thinking and faulty problem solving). As you will learn, cognitive distortions and biases have been identified in children with a variety of problems, including, for example, depression, conduct disorder, and anxiety disorders.

The major goals of cognitive–behavioral treatment are to identify maladaptive cognitions and replace them with more adaptive ones, to teach the child to use both cognitive and behavioral coping strategies in specific situations, and to help the child learn to regulate his or her own behavior. Treatment may also involve how others respond to the child’s maladaptive behavior. Using a cognitive–behavioral approach, a therapist would help Felicia learn to think more positively and to use more effective social skills and coping strategies.

### **Client-Centered Treatments**

Client-centered approaches view child psychopathology as the result of social or environmental circumstances that are imposed on the child and interfere with his or her basic capacity for personal growth and adaptive functioning. The interference causes the child to experience a loss or impairment in self-esteem and emotional well-being, resulting in even further problems. The therapist relates to the child in an empathic way, providing unconditional, nonjudgmental, and genuine acceptance of the child as an individual, often through the use of play activities with younger children and verbal interaction with older youths (Axline, 1947). The therapist respects the child’s capacity to achieve his or her goals without the therapist’s serving as a major adviser or coach—the therapist respects the child’s self-directing abilities.

In Felicia’s case, being babied by her parents, who view her as slow, may have led to interference with her adaptive functioning and to low self-esteem. In treatment, a therapist would comment on what Felicia is saying and feeling to help her understand her feelings and to increase

the congruence between her feelings and her behavior. In therapy, Felicia would lead the way as the clinician follows.

### **Family Treatments**

Family models challenge the view of psychopathology as residing only within the individual child and, instead, view child psychopathology as determined by variables operating in the larger family system. Like other approaches, the many varieties of family therapy differ widely in their underlying assumptions and approach to treatment. However, nearly all of the approaches view individual child disorders as manifestations of disturbances in family relations (Rivett, 2008).

Treatment involves a therapist (and sometimes a co-therapist) who interacts with the entire family or a select subset of family members, such as the parents and child or the husband and wife. Therapy typically focuses on the family issues underlying problem behaviors. Depending on the approach, the therapist may focus on family interaction, communication, dynamics, contingencies, boundaries, or alliances. It is also essential to adapt family interventions to the cultural context of the family (Kumpfer et al., 2002).

In Felicia’s case, her overall helplessness and physical symptoms may be serving to maintain her role as the baby in the family, or may be serving as the parents’ way of avoiding their own marital difficulties by focusing the problem on Felicia. A therapist would assist Felicia and her family in identifying and changing these and other dysfunctional ways in which family members relate to one another.

### **Neurobiological Treatments**

Medical models view child psychopathology as resulting from neurobiological impairment or dysfunction and rely primarily on pharmacological and other biological approaches to treatment. Examples include the use of stimulant medications for the treatment of ADHD, antipsychotic medications for the treatment of schizophrenia or serious aggressive and destructive behavior, and selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine (Prozac) for the treatment of depression and anxiety, along with practice guidelines for their use (AACAP, 2009a). Although still in a very early stage, there is also a growing interest in developing pharmacological interventions that target basic mechanisms such as gene expression, neurotransmission abnormalities, and other abnormal processes underlying the child’s disorder (Vitiello & Grabb, 2013). Table 4.10 provides a summary of medications and their typical uses with children and adolescents, which you may find helpful when reviewing treatment for specific disorders discussed in other chapters.

Other, much more controversial forms of biological intervention include electroconvulsive therapy (ECT) for severe depression, the administration of large doses

**TABLE 4.10** | Descriptions of Common Medications for Children and Youths<sup>a</sup>

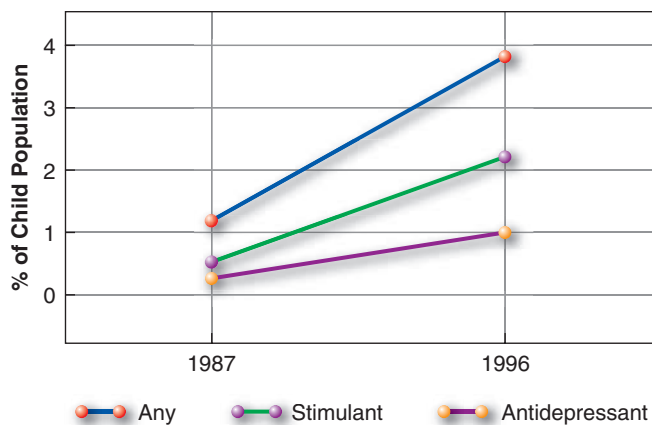
Type of Medication	Treatment Uses	Examples
Stimulant and non-stimulant medications for ADHD	Attention-deficit hyperactivity disorder (ADHD)	<i>Stimulants:</i> Dextroamphetamine ( <i>Dexedrine</i> , <i>Adderall</i> ), Methylphenidate ( <i>Ritalin</i> , <i>Metadate</i> , <i>Concerta</i> , <i>Focalin</i> ) <i>Nonstimulant:</i> Atomoxetine ( <i>Strattera</i> )
Antidepressant medications	Depression, school phobias, panic attacks, and other anxiety disorders, bed-wetting, eating disorders, obsessive–compulsive disorder, post-traumatic stress disorder, and ADHD	<i>Selective serotonin reuptake inhibitors (SSRIs):</i> Fluoxetine ( <i>Prozac</i> ), Sertraline ( <i>Zoloft</i> ), Paroxetine ( <i>Paxil</i> ), Fluvoxamine ( <i>Luvox</i> ), Venlafaxine ( <i>Effexor</i> ), Citalopram ( <i>Celexa</i> ), and Escitalopram ( <i>Lexapro</i> ). <i>Tricyclic antidepressants (TCAs):</i> Amitriptyline ( <i>Elavil</i> ), Clomipramine ( <i>Anafranil</i> ), Imipramine ( <i>Tofranil</i> ), and Nortriptyline ( <i>Pamelor</i> ). <i>Monoamine oxidase inhibitors (MAOIs):</i> Phenelzine ( <i>Nardil</i> ) and Tranylcypromine ( <i>Parnate</i> ).
Antipsychotic medications	Controlling psychotic symptoms (delusions, hallucinations), disorganized thinking, motor tics, and Tourette’s syndrome. They are occasionally used to treat severe anxiety and may help in reducing very aggressive behavior.	<i>First-generation antipsychotics:</i> Chlorpromazine ( <i>Thorazine</i> ), Thioridazine ( <i>Mellaril</i> ), Fluphenazine ( <i>Prolixin</i> ), Trifluoperazine ( <i>Stelazine</i> ), Thiothixene ( <i>Navane</i> ), and Haloperidol ( <i>Haldol</i> ) <i>Second-generation antipsychotics (also known as atypical or novel):</i> Clozapine ( <i>Clozaril</i> ), Risperidone ( <i>Risperdal</i> ), Paliperidone ( <i>Invega</i> ), Quetiapine ( <i>Seroquel</i> ), Olanzapine ( <i>Zyprexa</i> ), Ziprasidone ( <i>Geodon</i> ), Aripiprazole ( <i>Abilify</i> ), Iloperidone ( <i>Fanapt</i> ), Lurasidone ( <i>Latuda</i> ), and Asenapine ( <i>Saphris</i> ).
Mood stabilizers and anticonvulsant medications	Bipolar disorder, severe mood symptoms and mood swings (manic and depressive), aggressive behavior and impulse control disorders.	Lithium (lithium carbonate, <i>Eskalith</i> ), Valproic acid ( <i>Depakote</i> , <i>Depakene</i> ), Carbamazepine ( <i>Tegretol</i> ), Lamotrigine ( <i>Lamictil</i> ), and Oxcarbazepine ( <i>Trileptal</i> )
Anti-anxiety medications	Selective serotonin reuptake inhibitors are used to treat anxiety in children and adolescents and are included above in the section on antidepressants. Other medications (presented here) used to treat anxiety in adults are rarely used with children and adolescents, but may be helpful for brief treatment of severe anxiety.	<i>Benzodiazepines:</i> Alprazolam ( <i>Xanax</i> ), Lorazepam ( <i>Ativan</i> ), Diazepam ( <i>Valium</i> ), and Clonazepam ( <i>Klonopin</i> ) <i>Antihistamines:</i> Diphenhydramine ( <i>Benadryl</i> ), and Hydroxyzine ( <i>Vistaril</i> ) <i>Atypical:</i> Buspirone ( <i>BuSpar</i> ) and Zolpidem ( <i>Ambien</i> ).

<sup>a</sup>These medications are often used in association with other forms of intervention such as psychotherapy, parent training, etc.

Source: Based on Psychiatric medication for children and adolescents Part. II: Types of medications, American Academy of Child & Adolescent Psychiatry, 2004, Updated May 2012.

of vitamins or minerals to children with autism, and the scrupulous elimination of food additives and preservatives from the diets of children with ADHD. In Felicia’s case, a psychiatrist might consider using SSRIs to treat her depressive symptoms. As shown in ● Figure 4.5, the use of psychotropic medications for children’s mental health problems increased significantly from the late 1980s to the mid-1990s, which can be attributed to increasing public acceptance of these medications as part of the treatment of mental health problems among children and youths during that time period (Olfson et al., 2002). Growth in the use of medications for children’s mental health problems has slowed or leveled off

over the past decade, although the percentage of children receiving more than one class of medication has increased (Comer, Olfson, & Mojtabai, 2010). Along with increased use, concerns have been expressed about the frequent use of medications with very young children (Chirdkiatgumchai et al., 2013; Gleason et al., 2007), and their frequent misuse and abuse by adolescents (Zosel et al., 2013). The use of prescription medication also varies in relation to racial/ethnic status. For example, more than 20% of non-Hispanic white adolescents report using prescription medication for depression versus 4% to 9% of Asian, black, and Hispanic youths (Cummings & Druss, 2011).



● **FIGURE 4.5** | Usage of psychiatric medication by children in the United States between 1987 and 1996.

Based on Olfson, M., Marcus, S. C., Weissman, M. M., & Jensen, P. S. (2005). National trends in the use of psychotropic medications by children. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41, 514–521.

### Combined Treatments

*Combined treatments* refer to the use of two or more interventions, each of which can stand on its own as a

treatment strategy (Kazdin, 1996a). In some instances, combinations of stand-alone interventions may consist of different conceptual approaches—using behavioral parent training and pharmacological treatments for children with ADHD, or using cognitive-behavioral treatment and family therapy in combination. In other instances, combined treatments may be derived from the same overall conceptual approach—using social skills training and cognitive restructuring in a group treatment program for adolescents with a social phobia, or using individual behavior management and family behavior therapy in the treatment of children with oppositional disorders.

More communities are now implementing comprehensive mental health programs for children, often delivered through schools to reach the most children and their families and to integrate mental health intervention and education (Walker & Gresham, 2013). In addition, youths who participate in school-based universal social and emotional learning programs have been found to show significantly improved social and emotional skills, attitudes, behavior, and academic performance (Durlak et al., 2011). A Closer Look 4.3 describes an innovative

## A CLOSER LOOK 4.3

### Model Comprehensive Mental Health Program: A Culturally Competent School-Based Mental Health Program

Program	Dallas School-Based Youth and Family Centers
Goal	To establish the first comprehensive, culturally competent, school-based program in mental health care in the 12th-largest school system in the nation. The program overcomes stigma and inadequate access to care for underserved minority populations.
Features	Annually serves the physical and mental health care needs of 3,000 low-income children and their families. The mental health component features partnerships with parents and families, treatment (typically six sessions), and follow-up with teachers. The well-qualified staff, who reflect the racial and ethnic composition of the population they serve (more than 70% Latino and African American), train school nurses, counselors, and principals to identify problems and create solutions tailored to meet each child's needs.
Outcomes	Improvements in attendance, discipline referrals, and teacher evaluation of child performance. Preliminary findings reveal improvement in children's standardized test scores in relation to national and local norms.
Biggest challenge	To sustain financial and organizational support of collaborative partners despite resistance to change or jurisdictional barriers. The school district contributes \$3.5 million to the program, and an additional \$1.5 million comes from Parkland Hospital.
How other organizations can adopt	Recognize the importance of mental health for the school success of all children, regardless of race or ethnicity. Rethink how school systems can more efficiently partner with and use state and federal funds to deliver culturally competent school-based mental health services.
Sites	Dallas and Fort Worth, Texas
Follow-up	This model program continues to provide school-based quality physical and mental health care to children and families. It promotes the wholeness of the family and engages families in their children's health and education, thereby reducing barriers to academic success. The 11th Youth and Family Center was opened in Dallas in 2012.

Sources: President's New Freedom Commission on Mental Health, 2003; [www.dallasisd.org/Page/1427](http://www.dallasisd.org/Page/1427)



school-based program that pays particular attention to the cultural diversity of families in their community.

In Felicia's case, we used a combined treatment approach that included cognitive-behavioral treatment for depression, behavioral treatment for school refusal, and social skills training.

## FELICIA

### Multiple Solutions

Our clinical assessment of Felicia suggested a combined treatment approach to treat three significant problems: school refusal, depression, and social difficulties.

To treat Felicia's school refusal, a behavioral program was implemented that required her to attend class daily. Felicia earned points for her attendance, class participation, and completion of class assignments, which could later be traded in for the opportunity to engage in preferred activities such as going to a movie or for money that could be used to purchase music apps and other things that Felicia had previously selected.

When Felicia refused to go to school, she lost points and was given a brief period of time-out from positive reinforcement. She had to sit in the kitchen by herself and was not permitted to read or watch TV. This behavioral program resulted in consistent school attendance and much-improved academic performance.

To treat Felicia's depressive symptoms, we used a cognitive-behavioral approach. Felicia learned that depression can occur for many reasons—the loss of her grandfather, thinking lots of negative thoughts, and not having any friends. We next taught Felicia how to relax to give her some immediate relief and provide her with a successful experience. Felicia then learned to monitor and rate her mood daily, and to identify thoughts and events that accompanied both her positive and negative moods. Felicia increased her positive thinking by learning to identify, challenge, and change her negative cognitions. After several weeks of treatment, Felicia began to feel less depressed, as reflected in her positive daily mood ratings and reports by her parents.

Both Felicia's teacher and her parents felt that her feelings of depression might be the result of her social interaction difficulties at home and school and that she might become less depressed if these problems could be decreased. Therefore, a social-cognitive skills training program was also implemented to simultaneously address her depressive symptoms and interpersonal difficulties. This program consisted of three parts. In the first part, Felicia was given behavioral social skills training that consisted of instruction, modeling of appropriate and inappropriate social behaviors, role playing and rehearsal, coaching, feedback, and a final role play. This training focused on those social skills, such as making eye contact and speaking clearly, that our initial assessment identified as

## Treatment Effectiveness

A growing emphasis on improving outcomes and reducing the costs of health care in general has led to the development of best practice guidelines for treating children and families with psychological problems.

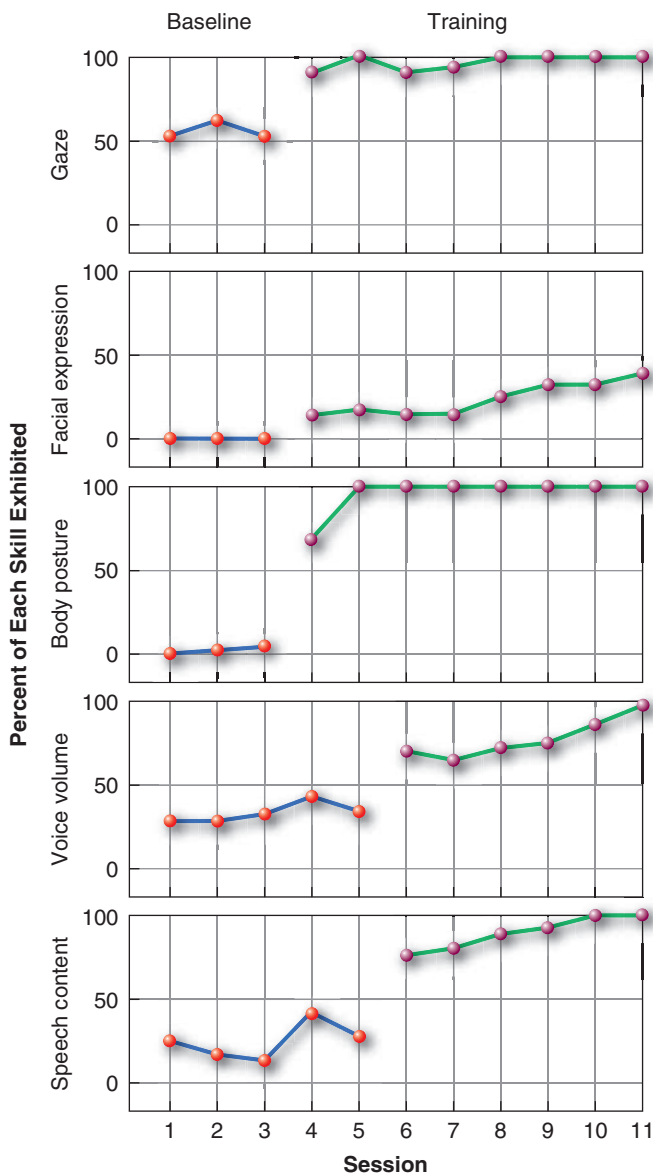
lacking. Training was conducted in the situations that Felicia and her therapist identified as being problematic—for example, the role play we described earlier in which another teen sits at Felicia's table in the school cafeteria.

The second part of the treatment focused on cognitive skills, including general problem-solving skills, self-evaluation, and self-reinforcement. Felicia was taught to use certain cues that would prompt the correct use of her individual social skills in different situations—"What do I want to accomplish?" or "How do I do this now?" She also learned to evaluate the adequacy of her social behavior and whether she had improved on each social skill. To support Felicia's use of these strategies, a third behavioral component was included whereby Felicia could earn points for the accuracy of her judgments and the effectiveness of her social skills during the role plays. The results of the behavioral role-playing social skills intervention for Felicia are shown in ● Figure 4.6.

Following treatment, Felicia began to show increased emotional expressiveness and social responsiveness at home. She smiled more and argued less with her parents. She also began to assert herself more appropriately. Attempts by her teacher to have her speak up in class were met with considerable success. Gradually, she began to engage in more interactions with her peers and to participate in activities. Her mood also began to brighten as she made efforts to initiate conversations and engage in more reciprocal interactions with other children, her teacher, and her parents. At the end of the treatment program Felicia was more interactive and assertive and had learned to be more socially appropriate during interactions. She was less depressed and more animated.

One year following her treatment, Felicia reported no symptoms of depression and few feelings of hopelessness. She was attending school regularly, showed improved academic performance, and was participating in activities and interacting more with other children. In this example, a combined approach of cognitive-behavioral therapy, behavioral social skills training, and cognitive problem-solving training was successful in helping Felicia and her family.

Based on Depression, by D. J. Kolko, 1987. In M. Hersen and V. B. Van Hasselt (Eds.), *Behavior Therapy with Children and Adolescents: A Clinical Approach*, pp. 159–160.



● **FIGURE 4.6** | Results of behavioral role-play intervention.

Based on Depression by D. J. Kolko, 1987. In M. Hersen and V. B. Van Hasselt (Eds.), "Behavior Therapy with Children and Adolescents: A Clinical Approach", pp. 163–164.

**Best practice guidelines** are systematically developed statements to assist practitioners and patients with decisions regarding appropriate treatment(s) for specific clinical conditions. These guidelines are intended to offer recommendations on the most effective and cost-effective treatments for children with particular problems and their families (March et al., 2007).

Two main approaches have been used to develop best practice guidelines. The *scientific approach* derives guidelines from a comprehensive review of

current research findings. This approach emphasizes **evidence-based treatments (EBTs)**, which are clearly specified treatments shown to be effective in controlled research with specific populations (Weisz & Kazdin, 2010). Most EBTs have been evaluated in large-scale clinical trials involving large numbers of children and careful comparisons with other EBTs or other forms of treatment (e.g., medication). The *expert-consensus approach* uses the opinions of experts to fill in the gaps in the scientific literature—for example, when research is inconclusive or when there is a lack of information about multicultural issues. Thus, *evidence-based practice* is not the blind application of research findings, but rather it involves the use of the best available scientific evidence combined with good individual clinical expertise and provides for consumer choice, preference, and culture (Institute of Medicine, 2011; Sackett et al., 2000).

A number of professional organizations whose members provide mental health services to children and their families have developed excellent best practice guidelines, for example, the Society of Clinical Child and Adolescent Psychology ([www.effectivechildtherapy.com](http://www.effectivechildtherapy.com)) and the American Academy of Child and Adolescent Psychiatry ([www.aacap.org](http://www.aacap.org)). In the chapters that follow, we will discuss many of the best practice interventions that are recommended for youths with particular problems.

Consistent with the growing emphasis on improving outcomes, efforts to evaluate treatments for childhood disorders have intensified (Chorpita et al., 2011; Weisz & Kazdin, 2010). These efforts allow us to take a closer look at the overall effectiveness of commonly used treatment methods.

Let's begin with the good news:

- ▶ Changes achieved by children receiving psychotherapy are consistently greater than changes for children not receiving psychotherapy.
- ▶ The average child who is treated is better off at the end of therapy than at least 75% of children who did not receive treatment, particularly with respect to symptom reduction.
- ▶ Treatments have been shown to be effective for children with a wide range of problems, including both internalizing and externalizing disorders.
- ▶ Treatment effects tend to be lasting, with the effects at follow-up (usually around 6 months after treatment) similar to those found immediately after treatment.
- ▶ Effects are about twice as large for problems that are specifically targeted in treatment as they are for changes in nonspecific areas of functioning. This

result suggests that treatments are producing focused changes in targeted areas such as anxiety rather than producing nonspecific or global effects such as changes in how the child feels (Weisz, 1998).

- The more outpatient therapy sessions children receive, the more improvement is seen in their symptoms (Angold et al., 2000).

So what's the bad news? Although research findings present a generally positive picture of psychotherapy with children and of behavioral and cognitive-behavioral approaches in particular, there are a number of important limitations.

First, although research generally shows that most treatments are effective in reducing symptoms such as anxiety, depression, and oppositional behavior, fewer than 20% of treatments demonstrate evidence that they reduce impairment in life functioning (Becker, Chorpita, & Daleiden, 2011). Thus, greater attention to the development and evaluation of interventions that also result in meaningful changes in the child's overall life functioning is needed. Second, we must be aware of the critical difference between research therapy that is carried out in laboratory-based outcome studies and therapy that is carried out in community-based clinics (Wagner, Swenson, & Henggeler, 2000). Most of the evidence-based treatment outcome studies for specific disorders fall into the category of research therapy. However, as compared with research therapy, clinical therapy is typically conducted with more severe cases, directed at a diverse set of problems and children, and carried out in clinic or hospital settings by professional career therapists with large caseloads (Weisz & Weiss, 1993). In general, clinical therapy is less structured and more flexible than research therapy, and it uses relatively more nonbehavioral methods, such as psychodynamic and eclectic approaches. In contrast to the findings for research therapy, similar analyses for studies of clinical therapy have resulted in minimal effects (Andrade, Lambert, & Bickman, 2000; Weisz et al., 2013). These findings suggest that conventional services for children as they are currently carried out may have limited effectiveness. However, few controlled studies exist of child therapy outcomes in settings where it is typically conducted, although this situation is changing. Thus, it is premature to draw any conclusions from the findings from clinic and community studies until more empirical data about therapy in clinical practice are available (Weisz, Jensen-Doss, & Hawley, 2006; Weisz et al., 2013).

In summary, although the efficacy of treatments for many child and adolescent mental health problems

is substantial, testing of the effectiveness and cost-effectiveness of these treatments in real-world settings and dissemination of this information and its use in public settings are key issues that require further attention (Novins et al., 2013).

## NEW DIRECTIONS

*Knowing is not enough; we must apply*

*Willing is not enough; we must do*

—Goethe

Despite the availability of many potentially effective assessment and treatment procedures, as many as 70% to 80% of children and families with significant mental health needs do not receive any specialized assessment or treatment services (Merikangas et al., 2011). Service rates are highest for children with ADHD and other behavior disorders, but fewer than one in five youths receive services for their anxiety, eating, or substance use disorders. This situation is even worse for youths from low-income families, ethnic minority youths, and those in the child welfare and juvenile justice systems. This raises the larger issue of whether current evidence-based practices are, by themselves, a viable way to help these large, unrecognized, and underserved groups of children and to reduce the gap between children's mental health needs and the availability and access to effective services (Kazak et al., 2010).

In response to this issue there has been a general "call to action" from many family, public, professional, and scientific organizations to address these challenges and actively promote the uptake of evidence-based assessment and treatment practices into public health, school, and mental health systems. This has led to an increasing number of opportunities for partnerships among the various stakeholders, along with financial incentives at the state and federal levels to support these efforts. The result has been several exciting new initiatives that focus on:

1. Increasing the recognition of children's mental health needs, not only on the part of laypersons, but also among education, welfare, juvenile justice, and health care professionals (Jensen et al., 2011).
2. Developing a much wider range of child mental health service delivery models based on: (a) the use of new technologies (e.g., Internet, smart phones, video-conferencing assessment and treatment services for rural youths [Duncan, Valasquez,

& Nelson, 2014; Trull & Ebner-Priemer, 2013]); (b) nontraditional service providers (e.g., parents, health counselors); (c) self-help interventions (e.g., self-help books, recordings, Internet); (d) the media (e.g., education entertainment); and (e) special settings where youths in need of mental health services are typically present (e.g., schools, primary care, community-based family wellness centers) (Kazdin & Blase, 2011; Rotheram-Borus, Swendeman, & Becker, 2013; Weist et al., 2014).

3. Broadening the framework and delivery systems for children's mental health assessment and intervention services to include multiple systems and disciplines and their coordination (Chorpita & Daleiden, 2014; Kazak et al., 2010).

The goal of these new initiatives is to translate evidence-based practices into real-world settings so as to significantly reduce the personal, social, and economic costs of children's mental health problems and related conditions, at both the individual and societal levels.

## Section Summary

### Treatment and Prevention

- Interventions for childhood disorders cover a wide range of strategies and settings related to prevention, treatment, and maintenance.

- Treatment goals now include outcomes related to child and family functioning as well as those of societal importance.
- Both ethically and legally, clinicians who work with children are required to think not only about the impact that their actions will have on the children they see, but also on the responsibilities, rights, and relationships that connect children to their parents.
- A tremendous number and diversity of treatments for children and families now exist, including psychodynamic, behavioral, cognitive, cognitive-behavioral, client-centered, family, biological, and combined approaches.
- Best practice guidelines are systematically developed statements derived from research findings and clinical consensus that assist clinicians and families with decisions regarding appropriate treatment(s) for specific childhood problems.
- Reviews of controlled treatment outcome studies have found that the changes achieved by children receiving therapy are consistently greater than changes for children not receiving therapy. However, these differences are not consistently found in studies of treatment outcomes based on clinic samples.
- The goal of new treatment initiatives is to better serve unrecognized and underserved populations of children with mental health problems and to translate evidence-based practices into real-world settings in ways that will significantly reduce the personal, social, and monetary costs associated with these problems.



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# 5

## Intellectual Disability (Intellectual Developmental Disorder)

*Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.*

—Albert Einstein

### CHAPTER PREVIEW

#### INTELLIGENCE AND INTELLECTUAL DISABILITY

- The Eugenics Scare
- Defining and Measuring Children's Intelligence and Adaptive Behavior
- The Controversial IQ

#### FEATURES OF INTELLECTUAL DISABILITIES

- Clinical Description
- Severity Levels
- Prevalence

#### DEVELOPMENTAL COURSE AND ADULT OUTCOMES

- Motivation
- Changes in Abilities
- Language and Social Behavior
- Emotional and Behavioral Problems
- Other Physical and Health Disabilities

#### CAUSES

- Inheritance and the Role of the Environment

- Genetic and Constitutional Factors
- Neurobiological Influences
- Social and Psychological Dimensions

#### PREVENTION, EDUCATION, AND TREATMENT

- Prenatal Education and Screening
- Psychosocial Treatments

UNTIL THE MID-NINETEENTH CENTURY, children and adults who today would be diagnosed as having an intellectual disability were labeled “idiots” and often were lumped together with persons suffering from mental disorders or medical conditions. They typically were ignored or feared, even by the medical profession, because their differences in appearance and ability were so little understood.

Although age-old fears, resentment, and scorn continue to overshadow many important discoveries about subnormal intelligence, the field of intellectual disability has experienced monumental gains over the past century in determining causes and providing services. Advances in understanding the development of children with intellectual disability, along with research in genetics, psychopathology, and other areas, have dramatically changed the face of this field.

The term *intellectual disability* has replaced the previous term *mental retardation* in the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-5), based on consensus among professionals, advocacy groups, and the lay public. Intellectual disability is a neurodevelopmental disorder, a group of conditions with onset in the developmental period that produce impairments of social, personal, academic or occupational functioning (APA, 2013). Intellectual disability (ID) is characterized by significant limitations in mental abilities (such as reasoning, planning, and judgment) that result in impairments in adaptive functioning, such as conceptual, social, and practical skills needed to fulfill aspects of everyday life (Tassé et al., 2012). Although the name has changed, the three essential elements defining this condition have remained the same for the past 50 years: intellectual limitations, deficits in adaptive skills, and early onset.

Importantly, modern definitions of intellectual disability take into account a person’s intellectual functioning within the context of what is typical for that individual’s peers and culture. Cultural and linguistic diversity, as well as differences in communication, sensory, motor, and behavioral factors, must be carefully considered in determining a deficit or disability (American Association on Intellectual and Developmental Disabilities [AAIDD], 2010). Understanding improvements in knowledge about and treatment of intellectual disability, as well as understanding the prejudice and ignorance that had to be overcome, can be gained by looking at how the disorder has been viewed over the years.

## INTELLIGENCE AND INTELLECTUAL DISABILITY

Throughout recorded history, persons with intellectual and other disabilities have suffered scorn and rejection from others, largely because of fear and ignorance.

The prevailing misunderstanding and mistreatment of children with intellectual disabilities changed very little until the end of the eighteenth century, fueled by the discovery of feral children such as Victor, the “wild boy of Aveyron” (discussed in Chapter 1), and by the expansion of humanitarian efforts to assist other oppressed or neglected groups, such as slaves, prisoners, the mentally ill, and persons with physical disabilities.

By the mid-nineteenth century, the concept of mental retardation had spread from France and Switzerland to much of Europe and North America. During the same period, Dr. Samuel G. Howe convinced his contemporaries that training and educating the “feeble-minded” was a public responsibility, and he opened the first humanitarian institution in North America for persons with intellectual disability—the Massachusetts School for Idiotic and Feeble-Minded Youth.

Parents of children with ID can be credited with advancing a perspective and response to the need for long-term care that was completely different from the prevailing public and professional opinions. By the 1940s, parents began to meet in groups and create local diagnostic and guidance centers to increase the availability of humane care. These groups organized in 1950 to form the National Association for Retarded Children (now known as The Arc), which quickly established a scientific board made up of representatives from every specialty possible to study, prevent, and care for persons with intellectual disability (Kanner, 1964). These efforts gained momentum when President John F. Kennedy, who had a sister with intellectual disability, formed the President’s Panel on Mental Retardation in 1962 and called for a national program to combat intellectual disability. Soon thereafter, exposés in the media of the use of solitary confinement and restraints



Ignorance resulted in the segregation of children with intellectual disabilities, who were subjected to inhumane treatment. Today, most children with ID are integrated into regular classrooms.

for persons with ID increased public awareness of and outrage at the treatment of these individuals.

## The Eugenics Scare

### *Three generations of imbeciles are enough.*

—Justice Oliver Wendell Holmes Jr., commenting on the Supreme Court’s 1927 decision to uphold eugenics sterilization laws

Evolutionary degeneracy theory, a pervasive nineteenth-century phenomenon, attributed the intellectual and social problems of children with intellectual disability to regression to an earlier period in human evolution (Bowler, 1989). In fact, mental deficiency experts in the nineteenth century believed they had found the “missing link” between humans and lower species (Gelb, 1995). J. Langdon H. Down, best known for the clinical description of the genetic syndrome that bears his name, interpreted the “strange anomalies” among his medical sample of persons with intellectual disability as an evolutionary throwback to the Mongol race (Down, 1866). Down believed that parents in one racial group might give birth to a child with intellectual disability who was a “retrogression” to another group. While grounded in speculation and misinformed conclusions, evolutionary degeneracy theory and its notion of inferiority received growing support by the late-nineteenth century as an explanation for insanity, mental deficiency, and social deviance. A Closer Look 5.1 depicts how this popular theory was conveniently used to explain undesirable human characteristics.

By 1910, the eugenics movement was gaining momentum. **Eugenics** was first defined by Sir Francis Galton (Charles Darwin’s cousin) in 1883 as “the science which deals with all influences that improve the inborn qualities of a race” (cited in Kanner, 1964, p. 128). Public

and professional emphasis shifted away from the needs of persons with intellectual disability toward a consideration of the needs of society; society was to be protected from the presumable harm done by the presence of these persons in the community.

Consequently, persons with intellectual disability often were blamed for the social ills of the time, which is a powerful example of how labeling a problem can quickly become an explanation for it. A Closer Look 5.2, in fact, shows a 1912 *New York Times* article reflecting this public sentiment. The appearance, ability, and behavior of persons with intellectual disability were considered evidence of their lack of moral fiber, a belief that led to the diagnostic term *moral imbecile*, or *moron*, used to describe and explain their differences. This concept became a straightforward explanation for acts of deviance and justified wide-ranging attempts to identify and control such individuals. Morons, considered the least intellectually impaired (roughly comparable to mild intellectual disability today) were seen as a threat to society because, unlike the insane, they could easily pass for normal (Gelb, 1995). The intellectually impaired and other “undesirables” were seen as a public menace, to be feared and ostracized.

## Defining and Measuring Children’s Intelligence and Adaptive Behavior

Around 1900, the pioneering work of two French educators, Alfred Binet and Theophile Simon, led to some of the first major advancements in the field of children’s intellectual functioning. Binet and Simon were asked to develop a way to identify schoolchildren who might need special help in school. They approached this monumental task by developing the first intelligence tests to measure judgment and reasoning, which they believed were basic

### A CLOSER LOOK 5.1

#### The Infamous Kallikaks

Psychologist Henry Goddard, who began one of the largest training schools for intellectual disability in the early twentieth century, was also a proponent of the popular degeneracy theory and eugenics movement. In his book *The Kallikak Family: A Study in the Heredity of Feeble-Mindedness* (1912), Goddard traced two lines of descendants from a Revolutionary War soldier, Martin Kallikak, who fathered a child by a “feeble-minded barmaid” during the war, which began the first line, and then fathered other children by a “respectable girl” he married after the war. The name “Kallikak” was invented by Goddard from a combination of two Greek words: *kalos*, meaning “attractive, pleasing,” and *kakos*, meaning “bad, evil.”

Goddard reported that many descendants of the first union were feeble-minded, delinquent, poor, and alcoholic, whereas those of the second union were of good reputation. He claimed this outcome was evidence for the inheritance of intelligence, although he overlooked the two families’ obvious environmental differences (Achenbach, 1982). A closer look at the disclaimer from the preface to the book is telling: “It is true that we have made rather dogmatic statements and have drawn conclusions that do not seem scientifically warranted by the data.” (Based on authors’ case material.)



## Early-Twentieth-Century Perspectives on Mental Retardation

### WEAK-MINDED FILL RANKS OF CRIMINALS

DR. HENRY GODDARD SAYS SOCIAL PROBLEMS  
CAN BE SOLVED BY SEGREGATING THEM

### WOULD NOT LET THEM MARRY

THIS POLICY WOULD IN TIME LARGELY  
REDUCE CRIMES, DISEASE, AND DRUNKENNESS,  
HE BELIEVES

From the army of 300,000 feeble-minded persons in the United States come the recruits that swell the ranks of the drunkards, criminals, paupers, and other social outcasts. Twenty-five per cent of the girls and boys in our reformatories are lacking in mental fibre and are unable to discern the difference between right and wrong or are too weak in character to do right whenever there is any inducement to do wrong. Sixty-five per cent of the children have a mother or a father, or both, who are feeble-minded. This country has so far taken no steps to segregate these irresponsible persons, so the number of them is constantly increasing....

This army furnishes the ranks of the criminals, paupers, drunkards, the ne'er-do-wells, and others who are social misfits. Their incapacity would be a priori cause of believing that they eventually will become public charges in one form or another, and investigation, in fact, proves that the groups of criminals, paupers, etc., actually do contain large percentages of people mentally irresponsible.

*Source: The New York Times, March 10, 1912.*

processes of higher thought. These early test questions asked children to manipulate unfamiliar objects such as blocks or figures and to solve puzzles and match familiar parts of objects. The test later became the Stanford–Binet scale, which remains one of the most widely used intelligence tests.

From these beginnings in intellectual testing, **general intellectual functioning** is now defined by an intelligence quotient (IQ or equivalent) that is based on assessment with one or more of the standardized, individually administered intelligence tests, such as the Wechsler Intelligence Scales for Children, 4th edition (WISC-IV), the Stanford–Binet, 5th edition (SB5), and the Kaufman Assessment Battery for Children, 2nd edition (KABC-II). These tests assess various verbal and visual–spatial skills (such as knowledge of the world, reasoning, and similarities and differences) and mathematical concepts, which together are presumed to constitute the general construct known as “intelligence.”

By convention, IQ scores (with a mean of 100 and a standard deviation of 15) are derived from a standardized table based on a person’s age and test score. Because intelligence is defined along a normal distribution, approximately 95% of the population has scores within 2 standard deviations of the mean (i.e., between 70 and 130). Subaverage intellectual functioning is defined, accordingly, as an IQ of about 70 or below (approximately 2 standard deviations below the mean).

As we will discuss later in this chapter, the definition of intellectual disability includes not only subaverage intellectual functioning, but also a subaverage level of adaptive functioning. **Adaptive functioning** refers to how effectively individuals cope with ordinary life demands, and how capable they are of living independently and abiding by community standards (Hodapp et al., 2011). Note that some children and adolescents may learn to adapt quite well to their environment despite their lower intelligence as measured by an IQ test; therefore, they would not be considered to have an intellectual disability. Table 5.1 gives examples of the three major categories of adaptive behavior (conceptual, social, and practical adaptive skills). Similar to IQ, these skills are typically

**TABLE 5.1** Specific Examples of Adaptive Behavior Skills

#### Conceptual Skills

Receptive and expressive language  
Reading and writing  
Money concepts  
Self-directions

#### Social Skills

Interpersonal  
Responsibility  
Self-esteem  
Gullibility (likelihood of being tricked or manipulated)  
Naiveté  
Follows rules  
Obeyes laws  
Avoids victimization

#### Practical Skills

Personal activities of daily living such as eating, dressing, mobility, and toileting  
Instrumental activities of daily living such as preparing meals, taking medication, using the telephone, managing money, using transportation and doing housekeeping activities

#### Occupational Skills

Maintaining a safe environment

*Source: From the American Association on Intellectual and Developmental Disabilities (AAIDD).*

assessed using standardized instruments such as the Adaptive Behavior Assessment System—Second Edition (ABAS-II; Harrison & Oakland, 2003) or the Vineland Adaptive Behavior Scales—Second Edition (VABS-II; Sparrow, Cicchetti, & Balla, 2005).

## The Controversial IQ

If a person's intelligence is relatively stable over time, it would be tempting to conclude that it is largely innate and fixed. On the other hand, if intellectual and cognitive development is significantly shaped by environment, perhaps cognitive growth can be stimulated at an early age and the level of intellectual disability decreased.

Because intelligence is measured in relation to age-mates, IQ generally is stable from childhood through adulthood (Carr, 2005; Whitaker, 2008). One exception to this general rule is IQ that is measured during early infancy, when considerable fluctuation can still occur. For typically developing children, IQ measured prior to the first birthday has virtually no correlation with the IQ score achieved at age 12; however, by the time children are 4 years old, the correlation with IQ 12 years later is high ( $r = 0.77$ ) (Neisser et al., 1996).

The picture is dramatically different, however, for infants and children with developmental delays or intellectual disability. At the lower IQ levels (say, below 50), even the youngest infants show IQ stability over time, with correlations between infant and childhood test scores ranging from 0.50 to 0.97 (Sattler, 2006). Researchers have discovered a similar pattern of IQ stability from middle childhood to young adulthood among children with mild to moderate intellectual delays (Mortensen et al., 2003; Toth & King, 2010).

Even though the IQ of cognitively delayed infants and young children is unlikely to change, proper environmental circumstances will help children reach their fullest potential. Since the early 1960s, researchers in child development and intellectual disability have been investigating ways to provide early stimulation programs that will help children with developmental delays to build on their existing strengths. Despite its strong genetic component, mental ability is always modified by experience. Not surprisingly, infancy through early childhood offer the most significant opportunity for influencing intellectual ability because of the young child's rapid brain development and response to environmental stimulation (Campbell & Ramey, 2010; Pungello et al., 2010).

The importance of genetic makeup notwithstanding, for some individuals IQ can and does change by 10 to 20 points between childhood and adolescence

(Simonoff, Bolton, & Rutter, 1996). Differences in outcome vary widely in relation to opportunities for each child to learn and develop. Children who live in healthy environments, where caregivers provide appropriate levels of stimulation and help them manage ambient levels of stress, are most likely to reach their full potential. Moreover, tests can sample only a limited spectrum of intellectual ability, and are incapable of accounting for each individual's unique learning history (Sattler, 2006).

## Are We Really Getting Smarter?

Scores have risen sharply since the beginning of IQ testing, ranging from a 5- to a 25-point increase in a single generation (Kanaya, Scullin, & Ceci, 2003). When James Flynn brought this phenomenon of rising IQ scores to the attention of scientists in 1987, it became known as the "Flynn effect." The gain has averaged about 3 IQ points per decade, adding up to more than a full standard deviation since the 1940s. Once a test is re-normed (about every 15 to 20 years) the mean is reset to 100, resulting in a brief reversal of this gain in IQ scores.

In attempting to explain the Flynn effect, scientists have considered the rising standards of living, better schooling, better nutrition, medical advances, more stimulating environments, even the influence of computer games and complex toys (Flynn, 2007; 2012). IQ tests themselves have once again come under scrutiny, as have children's exposure to problems similar to those on the tests—like the mazes and puzzles they see on their cereal boxes and fast-food bags. Yet the consistent IQ gains are too large to be the result simply of increased familiarity with testing methods.

Although the exact cause of the effect remains unknown, experts on children's intelligence suspect that the gains reflect a meaningful aspect of intellectual growth and development. A relatively permissive and child-focused parenting style has emerged during recent decades, which may have given children greater facility with language and stronger overall cognitive capacity. Moreover, there are unprecedented cultural differences between successive generations—daily life and occupational experiences are far more complex today than in the past. There is a possible downside to the Flynn effect, however. Test scores drop an average of 5.6 points among persons with borderline and mild intellectual disability after a test is re-normed, which can have a significant impact on a child's eligibility for proper educational placement and other related services (Kanaya et al., 2003).

## Are IQ Tests Biased or Unfair?

Many express concern over the relatively lower mean of the distribution of intelligence test scores of African Americans, typically about 1 standard deviation (about 15 IQ points) below that of whites (Jencks & Phillips, 1998). Although recent estimates suggest that African Americans have gained 4 to 7 IQ points on non-Hispanic whites since 1972 (Dickens & Flynn, 2006), considerable concern remains as to why differences in test results exist at all.

The controversy in IQ score differences is fueled by researchers who argue that IQ is 80% heritable and therefore largely genetically determined (Rushton & Jensen, 2006). Other researchers argue that economic and social inequality—not test bias or racial differences—are the simplest explanations for existing group differences in test performance between African Americans and whites (Brooks-Gunn, Klebanov et al., 2003; Nisbett et al., 2012). For example, when personal and family background characteristics are statistically controlled for, African American and white children achieve similar test scores. However, once these students enter school, the gap between white and African American children grows, which researchers believe may be due to lower-quality schools in the lower-income neighborhoods where some African-Americans live (Levitt & Fryer, 2004; Nisbett, 2009). A much higher proportion of African Americans and children from other ethnic minority groups in the United States as well as in other countries are poor and have fewer opportunities for advancement as compared with their white counterparts. Poverty and inequality are linked to poor nutrition, inadequate prenatal care, fewer intellectual resources, and similar realities that can have negative effects on children's developing intelligence (Christian et al., 2013; Sternberg, 2010).

## Section Summary

### Intelligence and Intellectual Disability

- The early history of intellectual disability was plagued by ignorance and blame.
- By the mid-twentieth century, progress toward understanding intellectual disability moved more rapidly, as parents, researchers, politicians, and the public sought better answers regarding its causes and better ways to assist both children and adults with ID.
- Intellectual disability refers to limitations in both intelligence and adaptive behavior. However, many persons with this disorder are capable of learning and of leading fulfilling lives.
- Despite its drawbacks, the IQ has become a principal standard for diagnosing intellectual disability, combined with other skills and abilities of the child.

## FEATURES OF INTELLECTUAL DISABILITIES

### MATTHEW

#### Gaining at His Own Pace

Matthew was almost 6 years old when he was referred for a psychological assessment. His brief school record described him as “developmentally delayed,” and the school was concerned that his speech and social skills were very limited. He also had temper tantrums at home, and his new first-grade teacher had expressed concerns about his aggressive behavior toward other children in his class.

I first met with Matt in his home. “Show me some of your favorite toys or games,” I suggested, unsure of how comfortable he was with a stranger at his home. He was a thin boy, with curly hair and a cautious, reserved expression. He looked me over for what must have been several minutes while I spoke with his mother and father. Although he said “OK,” I wasn’t sure he meant it—he stayed put and seemed uninterested in my request. Matt had turned 6 a few months ago, but I noticed that his clothes, games, and vocabulary were closer to those of my 3-year-old daughter. “I don’t want to talk about school stuff!” he exclaimed, quite loudly, when I asked about his favorite subjects. “I only like recess and lunchtime—the stuff they won’t let you do till the bell rings!” There was a certain degree of truth, and humor, to his statement, although I don’t think he intended it as such.

Matt became a bit more interested when I brought out some testing materials. He completed with ease a puzzle designed for toddlers and was able to make the sounds of animals in the puzzle. But his emotional expression remained subdued, with little spontaneous laughter or joy. He seemed watchful and cautious. “Tell me about this story,” I said to Matt, holding up a card showing some animals arguing over a ball. “What do you think is going on in this picture, and what are the characters, like the elephant and the zebra, thinking and feeling?” Matt started right in: “He’s mad ‘cuz the zebra grabbed the ball and ran away with it into the woods. That’s all I see.” My attempts to elicit more detail were met with only an inquisitive look.

After a few minutes of this, we took a break and brought out his toys. “Do you like *Harry Potter*?” he asked. We found some common ground among the characters in the book, and under these “ideal” conditions, Matt’s communication became more at ease and spontaneous. He expressed a wide range of emotion throughout the interview, and settled in to his own comfortable level of relating. Gradually, his language production increased as we continued with the more relaxed play sessions.

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In private, Matt's mother told me about his behavior problems around other children, such as hitting, biting, throwing objects, and demanding attention. I saw a brief episode of it myself when his 3-year-old sister came into the room: "Get out! This man is here to play with me!" Overall, Matt behaved like a much younger child—for example, by shouting or pushing when he couldn't get his way immediately. When we met for the second time, in my office, Matt's WISC-IV full-scale IQ was assessed at 64, and his adaptive abilities score was 68, based on his mother's report on the Vineland Adaptive Behavior Scales. Despite his mild intellectual disability, however, Matt has been gaining over the past year in school, and he is showing a healthy gain in his developmental milestones as well. (Based on authors' case material.)

*You judge a person by how they look or how they talk or what the tests show, but you can never really tell what is inside the person.*

—Ed, 27 years old, who was labeled mentally retarded and placed in a state institution at age 15 (Bogdan & Taylor, 1982)

Intellectual disabilities encompass perhaps the widest variation in cognitive and behavioral abilities of any childhood disorder. Some of these children function quite well in school and the community, whereas others with significant physical and cognitive impairments require daily supervision and assistance. The situations of Matthew, age 6, and Vanessa, age 8, illustrate some of the unique challenges children with intellectual disability face every day.

Matthew was diagnosed as having mild intellectual disability. Although his speech and language development were delayed, he was developing effective verbal skills and was capable of attending a regular classroom. Establishing friendships with children at school was sometimes problematic because he was often slow at understanding the rules of games and was teased by some children because of his slowness.

Vanessa was diagnosed as having moderate intellectual disability. She could feed and dress herself with minimum assistance, and she communicated in short sentences, although her speech was not always discernible to people outside her family. Vanessa required daily assistance to complete her routines, but she too was able to attend a local school during part of the day. As these cases show, the special needs of both children were sometimes overshadowed by economic and educational limitations, which required creativity and coordinated assistance on the part of parents, teachers, and other professionals.

## VANESSA

### Gaining at Home

Vanessa is an 8-year-old girl with moderate intellectual disability (IQ = 52) and limited communication skills. She was diagnosed prior to her fourth birthday, after medical and psychological examinations were undertaken to determine why she was not making many speech sounds or learning basic self-help skills. Vanessa's mother told us about how her daughter's special needs were poorly met while she was a resident in a special school for children with intellectual disabilities, and how this led to her parents' decision to raise Vanessa at home with the help of their community:

When our family moved here we were told that we would receive \$75 per month to care for her at home, or she could live at the Children's Training Center. Vanessa had been diagnosed with moderate intellectual disability prior to her fourth birthday, and we knew that we could not care for her daily needs at home with the limited assistance being offered. So we made the difficult decision to place her at the training center. But, even though Vanessa came home every weekend, we felt there was something missing from her life; something beyond staff care and attention was needed to foster her growth.

About 2 years later, things changed dramatically. Vanessa was injured by another resident, and we decided that she should return home once and for all. We made every effort to find services she needed for her training and education in our own community. She now attends an integrated classroom at the same school as her older brother, and her teachers have noticed strong gains in her behavior and language. She participates in recreational programs, and has become an accomplished swimmer and basketball player. (Based on authors' case material.)

### Clinical Description

*When the psychiatrist interviewed me he had my records in front of him—so he already knew I was mentally retarded. It's the same with everyone. If you are considered mentally retarded there is no way you can win. There is no way they give you a favorable report.*

—Ed, describing part of his intake interview at the state institution (Bogdan & Taylor, 1982)

Children with intellectual disability show a considerable range of abilities and interpersonal qualities. With proper assistance, children with mild intellectual impairments, such as Matthew, can carry out their daily routines much like other children. They can attend a



regular classroom, adjust to the demands of physical and intellectual challenges, and develop meaningful and lasting relationships with peers and adults. Many show normal physical development and can learn the physical coordination required to ride a bike. Others, like Vanessa, who have more severe impairments, will require greater daily supervision and care throughout their childhood and sometimes into early adulthood, at which time they may have developed the necessary skills to live more independently.

Both Matthew and Vanessa, however, experience limitations that involve most areas of daily living. Their most obvious difficulties are learning to communicate effectively, due to their limited speech and language skills. Although Matthew eventually learned effective verbal communication, for several years Vanessa had to rely on sign language and nonverbal expressions or gestures to express her needs. Both children had problems developing friendships with other children because of their limited ability to comprehend what other children were expressing, especially during games and social activities that require stamina and formal rules. Many cognitive abilities, such as language and problem solving, are affected; therefore, most children with ID have difficulty with some aspect of learning. The degree of difficulty depends on the extent of cognitive impairment, which is the primary reason current definitions of intellectual disability emphasize this aspect.

Table 5.2 summarizes the DSM-5 diagnostic criteria for intellectual disability (also known as intellectual developmental disorder). These criteria consist of three core features that describe this disorder in both children and adults. First, such individuals must have deficits in the intellectual functions of reasoning, problem-solving, planning, abstract thinking, judgment, academic learning, and learning from experience. Such deficits are typically determined by clinical assessment and intelligence testing. But note that the DSM-5 does not provide specific IQ cutoff limits for meeting diagnostic criteria, as was the case in previous editions.

The second criterion for diagnosing intellectual disability requires deficits in adaptive functioning, which result in failure to meet developmental and sociocultural standards for personal independence and social responsibility. In effect, a subnormal IQ score is not sufficient to warrant a diagnosis of intellectual disability. A person also must show significant limitations in adaptive behavior, such as communication, self-care, social/interpersonal skills, or functional academic or work skills (Lancioni et al., 2009). This aspect of the definition is important because it specifically excludes persons who may function well in their own surroundings, yet for various reasons they may not perform well on standard IQ tests. Importantly,

**TABLE 5.2** Diagnostic Criteria for Intellectual Disability (Intellectual Developmental Disorder)

Intellectual disability (intellectual developmental disorder) is a disorder with onset during the developmental period that includes both intellectual and adaptive functioning deficits in conceptual, social, and practical domains. The following three criteria must be met:	DSM-5
(A) Deficits in intellectual functions, such as reasoning, problem-solving, planning, abstract thinking, judgment, academic learning and learning from experience, confirmed by both clinical assessment and individualized, standardized intelligence testing.	
(B) Deficits in adaptive functioning that result in failure to meet developmental and sociocultural standards for personal independence and social responsibility. Without ongoing support, the adaptive deficits limit functioning in one or more activities of daily life, such as communication, social participation, and independent living, across multiple environments, such as home, school, work, and community.	
(C) Onset of intellectual and adaptive deficits during the developmental period.	
<p><i>Note:</i> The diagnostic term <i>intellectual disability</i> is the equivalent term for the ICD-11 diagnosis of <i>intellectual developmental disorders</i>.</p> <p><i>Specify current severity</i> (see Table 5.3): Mild, Moderate, Severe, or Profound</p>	

Source: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, American Psychiatric Association.

whether a child or adolescent exhibits these various adaptive skills is related not only to ability, but also to experience and opportunity. Using public transportation, walking to a neighborhood store, and making simple purchases all can be affected by the individual's place of residence (urban versus rural, for example), or their concerns about neighborhood safety. Clinicians and educators must make educated guesses regarding a person's potential for performing a certain task if the person has not had experience with a particular skill on the test.

The third and final criterion for intellectual disability stipulates that the child's intellectual and adaptive deficits must have begun during the developmental period (generally considered to be before age 18). The purpose of establishing this upper limit for the age of onset is twofold. First, it acknowledges that intellectual disability is a developmental disorder that is evident during childhood and adolescence. Problems in learning and comprehension typically occur during this time of rapid brain development. Second, this age criterion rules out persons who may show mental deficiencies caused by adult-onset degenerative diseases, such as Alzheimer's disease, or by head trauma.

A diagnosis of intellectual disability specifies the level of impairment—mild, moderate, severe, or profound—similar to other disorders in the DSM-5. Although these four levels of impairment remain the same as in previous editions, they are specified in considerably more detail, as described below. Similarly, as mentioned above, the DSM-5 does not provide specific IQ cutoffs for meeting diagnostic criteria, to allow greater focus on adaptive functioning and levels of support that may be required. However, individuals with ID generally have an IQ score 2 standard deviations or more below the population mean (e.g., 70 points or below, allowing for a margin of error of 5 points).

Changes in DSM-5 criteria for ID have sought to focus more on the nature or qualities of the person rather than on the IQ score, based on years of controversy over IQ measurement and social influences (Toth & King, 2010). These criteria are not likely to result in a major shift in the numbers of people diagnosed with ID—as before, the majority of people diagnosed with intellectual disability fall into the mild range. However, because the ramifications of diagnosing someone with intellectual disability can be serious, every attempt is made to consider other factors that may limit one’s mental abilities. As Ed described so well, a careful bal-

ance must be struck between identifying the special needs of persons with intellectual disabilities and labeling them as having a disability on the basis of somewhat arbitrary criteria (Schalock et al., 2007).

In addition, the definition and identification of intellectual disability depend somewhat on our social institutions. When children enter the school system, it is a significant point at which their abilities are compared and deficiencies are most likely to be detected. If children are placed in a poorly matched learning environment, their developmental progress can be disrupted. Following their school years, persons with mild intellectual disability often blend into the larger population, and their “diagnosis” no longer has as much meaning (Hodapp et al., 2011).

### Severity Levels

The four levels of severity noted in Table 5.3 are defined on the basis of adaptive functioning in three primary domains: conceptual, social, and practical. These definitions reflect a major shift in focus away from IQ scores and more toward needed supports. This shift emphasizes the resources and strategies necessary to promote the overall adjustment and well-being of a person with intellectual disability. Specific needs of

**TABLE 5.3** | Severity levels for Intellectual Disability (Intellectual Developmental Disorder)

Severity Level	Conceptual Domain	Social Domain	Practical Domains
Mild	<ul style="list-style-type: none"> <li>For preschool children: no obvious conceptual differences.</li> <li>For school-aged children and adults: learning difficulties in academic skills involving reading, writing, arithmetic, time, or money, the support needed in one or more areas to meet age-related expectations.</li> <li>In adults: impaired abstract thinking, executive function, short-term memory, and functional use of academic skills. There is a somewhat concrete approach to problems and solutions as compared with age-mates.</li> </ul>	<p>Children:</p> <ul style="list-style-type: none"> <li>Show immaturity in social interactions.</li> <li>Have difficulty in perceiving peers’ social cues.</li> <li>Show immature or more concrete communication, conversation, and language for age.</li> <li>Show difficulty regulating age-inappropriate emotion and behavior; may be noticed by peers.</li> <li>Have limited understanding of risk in social situations.</li> <li>Display immature social judgment for age.</li> <li>Are at risk of being manipulated by others (gullibility).</li> </ul>	<p>Children:</p> <ul style="list-style-type: none"> <li>May function age-appropriately and maintain personal care.</li> <li>May need some support with complex daily living tasks as compared with peers.</li> </ul> <p>Adults:</p> <ul style="list-style-type: none"> <li>Typically need support with shopping, transportation, home and child care, organizing, cooking, and money management.</li> <li>Participate in recreational skills similar to age-mates, but need support with well-being and organization.</li> <li>May hold jobs that do not emphasize conceptual skills.</li> <li>Need support with health care and legal decisions and with learning a vocation.</li> <li>Often need support raising a family.</li> </ul>

(continues)

**TABLE 5.3 | Severity levels for Intellectual Disability (Intellectual Developmental Disorder) (continued)**

Severity Level	Conceptual Domain	Social Domain	Practical Domains
<b>Moderate</b>	<p>Conceptual skills lag markedly behind those of peers.</p> <ul style="list-style-type: none"> <li>For preschoolers, language and pre-academic skills develop slowly.</li> <li>For school-aged children, academic skill develops slowly and are limited as compared with those of peers.</li> <li>For adults, academic skill development is typically at an elementary level, and support is required for all use of academic skills and work and personal life.</li> <li>Adults need daily assistance with conceptual tasks of day-to-day life.</li> </ul>	<p>Individual:</p> <ul style="list-style-type: none"> <li>Shows marked differences from peers in social and communicative behavior across development.</li> <li>Uses less complex spoken language as primary tool for social communication.</li> <li>Shows capacity for relationships in life-long ties to family and friends.</li> <li>May inaccurately perceive or interpret social cues.</li> <li>Shows limited social judgment and decision-making abilities.</li> <li>Needs caretakers to assist with life decisions.</li> <li>Has friendships with typically developing peers that are often affected by communication or social limitations.</li> <li>Needs social and communicative support in work settings.</li> </ul>	<p>Adults:</p> <ul style="list-style-type: none"> <li>Eat, dress, eliminate, and practice hygiene age-appropriately after extended teaching, time practicing, and reminders.</li> <li>Participate in all typical household tasks after extended period of teaching and ongoing.</li> <li>May achieve independent employment in jobs that require limited conceptual communication skills, but need considerable support from co-workers/supervisors.</li> <li>Develop a variety of recreational skills, but will need additional, extended supports and learning opportunities.</li> <li>Maladaptive behaviors present in a significant minority and cause social problems.</li> </ul>
<b>Severe</b>	<p>Individual:</p> <ul style="list-style-type: none"> <li>Attains few conceptual skills.</li> <li>Has little understanding of written language or of concepts involving numbers.</li> <li>Needs caretakers to provide problem-solving support throughout life.</li> </ul>	<p>Individual:</p> <ul style="list-style-type: none"> <li>Exhibits limited spoken language in terms of vocabulary and grammar.</li> <li>Speaks using single words or phrases and may be supplemented through augmentative means.</li> <li>Exhibits speech and communication focused on the present.</li> <li>Uses language for social communication more than for explication.</li> <li>Understands simple speech and gestural communication.</li> <li>Has relationships with family members and familiar others for pleasure and help.</li> </ul>	<p>Individual:</p> <ul style="list-style-type: none"> <li>Needs support for daily living (e.g., eating, dressing, bathing, elimination).</li> <li>Needs supervision at all times.</li> <li>Unable to make responsible decisions regarding well-being of self or others.</li> <li>Needs long-term teaching and ongoing support in all domains to acquire skills.</li> <li>Maladaptive behavior, including self-injury, is present in a significant minority.</li> </ul>
<b>Profound</b>	<p>Conceptual skills generally involve the physical world rather than symbolic processes.</p> <p>Individual:</p> <ul style="list-style-type: none"> <li>May use objects in goal-directed fashion for self-care, work, and recreation.</li> <li>Uses visuospatial skills, such as matching and sorting based on physical characteristics. However, co-occurring motor and sensory impairments may prevent functional use of objects.</li> </ul>	<p>Individual:</p> <ul style="list-style-type: none"> <li>Has very limited understanding of symbolic communication in speech or gestures.</li> <li>May understand some simple instructions or gestures.</li> <li>Nonverbally, nonsymbolically expresses most desires and emotions.</li> <li>Enjoys relationships with well-known family members, caretakers, and familiar others.</li> <li>Initiates a response to social interactions through gestural and emotional cues.</li> <li>May have co-occurring sensory and physical impairments, which may prevent many social activities.</li> </ul>	<p>Individual:</p> <ul style="list-style-type: none"> <li>Is dependent on others for all aspects of daily physical care, health, and safety, but may participate in some of these activities.</li> <li>Without severe physical impairments may assist with some daily work tasks at home.</li> <li>May perform simple actions with objects, with extended support, related to vocational activities.</li> <li>Enjoys recreational activities with the support of others.</li> <li>May have physical and sensory impairments that prevent participation (beyond watching) in home, recreational, and vocational activities.</li> <li>May exhibit maladaptive behaviors (only a significant minority.)</li> </ul>

Source: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, American Psychiatric Association.

the individual are evaluated and strategies and services are developed to optimize individual functioning. Concrete examples of support areas and support activities are shown in Table 5.4.

Children with intellectual disability vary widely in their degree of disability. Some show cognitive impairments from early infancy, such as limited vocalizations or poor self-regulation, whereas other impairments may go relatively unnoticed throughout the elementary school years. Because of the wide variation in cognitive functioning and impairment, classification systems for intellectual disability have always attempted to delineate various degrees of cognitive impairment. The DSM-5 has continued the tradition by specifying disability as mild, moderate, severe, or profound; however, these designations are based primarily on ability and needed supports rather than on IQ scores, as in the past.

Children and adolescents with **mild intellectual disability** constitute the largest group; it is estimated that as many as 85% of people with ID have the mild form of the disorder (King et al., 2009). Children with mild intellectual disability often show small delays in development during the preschool years, but typically are not identified until academic or behavior problems emerge during the early elementary years. This category also has an overrepresentation of minority group members, most likely due to the social and economic disparities noted previously.

As a group, children with mild intellectual disability typically develop social and communication skills during the preschool years (ages 0–5 years), perhaps with modest delays in expressive language. They usually have minimal or no sensorimotor impairment and engage with peers readily (although peers may see them as immature). Like Matthew, some children with mild ID may find school and peer relationships to be challenging. By their late teens, these children can acquire academic skills up to approximately the sixth-grade level. During their adult years, they usually achieve social and vocational skills adequate for minimum self-support, but may need supervision, guidance, and assistance, especially when under unusual social or economic stress. With appropriate supports, individuals with mild intellectual disability usually live successfully in the community, either independently or in supervised settings.

Persons with **moderate intellectual disability** constitute about 10% of individuals with ID. Children and adolescents at this level of impairment are more intellectually and adaptively impaired than someone with mild intellectual disability, and usually they are identified during the preschool years, when they show delays in reaching early developmental milestones. By

**TABLE 5.4** | Examples of Support Areas and Support Activities

<p>Teaching and Education Activities:</p> <ul style="list-style-type: none"> <li>• Interacting with trainers and teachers and fellow trainees and students</li> <li>• Learning and using problem-solving strategies</li> <li>• Using technology for learning</li> <li>• Learning and using functional academics (reading signs, counting change, etc.)</li> </ul>
<p>Home Living Activities:</p> <ul style="list-style-type: none"> <li>• Preparing and eating food</li> <li>• Housekeeping and cleaning</li> <li>• Dressing</li> <li>• Bathing and taking care of personal hygiene and grooming needs</li> </ul>
<p>Community Living Activities:</p> <ul style="list-style-type: none"> <li>• Using transportation</li> <li>• Participating in recreation and leisure activities</li> <li>• Visiting friends and family</li> <li>• Shopping and purchasing goods</li> </ul>
<p>Employment Activities:</p> <ul style="list-style-type: none"> <li>• Learning and using specific job skills</li> <li>• Interacting with co-workers</li> <li>• Completing work-related tasks with speed and quality</li> <li>• Accessing and obtaining crisis intervention and assistance</li> </ul>
<p>Health and Safety Activities:</p> <ul style="list-style-type: none"> <li>• Accessing and obtaining therapy services</li> <li>• Avoiding health and safety hazards</li> <li>• Accessing emergency services</li> <li>• Maintaining mental health/emotional well-being</li> </ul>
<p>Behavioral Activities:</p> <ul style="list-style-type: none"> <li>• Learning and making appropriate decisions</li> <li>• Incorporating personal preferences into daily activities</li> <li>• Maintaining socially appropriate behavior in public</li> <li>• Controlling anger and aggression</li> </ul>
<p>Social Activities:</p> <ul style="list-style-type: none"> <li>• Participating in recreation and leisure activities</li> <li>• Making appropriate sexual decisions</li> <li>• Making and keeping friends</li> <li>• Engaging in loving and intimate relationships</li> </ul>
<p>Protection and Advocacy Activities:</p> <ul style="list-style-type: none"> <li>• Managing money and personal finances</li> <li>• Protecting self from exploitation</li> <li>• Exercising legal rights and responsibilities</li> <li>• Using banks and cashing checks</li> </ul>

Source: Frequently Asked Questions on Intellectual Disability and the AAIDD Definition, by American Association on Intellectual and Developmental Disabilities (AAIDD), 2010.



the time they enter school, these children may communicate through a combination of single words and gestures, and show self-care and motor skills similar to an average 2- to 3-year-old. Many persons with Down syndrome function at the moderate level of impairment. Because their social judgment and decision-making abilities are limited, children and youth with moderate ID often require supportive services to function on a daily basis.

Like Vanessa, most individuals with this level of intellectual disability acquire limited communication skills during their early years, and by age 12 they may be using practical communication skills. They benefit from vocational training and, with moderate supervision, can attend to their personal care. They also can benefit from training in social and occupational skills, but they are unlikely to progress beyond the second-grade level in academic subjects. Adolescents with moderate intellectual disability often have difficulty recognizing social conventions, such as appropriate dress or humor, which interferes with peer relationships. By adulthood, persons with moderate intellectual disability typically adapt well to living in the community and can perform unskilled or semiskilled work under supervision in sheltered workshops (specialized manufacturing facilities that train and supervise persons with intellectual disability) or in the general workforce.

Those with **severe intellectual disability** constitute approximately 4% of persons with ID. Most of these individuals suffer one or more organic causes of impairment, such as genetic defects, and are identified at a very young age because they have substantial delays in development and visible physical features or anomalies. Milestones such as standing, walking, and toilet training may be markedly delayed, and basic self-care skills are usually acquired by about age 9. In addition to intellectual impairment, they may have problems with physical mobility or other health-related problems, such as respiratory, heart, or physical complications.

Most persons functioning at the severe level of intellectual disability require some special assistance throughout their lives. During early childhood they acquire little or no communicative speech; by age 12, they may use some two- to three-word phrases. Between 13 and 15 years of age, their academic and adaptive abilities are similar to those of an average 4- to 6-year-old. They profit to a limited extent from instruction in pre-academic subjects, such as familiarity with the alphabet and simple counting, and can master skills such as sight reading “survival” words such as “hot,” “danger,” and “stop.” During their adult years, they may be able to perform simple tasks in closely supervised settings. Most adapt well to life in the

community, in group homes or with their families, unless they have an associated disability that requires specialized nursing or other care (Toth & King, 2010).

Persons with **profound intellectual disability** constitute approximately 2% of those with ID. Such individuals typically are identified in infancy because of marked delays in development and biological anomalies such as asymmetrical facial features. During early childhood they show considerable impairments in sensorimotor functioning; by the age of 4 years, for example, their responsiveness is similar to that of a typical 1-year-old. They are able to learn only the rudiments of communication skills, and they require intensive training to learn basic eating, grooming, toileting, and dressing behaviors.

Persons with profound intellectual disability require lifelong care and assistance. Almost all of these individuals show organic causes for their ID, and many have severe co-occurring medical conditions, such as congenital heart defect or epilepsy, that sometimes lead to death during childhood or early adulthood. Most of these individuals live in supervised group homes or small, specialized facilities. Optimal development may occur in a highly structured environment with constant aid and supervision and an individualized relationship with a caregiver. Motor development, as well as self-care and communication skills, may improve if appropriate training is provided. For example, persons with profound intellectual disability usually can perform simple tasks, such as washing their hands and changing their clothes, provided they have close supervision.

The DSM-5 criteria for ID focuses on needed supports, which reflects the consensus that determining the level of functioning of an individual with intellectual disability should be based on the interaction between the person and the environment (AAIDD, 2010). The criteria also remove specific IQ cutoff scores or ranges, which acknowledges that IQ scores are approximations of a person’s mental abilities that require additional knowledge of their actual abilities. With a DSM-5 diagnosis of intellectual disability (*moderate severity*), Vanessa would likely also receive the following descriptive diagnosis: “Vanessa is a child with intellectual disability who needs limited supports in home living, academic skills, and development of self-help skills.” Matthew’s diagnosis of intellectual disability (*mild severity*) might also clarify: “Matt is a child with intellectual disability who requires support on an as-needed basis, especially during stressful or demanding times—for example, during the transition to school, when making new friends, and when faced with new academic challenges.”

## Prevalence

Based on available evidence and estimates, the total number of children and adults with intellectual disability is approximately 1% of the general population (Maulik et al., 2011). However, each person applies his or her own cognitive abilities in unique ways that may be more or less adaptive in her or his own environment. Thus, prevalence estimates vary across time and across countries as a result of IQ measurement problems, different definitions of ID, and varying study designs (Witwer, Lawton, & Aman, in press).

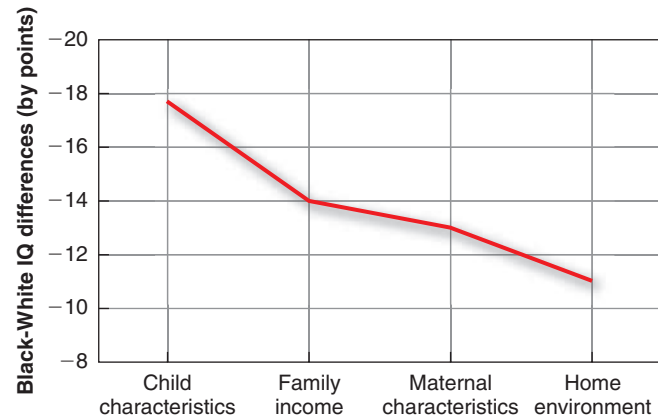
## Sex Ratio

Among children with mild intellectual disability (by far the most common diagnosis), males outnumber females at a ratio of 1.6:1. Males outnumber females among the other levels of severity as well, but these ratios are inconsistent across studies and tend to be small. Similar to racial differences in the diagnosis of intellectual disability, gender differences in ID may be an artifact of identification and referral patterns rather than true differences in prevalence (Einfeld et al., 2010). If a true male excess of intellectual disability does exist, researchers suspect this may be due to the occurrence of X-linked genetic disorders such as fragile-X syndrome (discussed later in the chapter), which affect males more often than females (Handen, 2007).

## Socioeconomic and Cultural Influences

It is a well-established finding that intellectual disability is more prevalent among children of lower socioeconomic status (SES) and children from minority groups (Witwer et al., in press). This link is found primarily among children in the mild intellectual disability range; children with more severe levels are identified almost equally in different racial and economic groups. Whether or not signs of organic etiology are present, diagnoses of mild intellectual disability increase sharply from near zero among children from higher SES categories to about 2.5% in the lowest SES category (APA, 2000). These figures indicate that SES factors play a suspected role both in the cause of intellectual disability and in the identification and labeling of persons with intellectual disability (Maulik et al., 2011).

The overrepresentation of minority and low-SES children in the group with mild intellectual disability is a complicated and unresolved issue. As we noted, average IQ levels for the African American population are lower than IQ levels found in the white population, resulting in more African American children among samples of children with mild intellectual disability. What specific environmental circumstances might create such an imbalance in IQ findings? To answer this



● **FIGURE 5.1** | Factors accounting for differences in IQ scores between white and African American children at 5 years of age.

Based on data from Brooks-Gunn, J., Klebanov, P. K., Smith, J., Duncan, G. J., & Lee, K. (2003). The Black-White test score gap in young children: Contributions of test and family characteristics. *Applied Developmental Science*, 7(4), pp. 239–252

question, Brooks-Gunn et al. (2003) tested the theory that the differences can be partially explained based on social and economic disadvantage. They accounted for initial IQ differences of over 17 points in African American versus white children by the independent effects of economic deprivation, home environment, and maternal characteristics. As shown in ● Figure 5.1, initial IQ differences were almost 18 points between a sample of African American and white children at 5 years of age, controlling for gender and birth weight. However, these differences were reduced by about 71% after adjusting for differences in poverty and home environment. Similar gains in IQ performance are found when children are adopted from working-class into middle-class homes, reinforcing the significant role of the environment in shaping one's intellectual and adaptive abilities (Nisbett et al., 2012). These data remind us that the likelihood of a diagnosis of intellectual disability is shaped and influenced by social and cultural forces such as racial discrimination, poverty, and cultural insensitivity (Emerson, 2012).

## Section Summary

### Features of Intellectual Disabilities

- The DSM-5 criteria for intellectual disability consist of deficits in intellectual functioning (confirmed by IQ testing and clinical assessment), deficits in adaptive functioning, and onset of intellectual and adaptive deficits during the developmental period.
- Children with intellectual disability vary widely in their degree of disability and level of functioning.

- IQ scores are no longer used to determine level of impairment. Rather, DSM-5 describes four levels of severity—mild, moderate, severe, or profound—based on adaptive functioning that determines a person’s level of needed supports.
- Intellectual disability occurs in an estimated 1% of the population, more often among males than females.
- Intellectual disability occurs more often among children from lower socioeconomic and minority groups. Economic disadvantage and discrimination practices often account for these findings.

## DEVELOPMENTAL COURSE AND ADULT OUTCOMES

To appreciate the manner in and extent to which children with intellectual disabilities achieve various developmental milestones, consider how typically developing children express themselves. An infant exploring his or her world relies on primitive sensorimotor functions—touching, tasting, and manipulating objects—to learn about the environment. At this stage of development everything is new, and the brain is establishing literally millions of new connections each day.

Then, between 18 and 24 months of age, the toddler begins to acquire language and to draw on memories of past experience to aid in understanding the present. For an intellectually normal child, it is during this stage that the child’s environmental conditions and opportunities are known to play a crucial role in fostering enthusiasm for learning and in establishing the roots of intellectual sophistication. Although the majority of children with ID progress through each developmental milestone in roughly the same manner as other children, important differences in their developmental accomplishments are evident.

Much of the knowledge about other issues involved in the developmental course and adult outcomes for children with intellectual disability is derived from studies of children with Down syndrome. Chromosome abnormalities are the single most common cause of moderate to severe intellectual disability. **Down syndrome** is the most common disorder resulting from these abnormalities. Children with Down syndrome, along with their parents, have frequently participated in studies comparing their development with that of their normally developing peers.

Dan, a 15-year-old with Down syndrome, describes how his early development was similar to, but much slower than, that of his younger brother.

Dan, with moderate intellectual disability, is describing how his younger brother Brian, with normal

### DAN

#### With His Brother’s Help

When I was almost 3 and my sister was 5, we had a baby brother. I helped feed him and take care of him until he was almost 3. I was 5 by then, and could do most of the things he could do, but about that time he caught up to me. I could still do some things he couldn’t, but not many. He could do some things I had trouble with. We became good friends. Every time he learned a new skill, I would either learn it with him, or he would teach me later. I was really little for my age, so we were pretty close in size. We shared a bunk bed, toys, and clothes. We learned to do a lot of things together. When he learned to ride a bike, and I wasn’t ready to learn yet, mom and dad got me a Powerwheel motorized bike so I could ride, too. When he learned to read, he taught me how, too. When he played baseball and football, he took me with him.

In those days, I still went to school in another district, so most of my friends were his friends. Now that we go to the same school it is sometimes hard for him to remember that I have my own friends, too. I have to tell him I am the big brother. He sometimes gets teased at school because he is my brother, but he is learning to explain instead of fight. Mostly, the kids are all nice to us. (Based on authors’ case material.)

intelligence, caught up with him by the time Brian was 2 years old, and progressed through developmental milestones at a faster pace. Does Dan’s development follow the same organized sequence as Brian’s? Will his development show specific deficits in certain intellectual abilities such as language? Or will he eventually catch up? This case illustrates the developmental-versus-difference controversy (Weiss, Weisz, & Bromfield, 1986), an issue that has intrigued those in the field of child development and intellectual disability for some time. Simply stated, the **developmental-versus-difference controversy** is this: Do all children—regardless of intellectual impairments—progress through the same developmental milestones in a similar sequence, but at different rates? Or do children with intellectual disability develop in a different, less sequential, and less organized fashion?

The developmental position, which applies primarily to individuals not suffering from organic impairment, consists of two primary hypotheses: First, the *similar sequence hypothesis* argues that all children, with or without intellectual disability, pass through stages of cognitive development in an identical (invariant) order; they differ only in their rate and



upper limit of development (Bennett-Gates & Zigler, 1998). Second, the *similar structure hypothesis* suggests that children with intellectual disability demonstrate the same behaviors and underlying processes as typically developing children at the same level of cognitive functioning (such as Dan and his younger brother were at ages 5 and 2). That is, if children with intellectual disability are matched to typically developing children by their mental age, then the children with intellectual disability will show equivalent performance on cognitive tasks, such as problem solving, spelling, and moral reasoning. The developmental position rejects the notion of a specific deficit or difference among children with intellectual disability and instead emphasizes how these children traverse the stages more slowly and attain a lower developmental ceiling than typically developing children (Bennett-Gates & Zigler, 1998).

In contrast, the **difference viewpoint** argues that cognitive development of children with intellectual disability differs from that of children without intellectual disability in more than developmental rate and upper limit. According to this position, even when his mental age is matched to his younger brother's, Dan will show qualitatively different reasoning and problem-solving strategies, and he may never be able to accomplish some tasks beyond a certain level.

Evidence supports the developmental hypothesis for children with familial, not organic, types of intellectual disability, but this issue has not yet been resolved. Children with familial intellectual disability generally follow developmental stages in an invariant order, the same as children with normal intellectual abilities, with the possible exception of some children with co-occurring brain abnormalities or autism (Bennett-Gates & Zigler, 1998). The similar structure hypothesis has also been supported for children with familial intellectual disability, with some exceptions. Children with familial intellectual disability show slight deficits in memory and information processing as compared with mental-age-matched children without intellectual disability (Schuchardt, Gebhardt, & Mäehler, 2010), which may be due to the children's difficulty in staying motivated to perform repetitive, boring tasks (Weisz, 1999).

The picture for children with organically based intellectual disability (such as Dan, who has Down syndrome) is more straightforward. They often have one or more specific deficit areas that cause them to perform more poorly than mental-age-matched children without intellectual disability. Thus, Dan is likely to show some differences in his performance in certain areas of development, including his expressive language. Nevertheless, he will likely pass through the

same developmental sequences as his younger brother, but at a slower pace.

## Motivation

Many children who fall within the range of mild intellectual disability are bright enough to learn and to attend regular schools and classrooms. However, they are more susceptible to a sense of helplessness and frustration, which places additional burdens on their social and cognitive development. As a consequence, they begin to expect failure, even for tasks they can master; in the absence of proper instruction, their motivation to tackle new demands decreases (Harris, 2006).

Ed, describing his memory of comments made by his teacher in elementary school, expresses this phenomenon well:

Her negative picture of me stood out like a sore thumb. That's the problem with people like me—the schools and teachers find out we have problems, they notice them, and then we are abandoned. That one teacher was very annoyed that I was in her class. She had to put up with me. (Bogdan & Taylor, 1982)

Children with intellectual disability, consequently, expect little success, set lower goals for themselves, and settle for minimal success when they are able to do better, as compared with typically developing children of their same mental age (Weisz, 1999). This learned helplessness may be unwittingly condoned by adults. When they are told a child is “retarded,” adults are less likely to urge that child to persist after failure than they are to urge a normal child at the same level of cognitive development. On the other hand, young children with mild intellectual disability improve in their ability to remain on task and they develop goal-directed behavior when



“Acknowledge our children's differences but respect their uniqueness.” —Parent of a child with Down syndrome



provided with stimulating environments and caregiver support (Wilkins & Matson, 2009).

## Changes in Abilities

Intellectual disability is not necessarily a lifelong disorder. Although it is a relatively stable condition from childhood into adulthood, the IQ score can fluctuate in relation to the level of impairment and type of intellectual disability. Children such as Matthew who have mild intellectual disability may, with appropriate training and opportunities, develop good adaptive skills in other domains and may exceed the level of impairment required for a diagnosis of intellectual disability.

The major cause of a child's intellectual disability certainly affects the degree to which his or her IQ and adaptive abilities may change. The IQ of children with Down syndrome, who are not representative of the course of intellectual disability in general, may plateau during the middle childhood years and then decrease over time. For example, from 1 to 6 years of age, children with Down syndrome often show significant age-related gains in adaptive functioning, but as they grow older, their pace of development levels off or even declines (Margallo-Lana et al., 2007). A similar deceleration is often seen in the rate of social development of these children as they grow older (Hazlett et al., 2011). This observation has been termed the *slowing and stability hypothesis* (Hodapp et al., 2011), and it affirms that children with Down syndrome may alternate between periods of gain in functioning and periods of little or no advance. Although these children continue to develop in intelligence, they do so at progressively slower rates throughout the childhood years.

## Language and Social Behavior

Research on language development and social functioning among children and adolescents with Down syndrome suggests that their development follows a largely predictable and organized course (Filippi & Karmiloff-Smith, 2013). Because their cognitive development, play, self-knowledge, and knowledge of others are interrelated in organized and meaningful ways, the underlying symbolic abilities in children with Down syndrome are believed to be largely intact.

However, important differences in language development exist between children with Down syndrome and their typically developing age-mates. Perhaps the most striking difference for children with Down syndrome is the considerable delay in the expressive language development that is necessary to

establish independent living skills. Their expressive language is often much weaker than their receptive language, especially as they attain communication abilities beyond the 24-month level (Filippi & Karmiloff-Smith, 2013).

Another major milestone of infancy and early childhood development is the ability to form secure attachments with caregivers. Although their attachments form more slowly than usual, many children with Down syndrome form secure attachment relationships with their caregivers by 12 to 24 months of developmental age (Dykens, Hodapp, & Evans, 2006). Still, a significant number of these children may have problems in developing a secure attachment because they express less emotion than other children. In one study, children with Down syndrome were not picked up and held by either the mother or the stranger in the strange situation to the same extent as non-delayed children. (See Table 2.2 for a description of the “strange situation” method of assessing child-caregiver attachment.) Even when these children made approaches with appropriate signals for contact, mothers and strangers rarely completed the contact, presumably because the children did not show the distress signals of crying, reaching, or holding on that typically tell the parent “I want to be picked up!” (Vaughn, Contreras, & Seifer, 1994). This finding has important implications for parents of young children with Down syndrome: Even though they may show few signals of distress or desire for contact, these infants and toddlers need to be held and nurtured just as others do.

Following the attachment period, the next important developmental milestones relate to the emergence of a sense of self, which establishes the early foundations of personality. Like other children, toddlers with Down syndrome begin to delight at recognizing themselves in mirrors and photos, although this milestone is often delayed. The experience of self-recognition in most infants is immediately met by smiles and laughter, and this experience is also found among toddlers with Down syndrome (Mans, Cicchetti, & Sroufe, 1978). This positive affect accompanying their visual self-recognition suggests that these children feel good about themselves. However, as toddlers and preschoolers, children with Down syndrome show delayed and aberrant functioning in their *internal state language*, the language that reflects the emergent sense of self and others (through the use of words such as “mad” and “happy”). Because internal state language is critical to regulating social interaction and providing a foundation for early self-other understanding, these children may be at increased risk for subsequent problems in the development of the self-system (Huck, Kemp, & Carter, 2010).

Children with intellectual disability, especially those with moderate to mild impairments, learn symbolic play—games, puppets, and sports—in much the same manner as do other children. Nevertheless, they often fail to gain their peers’ acceptance in regular education settings, because they may have deficits in social skills and social-cognitive abilities (Cook & Oliver, 2011). Concerns about the social development of children with intellectual disability are increasing as a result of the movement to include children with different levels of ability in regular classrooms and schools, rather than only placing them in institutions or specialized facilities. Typically developing children seem to prefer playing with other typically developing children, and as a result, children with intellectual disability are more socially isolated from other children their age (Guralnick, Connor, & Johnson, 2011). These integrated classrooms allow children with intellectual disabilities, despite their limited social skills, to interact with typically developing peers, which in turn has a positive impact on their social status (Leffert, Siperstein, & Widaman, 2010; Siperstein, Glick, & Parker, 2009).

## Emotional and Behavioral Problems

### PATTIE

#### Disturbed or Disturbing?

Pattie was labeled mentally retarded and lived in over 20 homes and institutions before being committed to a state school at age 10. At the age of 20, she discussed some of her experiences and feelings: “I guess I was very disturbed. I call it disturbed, but it was when I was very upset. A lot of people at (the institution) ... told me I was disturbed—that I was disturbed and that I was retarded—so I figure that all through my life I was disturbed. Looking at the things I done, I must have been disturbed. ... Upset and disturbed are the same in my mind. Crazy to me is something else. It is somebody that is really gone. I mean really out. Just deliberately kill somebody just to do it. That is what I call crazy. I guess what I was was emotionally disturbed—yeah. Emotionally disturbed is a time when too many things are bothering me. They just build up till I get too nervous or upset. My mind just goes through all these changes and different things. So many things inside that were bothering me.” (Based on Bogdan & Taylor, 1982.)

Pattie’s description of her feelings while living in various institutions illuminates how “disturbing” her behavior could be. But are her feelings a function of her

environment and personal limitations? Many children and adolescents with intellectual disability have to face many obstacles related to their intellectual, physical, and social impairments, and often they have little control over their own lives.

In the early 1970s, a major study was conducted to gain some understanding of the extent of psychiatric disorders among children and adults with and without intellectual disability (Rutter et al., 1976). Ratings by both parents and teachers revealed that about one-third of the children with mild intellectual disability and one-half of the children with more severe forms of intellectual disability showed major signs of emotional disturbance, suggesting that these problems are common. Since then, research has estimated that the risk of emotional and behavioral disturbances among children with intellectual disabilities is approximately three to five times greater than among typically developing children (Einfeld, Ellis, & Emerson, 2011). These problems are due largely to limited communication skills, additional stressors, and more neurological deficits faced by these children and youths (Adams & Oliver, 2011).

The nature and course of psychiatric disorders in children and adolescents with and without intellectual disabilities is likely very similar. Problem behaviors of youths with mild and moderate disabilities are similarly stable and persistent over the course of their development (de Ruiter et al., 2008; Einfeld et al., 2011). Impulse control disorders, anxiety disorders, and mood disorders are the most commonly diagnosed psychiatric diagnoses for children with intellectual disability. Although these problems are sometimes severe and often require intervention, they are considered to be part of the spectrum of problems that coexist with intellectual disability, and as not indicators of other psychiatric illnesses (Hodapp et al., 2006). By early adulthood, persons with intellectual disabilities continue to show a greater risk for psychopathology than the general population, although problems in attention and aggression show a significant decline from childhood rates (Buckles, Luckasson, & Keefe, 2013).

Adjustments usually are needed in how DSM-5 diagnostic criteria for other mental disorders are applied, however. The frequency of temper tantrums, hyperactivity, and mood disorders among these children requires consideration of what is normal or typical for other children with similar levels of intellectual disability. For example, the diagnosis of attention-deficit/hyperactivity disorder (ADHD) requires the presence of behavioral disturbance that is inappropriate for an individual’s developmental level. Attention spans, distractibility, and on-task behaviors

vary considerably among individuals with profound intellectual disability. An individual with profound intellectual disability must be compared with other children with profound intellectual disability for the purpose of diagnosing any other psychiatric disturbance (APA, 2013).

### **Internalizing Problems**

Adolescence is a developmental period of increased risk for mood disorders and other internalizing symptoms, which is especially true for those with intellectual disability (Hodapp & Dykens, 2009). Like their normally developing peers, adolescents with Down syndrome and other forms of intellectual disability may show a decline in their previously sociable and cheerful behaviors, and in some cases they may suffer from significant symptoms of depression and social withdrawal.

### **ADHD-Related Symptoms**

Teachers and parents of children and adolescents with intellectual disability commonly report ADHD-related symptoms that require adjustments in instruction and child-management strategies (Neece et al., 2013). When a teacher is present to prompt the appropriate behavior and participate in the activity, children with intellectual disability with and without ADHD generally will remain on task. However, when instructed to work without teacher assistance, differences between those with and without ADHD emerge (Handen et al., 1998). When children with intellectual disability and ADHD are placed on stimulant medication, they are able to remain on task for longer periods and their accuracy on cognitive tasks improves, similar to the responses of children with normal IQs (Simonoff et al., 2013).

### **Other Symptoms**

Children and adults with intellectual disability may show additional symptoms that can be particularly troublesome. Pica (discussed in Chapter 14), which can result in the ingestion of caustic and dangerous substances, is seen in its more serious forms among children and adults with intellectual disability. **Self-injurious behavior (SIB)** is a serious and sometimes life-threatening problem that affects about one in five young children with ID (MacLean & Dornbush, 2012). Some common forms of SIB include head banging, eye gouging, severe scratching, rumination, some types of pica, and inserting objects under the skin. The long-term prognoses for pica and SIBs are not favorable. Emotional withdrawal, stereotypies (frequent repetition of the same posture, movement, or form of

speech—e.g., head banging, hand or body movements), and avoidance of eye contact are often still evident more than 20 years later among persons with more severe forms of intellectual disability (Taylor, Oliver, & Murphy, 2011).

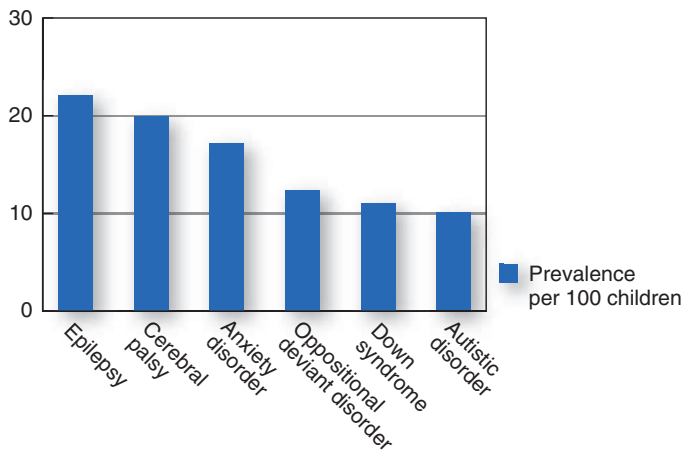
Thus, children with intellectual disability may show emotional and behavioral problems that require special recognition and learning strategies. In general, these problems do not constitute major psychiatric disorders, but they do reflect the greater challenges these children may have in learning to express their needs and in adapting to their surroundings. A 7-year-old girl with mild intellectual disability, for instance, may be at a developmental level comparable to that of a typically developing 4-year-old. In the classroom, therefore, she may have difficulty sitting in her seat and remaining on task. She may not always control her emotions or her behavior as well as other 7-year-olds in the class, leading to occasional outbursts of laughter or anger. It is important to keep these problems within a developmental perspective. We would not expect a 4-year-old to behave as well in the classroom as an older child, and expectations and teaching methods have to be adjusted accordingly. As expressed so well by Ed and Pattie, labeling a child with a diagnostic term that implies pathology or inability is often ill-conceived and counterproductive. Such terms must be used sparingly—only in circumstances, such as self-injurious behaviors, for which special attention is warranted.

## **Other Physical and Health Disabilities**

Children with intellectual disabilities may also suffer other physical and developmental disabilities that can affect their health and development in pervasive ways. Such disabilities are usually related to the degree of intellectual impairment. Based on a meta-analysis of 31 studies, the prevalence of chronic health conditions in this population is much higher than in the general population (Oeseburg et al., 2011). ● Figure 5.2 shows some of the more common developmental disabilities found among children with intellectual disabilities.

Despite major co-occurring physical and intellectual disabilities, children and adults with Down syndrome now have a life expectancy approaching 60 years, largely as a result of better medical treatments for respiratory infections and congenital heart disorders (Dykens, 2013). However, most individuals with Down syndrome who live beyond the age of 40 demonstrate cognitive decline (much like Alzheimer's disease) due to gene damage on chromosome 21 (Torr et al., 2010).





● **FIGURE 5.2** | Chronic health conditions among children with intellectual disabilities.

Based on Data from Oeseburg et al. (2011)

## Section Summary

### Developmental Course and Adult Outcomes

- Children with intellectual disability follow developmental stages in the same order as do typically developing children. However, their goals and motivation are reduced over time because of feelings of frustration, which often lead to expectations of failure.
- Adaptive skills and level of impairment may improve over time, especially for children with mild intellectual disability, if appropriate training and opportunities are provided.
- Developmental disabilities, such as speech and language problems and behavioral disturbances, are common. Emotional and behavioral problems are considered part of the spectrum of problems coexisting with intellectual disability, rather than indicators of mental disorder.
- Children with intellectual disability have a greater chance of having other physical and developmental disabilities, such as cerebral palsy, epilepsy, and emotional and behavioral disorders that can affect their health and development in pervasive ways.

## CAUSES

It is astounding to consider that there are over 1,000 genetic disorders associated with intellectual disability, in addition to other organic causes (Hodapp & Dykens, 2009). Yet, despite the number of known causes, scientists are unsure of the causes of the majority of intellectual disability, especially mild ID. A genetic or environmental cause is known for almost two-thirds of individuals with moderate to profound intellectual disability, whereas the causes are known for only about

one-quarter of the individuals with mild intellectual disability (McDermott et al., 2007; van Bokhoven, 2011). Some causes happen before birth (prenatal), as is the case with all genetic disorders and accidents in the womb. Other causes are birth-related (perinatal) insults, such as prematurity or a lack of oxygen (anoxia) at birth. Still other causes are an inflammation of the brain lining (meningitis), head trauma, and other factors that occur after birth (postnatal).

Historically, causes of intellectual disabilities were divided into two fairly distinct groups—an organic group and the cultural–familial group (Hodapp & Dykens, 2003). The causes in the **organic group** have a clear biological basis and are usually associated with severe and profound intellectual disability, whereas causes in the **cultural–familial group** have no clear organic basis and are usually associated with mild intellectual disability (Hodapp et al., 2006).

Four major categories of risk factors contribute to intellectual disabilities: biomedical, social, behavioral, and educational. These four risk factors interact across time and even across generations from parent to child and provide a more comprehensive explanation of the interacting causes of problems associated with intellectual impairments (AAIDD, 2010; Chapman, Scott, & Stanton-Chapman, 2008). The definitions, characteristics, and causes of intellectual disability on the basis of these four risk factors are summed up in Table 5.5.

Although a distinction between organic and non-organic risk factors clarifies the underlying causes of intellectual disability, keep in mind that the distinctions are less clear in milder forms of intellectual disability than they are in more severe forms. For example, the large majority of persons at more severe levels of intellectual impairment (96%) show a clear etiology for the disorder, whereas a sizable percentage (32%) of those with mild impairments does not (Simonoff et al., 1996).

Considerable knowledge exists about organic intellectual disability because of the strong biological factors involved. Also, the increased ability to diagnose organic problems has led to increased estimates of this type of intellectual disability relative to cultural–familial causes—about one-third to one-half of all persons with intellectual disability show a clear organic cause (Hodapp et al., 2006). In stark contrast, the cultural–familial group remains somewhat of a mystery, although it comprises one-half to two-thirds of all persons with intellectual disability (Witwer et al., in press). As noted in Table 5.5, the prime suspects are environmental and situational factors such as poverty, inadequate child care, poor nutrition, and parental psychopathology, which mostly affect the psychological, and not the biological, development of the child. However, more



**TABLE 5.5 | Risk Factors for Intellectual Disability**

Timing	Biomedical	Social	Behavioral	Educational
<b>Prenatal</b>	1. Chromosomal disorders 2. Single-gene disorders 3. Syndromes 4. Metabolic disorders 5. Cerebral dysgenesis 6. Maternal illness 7. Parental age	1. Poverty 2. Maternal malnutrition 3. Domestic violence 4. Lack of access to prenatal care	1. Parental drug use 2. Parental alcohol use 3. Parental smoking 4. Parental immaturity	1. Parental cognitive disability without supports 2. Lack of preparation for parenthood
<b>Perinatal</b>	1. Prematurity 2. Birth injury 3. Neonatal disorders	1. Lack of access to prenatal care	1. Parental rejection of caretaking 2. Parental abandonment of child	1. Lack of medical referral for intervention services at discharge
<b>Postnatal</b>	1. Traumatic brain injury 2. Malnutrition 3. Meningoencephalitis 4. Seizure disorders 5. Degenerative disorders	1. Impaired child–caregiver interaction 2. Lack of adequate stimulation 3. Family poverty 4. Chronic illness in the family 5. Institutionalization	1. Child abuse and neglect 2. Domestic violence 3. Inadequate safety measures 4. Social deprivation 5. Difficult child behaviors	1. Impaired parenting 2. Delayed diagnosis 3. Inadequate early intervention services 4. Inadequate special education services 5. Inadequate family support

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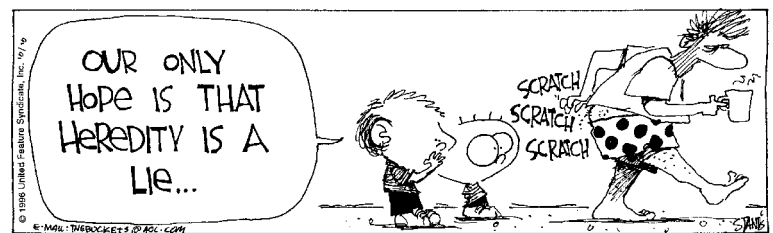
specific cause-and-effect relationships have not been determined. Accordingly, both genetic and environmental factors are implicated in milder forms of intellectual disability, but in a manner as yet to be determined (Toth & King, 2010).

The relative importance of the environment also stands out in the two-group distinction. The socioeconomic background of the organic group is about the same as that for the general population, which fits with the notion that severe forms of intellectual disability can affect anyone, regardless of SES. The familial group is overrepresented by those of lower SES and social disadvantage and is significantly related to a family history of intellectual disability. This fits with the assertion that an impoverished social environment can influence intellectual growth and ability in subtle, yet crucial, ways.

In most cases, the risk factors for intellectual disabilities have been supported empirically, with some adjustments as noted earlier in terms of nonorganic risk factors. First, the percentage of individuals with a clear organic cause has increased over the past few decades because of the greater knowledge of genetic and organic causes. Also, the original assumption that mild intellectual disability is not due to biomedical (organic) causes had to be tempered by findings that epilepsy, cerebral palsy, and other organic disorders are found more often among persons with mild intellectual disability than among those without intellectual disabilities (Hodapp et al., 2011).

## Inheritance and the Role of the Environment

The study of human intelligence has received the lion's share of attention in terms of the underlying processes involved in genetic makeup and the environmental factors that influence genetic expression. Still, the long-standing debate concerning the relative contributions of genes and environment is far from being fully resolved (McDermott et al., 2007). Conceivably, genetic influences on development are potentially modifiable by environmental input, although the practicality of the modifications is another matter. Similarly, environmental influences on development involve the genes or structures to which the genes have contributed (Neisser et al., 1996). Simply stated, children do not inherit an IQ—they inherit a **genotype**, which is a collection of genes that pertain to intelligence. The expression of the genotype in the environment—the gene–environment interaction—is



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referred to as the **phenotype**. The **heritability** of a trait describes the proportion of the variation of a trait attributable to genetic influences in the population (Neisser et al., 1996). Heritability of any given trait, therefore, can range from none (0%) to 100% genetically determined.

Is it possible to estimate the heritability of intelligence and, by implication, the heritability of intellectual disability? This intriguing question can now be answered with some degree of confidence, but little fanfare. The overwhelming evidence points to a heritability of intelligence of approximately 50%; that is, both genetic and nongenetic factors play powerful roles in the makeup and expression of intelligence (Davis, Arden, & Plomin, 2008).

There are so many specific genetic causes of intellectual disability that some skepticism about the importance of environmental effects still remains. The difficulty of identifying, pinpointing, and measuring specific, nongenetic variables certainly adds to this dilemma. However, considerable evidence has demonstrated that major environmental variations do affect cognitive performance and social adjustment in children from disadvantaged backgrounds (Ramey, Ramey, & Lanzi, 2007). For example, children born to socially disadvantaged parents and then adopted into more privileged homes have higher IQ scores, stronger self-esteem, and fewer acts of delinquency than siblings reared by their disadvantaged, biological parents (Juffer & van IJzendoorn, 2007; van der Voort et al., 2013).

The prenatal environment may influence IQ to a greater extent than was previously appreciated. A review of studies of twins and nontwin siblings revealed that a shared prenatal environment (i.e., all children shared the same mother) accounted for 20% of IQ similarity in twins but only 5% in nontwin siblings (Devlin, Daniels, & Roeder, 1997). These findings imply that prenatal influences such as nutrition, hormone levels, and toxic substances may be misidentified as genetic when in fact they are environmental (Rutter, 2011). The practical benefits of this research are important to consider. If early environmental (prenatal) influences have a significant impact on intellectual functioning, then expanding public health initiatives aimed at improving maternal nutrition and reducing prenatal exposure to toxins may not only improve maternal prenatal care, but may also improve children's intellectual and cognitive functioning.

## Genetic and Constitutional Factors

Despite the rapid expansion of knowledge regarding the genetic mechanisms underlying conditions

associated with intellectual disability, the actual biological mechanisms that cause impaired intellect are poorly understood (Hodapp & Burack, 2006). Identification of abnormal genes, or genes involving an increased risk for particular disorders, is invaluable for genetic screening and counseling, but the identification does not specify a more effective treatment mode for intellectual disability.

Because so many conditions cause intellectual disability, the focus in this section will be on several different disorders or classes of disorder, including Down syndrome, fragile-X syndrome, Prader-Willi and Angelman syndromes, and single-gene conditions. Each disorder illustrates different aspects of genetic mechanisms. The various ways in which genes may interact with environmental influences also are highlighted.

### Chromosome Abnormalities

The most common disorder that results from a chromosome abnormality is Down syndrome. These abnormalities also can occur in the number of sex chromosomes, resulting in intellectual disability syndromes such as Klinefelter's (XXY, a disorder in which males have an extra X chromosome) and Turner's (XO, a disorder in which women are missing a second X chromosome). These latter disorders are somewhat common—about 1 in 400 live births—but they are generally less devastating than genetic irregularities in their effects on intellectual functioning (Simonoff et al., 1996).

The number of children with Down syndrome has gradually decreased from 1 in 700 births to 1 in 1,000 births over the past two decades, due to increased prenatal screening and termination of pregnancies diagnosed with Down syndrome (Hazlett et al., 2011; Roizen & Patterson, 2003). The syndrome produces several distinguishing physical features, including a small skull; a large tongue protruding from a small mouth; almond-shaped eyes with sloping eyebrows; a flat nasal bridge; a short, crooked fifth finger; and broad, square hands with a simian (monkeylike) crease across the palm. These physical features are sometimes inconspicuous, and they can appear in varying degrees.

In most cases of Down syndrome, the extra chromosome results from **nondisjunction**, which is the failure of the 21st pair of the mother's chromosomes to separate during meiosis. When the mother's two chromosomes join with the single 21st chromosome from the father, the result is three number 21 chromosomes instead of the normal two (known as trisomy 21). Because nondisjunction is strongly related to maternal age, the incidence of Down syndrome increases from

about 1 per 1,000 live births for mothers less than 35 years old to about 20 per 1,000 when the mother is 45 years of age or older (Wu & Morris, 2013).

Although the chromosomal basis of Down syndrome is well understood, the specific cause of intellectual disability in these children is not known. Gene mapping of chromosome 21 has resulted in the belief that some genes may have localized effects on brain development (Roizen, 2007). Testing this theory from a functional perspective, researchers pinpointed differences in hippocampal function among young children with and without Down syndrome based on neuropsychological testing (Pennington et al., 2003). Because the hippocampus plays an important role in long-term memory, these findings help to explain some of the underlying processes that affect the ability of children with Down syndrome to acquire normal language skills (a fundamental aspect of IQ).

**Fragile-X syndrome** is the most common cause of inherited intellectual disability (Down syndrome occurs more frequently but is rarely inherited). This disorder affects about 1 in 4,000 males and 1 in 8,000 females (Hagerman, 2011). Physical features of fragile-X syndrome are more subtle than those of Down syndrome and may include a large forehead, a prominent jaw, and low, protruding ears. Intellectual disability is generally in the mild to moderate range, although some children are profoundly handicapped and others have normal intelligence (Cornish et al., 2013). Males suffer more detrimental effects of fragile-X syndrome; intellectual disability occurs in most males who have fragile-X syndrome, as compared with only about half of females (Reiss & Hall, 2007).

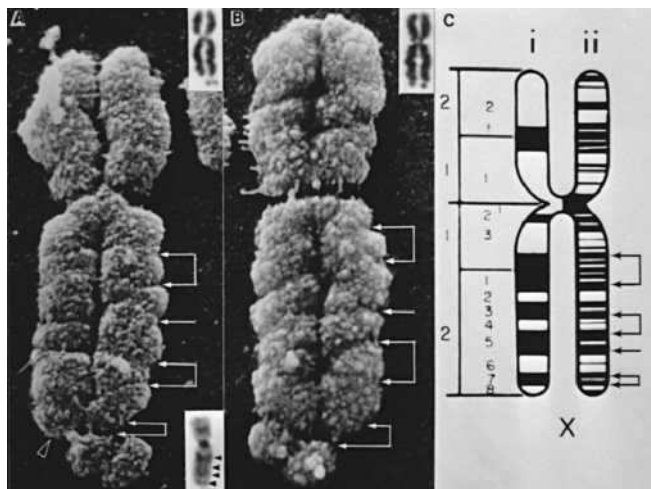


Children and adolescents with fragile-X syndrome, which affects twice as many boys as girls.

Although the gene for fragile-X syndrome, known as the FMR-1 gene, is located on the X chromosome, this syndrome does not follow a traditional X-linked inheritance pattern. About one-third to one-half of the females who carry and transmit the disorder are themselves affected with a variant of the syndrome and show a slight degree of cognitive or emotional impairment. Further, about 20% of males with the FMR-1 gene transmit the disorder but are not affected themselves (Fatemi & Folsom, 2011).

The behavioral characteristics of fragile-X syndrome are often subtle but distinctive. The majority of affected males have unusual social and communication patterns marked by shyness and poor eye contact, as well as significant delays in cognitive and communication development (Einfeld, 2005). Social anxiety and avoidance are also common in girls with this disorder, even if unaccompanied by intellectual disability (Gerenser & Forman, 2007). Notably, most males and about one-third of females with fragile-X syndrome show some autism-like behaviors, such as flapping hands, biting themselves, repetitious actions, and walking on toes, and close to half of children with fragile-X syndrome meet the criteria for a diagnosis of autism (McCary & Roberts, 2013).

**Prader-Willi syndrome** is a complex genetic disorder that includes short stature, intellectual disability or learning disabilities, incomplete sexual development, low muscle tone, and an involuntary urge to eat constantly. The syndrome is rare and estimated to affect only about 5 to 10 per 100,000 births (Dykens, Cassidy, & DeVries, 2011). Between ages 2 and 6, children with this syndrome develop extreme overeating, foraging, and hoarding. They need fewer calories than normal to maintain an appropriate

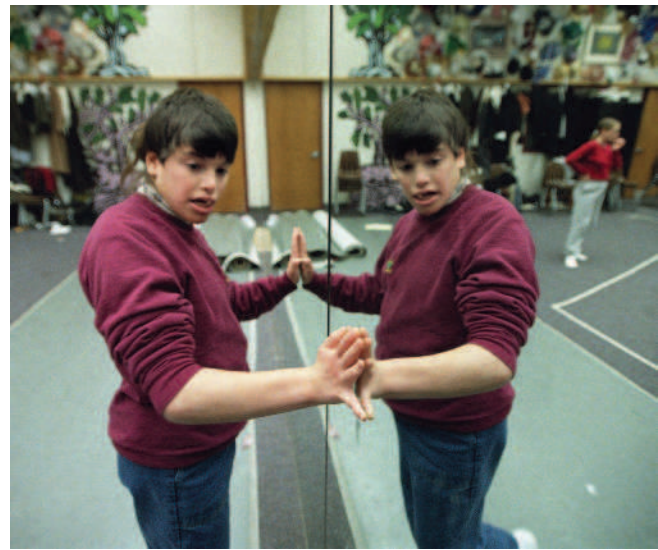


This micrograph shows the “pinched chromosome” found in fragile-X syndrome.





Chico Sanchez/Alamy



The Washington Times/ZUMA PRESS/Newscom

This 8-year-old boy has Prader–Willi syndrome (left). Nineteen-year-old Danna has Angelman syndrome and is part of the inclusion program at her school, allowing her to be with students from the general population (right)

weight because they are small, and they invariably become obese (Hinton, Isles, Williams, & Parkinson, 2010; Theodora, Talebizadeh, & Butler, 2006).

**Angelman syndrome** is associated with intellectual disability that is usually moderate to severe. The behavior of children with this disorder is characterized by ataxia (awkward gait), jerky movements, hand flapping, seizures, and the absence of speech. Distinctive facial features include a large jaw and an open-mouthed expression (Didden et al., 2009).

Both Prader–Willi and Angelman syndromes are associated with an abnormality of chromosome 15, but they are not considered inherited conditions. Rather, these syndromes are believed to be spontaneous genetic birth defects that occur at or near the time of conception. For reasons that are still not well understood, genes in the affected region on the mother's chromosome 15 are not expressed (functional). This lack of a gene or genes that are very close to each other appears to be the cause of the related syndromes. The origin—whether maternal or paternal—of the absent genetic material is the likely cause of the marked phenotypic differences.

Much is being discovered about the genetic influences on intelligence and adaptive abilities. Because these influences are by no means uniform or exact, a challenge remains in accounting for the mechanisms that cause these effects on intelligence and the variations in phenotypic expression. Even with Down syndrome, for example, the range in IQ extends into mild intellectual disability and some individuals have an IQ within the normal range. Molecular genetic and biological techniques

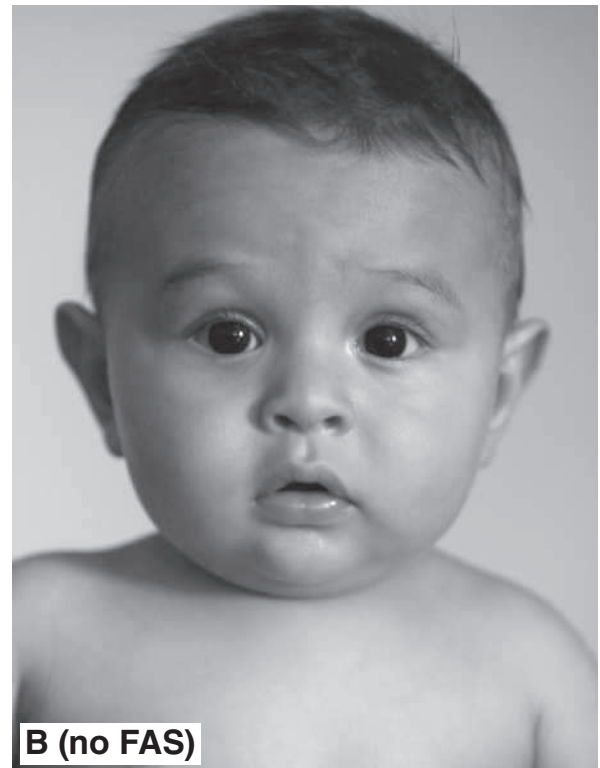
are beginning to make it possible to understand why such variation occurs, although knowledge to date is extremely limited (Handen, 2007).

### Single-Gene Conditions

Other syndromes affecting intelligence and cognitive functioning can result from genetically based metabolic defects, known as inborn errors of metabolism. Such defects cause excesses or shortages of certain chemicals that are necessary during particular stages of development. Inborn errors of metabolism account for 3% to 7% of cases of severe intellectual disability (Antshel & Arnold, 2007; Wolfe & Krasnewich, 2013).

One of the best understood examples of a single-gene condition is *phenylketonuria* (PKU), a rare disorder occurring in approximately 1 in 15,000 individuals (Waisbren, 2011). Unlike chromosomal abnormalities that cause Down syndrome, the cause of PKU is a recessive gene transmitted by typical Mendelian mechanisms. Children receive the gene from both parents (neither of whom necessarily has PKU), which results in a lack of liver enzymes necessary for converting the amino acid phenylalanine into tyrosine, another essential amino acid. Tyrosine is normally converted into other chemicals needed for physical development. Because the individual is unable to metabolize phenylalanine, which is found in many foods, it accumulates in the body and is converted to phenylpyruvic acid, another abnormal metabolite. This metabolite, in turn, causes brain damage, intellectual disability, musty body odor, hyperactivity, seizures, and dry, bleached skin and hair.





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Characteristics of children with fetal alcohol spectrum disorders (left) as compared with a child without evidence of the disorder (right). Children with FASD show features such as skin folds at the corners of the eyes, low nasal bridge, short nose, smooth area between nose and upper lip, small head circumference, small eye opening, small midface, and thin upper lip. These facial features are consistent in children with fetal alcohol spectrum disorders across geographic locations and from different ethnic backgrounds

PKU is a good example of a genetic disorder that can be treated successfully by environmental changes. Most countries now screen all infants for the presence of this defect at birth, and affected infants are immediately placed on a restricted diet. However, now that affected individuals have received early treatment, young women with PKU have begun to reproduce, resulting in high rates of birth defects and subsequent intellectual disability in their offspring. Severe dietary restriction, begun prior to conception, is currently the best precaution for these problems (Waisbren, 2011).

## Neurobiological Influences

Fetal and infant development also can be affected by adverse biological conditions such as malnutrition, exposure to toxic substances, and various prenatal and perinatal stressors. These conditions directly or indirectly cause lowered intelligence and intellectual disability in some, but by no means all, cases. The effects often depend on the degree of insult to the fetus and the time of fetal development (the first trimester being the period of greatest susceptibility).

Pregnancy and delivery are times of greatest susceptibility to trauma, infections, or other complications and account for about 10% of intellectual disability overall. Other general medical conditions acquired during infancy or childhood, such as infections, traumas, and accidental poisonings, account for about 5% of suspected or known causes of intellectual disability (Hodapp et al., 2011).

Prenatal exposure to alcohol through maternal alcohol consumption during pregnancy is the most widely recognized preventable cause of intellectual disability. *fetal alcohol spectrum disorder* (FASD) is an umbrella term that covers the range of outcomes associated with all levels of prenatal alcohol exposure (Riley, Infante, & Warren, 2011). Even small amounts of alcohol may have negative effects on the growth and intellectual abilities of a fetus. For example, significant deficits in physical development were found among children and adolescents with prenatal alcohol exposure when mothers had, on average, less than one drink per day; exposure during the second half of the first trimester was especially harmful (Day et al., 2002; Feldman et al., 2012).

## Lip-Philtrum (space between the nose and upper lip) Guide



This series of photos provides a more detailed look at degrees of philtrum groove smoothness. In Photo 1, you see a normal lip-philtrum groove. As your eye moves to the right, you see philtrums that are progressively smoother. In Photo 5, you see the smoothness characteristic of FAS.

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The most extreme form of FASD, **fetal alcohol syndrome**, is considered to be a leading known cause of intellectual disability because of its clear link to intellectual impairment. Fetal alcohol syndrome is estimated to occur in 0.5 to 2.0 per 1,000 live births (Centers for Disease Control and Prevention, 2011c), although it is considered to be grossly underdiagnosed and may be considerably more common. Alarming, the incidence of this disorder is about 4 times higher among African Americans and 16 times higher among Native Americans as compared with majority populations (MMWR, 2002). Despite over two decades of public health warnings about abstaining from alcohol immediately before and during pregnancy, fetal alcohol spectrum disorders have not declined (Watson et al., 2011).

Fetal alcohol syndrome is characterized by central nervous system (CNS) dysfunction, abnormalities in facial features, and growth retardation, with affected children falling below the 10th percentile. The mechanism that causes the abnormalities is not clear but is believed to involve the *teratogenic* (damage to fetal development) effects of alcohol on the development of the central nervous system and the related damage from metabolic and nutritional problems associated with alcoholism (Niccols, 2007). On average, the IQ of children and youths with this disorder is in the mild range of intellectual disability (Streissguth, 2007). In addition to intellectual deficits, these children often have long-term difficulties that resemble ADHD, including attention deficit, poor impulse control, and serious behavior problems, which often persist into adulthood and carry high treatment costs (Amendah, Grosse, & Bertrand, 2011; Vaurio, Crocker, & Mattson, 2013).

Several teratogens other than alcohol are known to increase the risk of intellectual disability because of their effect on CNS development. Viral infections, such as rubella (German measles), contracted by the mother during the first 3 months of pregnancy can cause severe defects in the fetus. However, immunization has virtually eliminated this cause of intellectual

disability in most developed countries. Syphilis, scarlet fever, tuberculosis of the nervous system, degenerative diseases of the nerves, and sometimes measles and mumps can lead to intellectual disability. ID also can be caused by x-rays, certain drugs taken by the mother during pregnancy, mechanical pressure on the child's head during birth, lack of oxygen due to delays in breathing at birth, poisons such as lead and carbon monoxide, and tumors and cysts in the head (Hodapp & Dykens, 2003). In essence, any biochemical or infectious substance that cannot be destroyed or regulated by the mother's immune system or regulatory system can pose a risk to fetal development and, in turn, intellectual ability.

## Social and Psychological Dimensions

The final group of factors that cause intellectual disability, or occur in association with it, is perhaps the least understood and most diverse. Broadly defined, these factors include many environmental influences, such as deprived physical and emotional care and stimulation of the infant, and other mental disorders that are often accompanied by intellectual disability, such as autism spectrum disorder. Together these factors account for about 15% to 20% of intellectual disability. Although quite broad in scope, these influences are largely indirect and unproven because they often are embedded in different layers and degrees of individual and family circumstances. Parental deviance, such as abuse or neglect, and how it can affect intellectual and behavioral development is discussed in greater detail in Chapter 12.

Parents not only provide their children with their genes, but also provide the child-rearing environment and atmosphere that serve to direct and shape the child's psychological development right from the beginning. Consider the comments by the father of a young child with Down syndrome, who had to learn how to ask for proper assistance and to connect with other families of children with Down syndrome:

I will never forget when the nurse told us how much these children can achieve. Her advice to contact a local association for children with Down syndrome was an important beginning. Other parents at the association helped me understand that Down syndrome was a chromosomal aberration and not a disease, and [gave advice on] how to look for help. My son was hardly a month old when he began physiotherapy to help him learn and interact with others. Jake is 3 years old now and he is full of life. He walks, repeats several words, and understands directions. (Adapted from Martin, 1995)

How do families who have a child with intellectual disability contribute to the child's healthy development or, alternatively, to his or her decline? In recent years, the field of intellectual disabilities has shown a major change in how this question is addressed. Rather than focusing only on the family's negative influence, researchers are interested in learning how some families successfully cope with the additional stress and demands of raising a child with intellectual disability. As is the case when dealing with other stressors, individual members and the family unit can be affected negatively as well as positively, such as when a couple or siblings are brought closer together by caring for a child with special needs (Hodapp & Dykens, 2012; Lobato et al., 2011; Neece, Blacher, & Baker, 2010).

One way in which parents adapt successfully to having a child with special needs is to use social supports and community resources, although individual preferences regarding the type of support used may vary, and supports that help mothers may not help fathers. Mothers often are concerned about how raising a child with intellectual disability may affect their personal relationships with their husbands and about the restrictions the child's care may place on their role in the family, whereas fathers worry about not feeling close to the child. Thus, mothers and fathers differ in how they understand and relate to the child with intellectual disability, the aspects of raising the child they see as stressful, and the factors that best alleviate stress (Gerstein, Crnic, Blacher, & Baker, 2009).

Understanding how young people with Down syndrome function socially and independently has helped identify the factors that affect their adjustment to community living. Not surprisingly, early cognitive development is a strong predictor of developmental progress and self-sufficiency among such children, as shown in areas such as language (Filippi & Karmiloff-Smith, 2013). However, family factors are also important, particularly mothers' strategies for coping with their children's problems and their families' levels of social support (Gray et al., 2011).

## Section Summary

### Causes

- The two-group approach emphasizes the important etiological differences between organic and cultural–familial causes of intellectual disability.
- Organic causes include genetic and constitutional factors, such as chromosome abnormalities, single-gene conditions, and neurobiological influences.
- Suspected cultural–familial, or nonorganic, causes of intellectual disability include diverse social, behavioral, and educational risk factors.
- Some of the established risk factors for intellectual disability include alcohol, lead, and other toxins or injuries that affect prenatal and postnatal development. Other risk factors affect the quality of physical and emotional care and stimulation of the infant and small child, such as poverty and inadequate family supports.

## PREVENTION, EDUCATION, AND TREATMENT

*We plead for those who cannot plead for themselves.*

—Motto of Highgate, the first public institution for persons with intellectual disability, established in London, England, October 1847

As we turn our discussion toward treatment methods for children with intellectual disability, consider for a moment how you would apply your knowledge of psychological and educational treatments to best assist a child such as Vanessa or Matthew. Would you first try to get Matthew's behavior problems under control and then teach him other skills? Would Vanessa likely benefit from individualized treatment that emphasizes gradual speech training and self-help skills?

As is true for several other disorders we have discussed, such as ADHD and some types of conduct disorders, the primary presenting problems—in this case, intellectual deficiency and limited adaptive abilities—are chronic conditions that pose limitations across many important areas of development. Consequently, programs often must be designed to fit the educational and developmental levels of each individual child even more so than, say, treatment programs for children with behavior or anxiety problems. It is useful to begin this task with an overview of major environmental and individual characteristics that may increase the risk of adjustment problems, or serve to protect the child from such problems.

A child's overall adjustment is a function of parental participation, family resources, and social supports (on the environmental side), combined with his or her level

of intellectual functioning, basic temperament, and other specific deficits (on the individual side). Treatment can be designed to build on the child's existing resources and strengths in an effort to bolster particular skill areas or learning abilities. In other words, it is not necessary to focus attention primarily on what the child lacks, but rather on how best to match teaching and therapeutic methods to the child's own levels and abilities to accomplish realistic, practical goals. Thus, treatment and education for children with ID involves a multicomponent, integrated strategy that considers children's needs within the context of their individual development, their family or institutional setting, and their community (Wilkins & Matson, 2009).

The severity of intellectual disability can be prevented or reduced in some instances by taking proper precautions. Therefore, we begin this section by discussing current health care practices involving parental education and prenatal screening. These procedures, implemented in many communities, are designed to inform parents about proper prenatal care and risks and to detect abnormal fetal development. We then turn to psychosocial treatments for children with intellectual disability and their families, which have become a common part of many treatment and education plans. In short, treatment focuses on teaching the child necessary skills and abilities, such as language, personal care and hygiene, and social skills, as well as on teaching skills and providing supports to parents and other caregivers.

Psychopharmacological interventions for children and adults with intellectual disabilities have been hindered by both professional and public perceptions that psychotropic drugs are used to control behavior—a view based on unfortunate and inappropriate use in the past and on the drugs' major side effects. Although many newer classes of compounds that reduce unpleasant side effects have become available over the past decade, these compounds have not been systematically studied in treating people with intellectual disability. Nevertheless, drug treatment is beneficial in some cases. As with other childhood disorders, drug treatment can be targeted at desirable changes in specific behaviors or dimensions, such as compulsions, aggression, or self-injury, rather than at treating the underlying disorder itself (Golombek & King, 2010; Ghuman et al., 2009).

## Prenatal Education and Screening

One of the best opportunities to promote healthy outcomes occurs during prenatal development (Hodapp & Burack, 2006). Although not all forms of intellectual disability can be prevented prenatally, many debilitating forms related to fetal alcohol syndrome, lead poisoning, or rubella can easily be prevented if proper

precautions are taken. A much larger number of children are positively affected by prenatal education and health care if one includes not only the prevention of specific risks, but also the promotion of proper child care, especially during the child's first 2 years.

Not too long ago, a pregnant woman would have seen her doctor for several visits prior to childbirth, and may have gained additional knowledge through reading and from family members. At that time, the focus was largely on the medical needs of the pregnancy, with little opportunity to consider what it means to raise a child and to prepare for the added stress and complexity that child care involves.

Today, almost all communities have prenatal programs for parents, and fathers have taken on a much larger role. Parents are provided with information about the different periods of fetal development and are cautioned about the use of alcohol, tobacco, nonprescribed drugs, and caffeine during pregnancy. These programs, often run by public health nurses, community colleges, churches, and other community organizations, have filled much of the gap in services between basic medical care and basic child care that parents need prior to the birth of a baby. The stresses of childbirth and postnatal adjustment are described, with opportunities for parents to consider the additional supports they may need and the changes they may need to make to ensure the child's health and safety. Many programs also include discussion of children with special needs, so that parents are not left feeling confused and alone (Ramey et al., 2007).

In providing these important prenatal services, there is an increasing multicultural focus that sensitively and appropriately considers the cultural background of the recipients (Pumariaga et al., 2013). We now recognize that family members make choices based on cultural influences. To be of most help, prenatal and postnatal services must be culturally diverse and culturally sensitive. Meeting this goal involves working with informal support and assistance networks, such as churches, community and spiritual leaders, and community organizations, in ways that extend self-determination. Prenatal programs are increasingly breaking away from a set curriculum and are being modified to establish a better fit with each cultural group or community—for example, by providing information on ways to access health care and family services for persons with limited transportation, limited income, and so forth.

Prenatal screening constitutes a particular form of genetic screening that is used to determine whether a fetus has a genetic abnormality, such as Down syndrome, which would lead to a seriously handicapping condition. Ultrasound scanning can detect many conditions associated with physical defects, and testing of amniotic fluid during fetal development assists the prenatal



diagnosis of chromosomal abnormalities and genetic diseases identifiable at the DNA level (Roizen & Patterson, 2003). Substantial advances in genetic screening allow for much greater precision in genetic counseling. For example, noninvasive molecular genetic techniques are replacing invasive techniques, such as amniocentesis, for women whose pregnancies are considered to be at an increased risk for certain chromosome abnormalities, which allows for quicker diagnosis of a broad range of genetic disorders (Devers et al., 2013). Ethical and practical guidelines are still under review, however, because there is a fundamental difference between using genetic information to prevent an illness or disease and altering genetic material to promote desired (or get rid of undesired) personal characteristics.

## Psychosocial Treatments

The first psychosocial treatment we consider involves intensive, broad-ranging, early-intervention services for families with young children that are designed to reduce risk factors and promote healthy child development. Although expensive to deliver, these services are proving to be of considerable benefit to children and families over the long term, and they accomplish a great deal more than merely reducing intellectual deficits. We then take a close look at the existing educational and therapeutic methods that have successfully benefited children with various levels of intellectual disability. We discuss the application of behavioral, cognitive-behavioral, and family-oriented interventions, with an emphasis on the task of integrating known treatments that best match the different needs of these children.

As a prelude to the discussion of psychosocial treatments, we acknowledge the importance of community-based activities that offer people with disabilities a choice of ways to develop their interpersonal and practical skills and self-confidence. Studies find that athletes who participate in Special Olympics score higher on measures of social competence and have more positive self-perceptions than do their nonathlete counterparts (Special Olympics, 2007).

### Early Intervention

For over 50 years, involving caregivers and other adults in early, intensive, child-focused activities has been one of the most promising methods for enhancing the intellectual and social skills of young children with developmental disabilities, including children with intellectual disability, learning disabilities, and lack of environmental stimulation (Wilkins & Matson, 2009). Many of these children would be described as disadvantaged or high-risk, synonymous terms referring to family circumstances such as low income, insufficient

health care, and poor housing; child characteristics such as low IQ, poor adaptive abilities, and physical or health disabilities; or a combination of the two. Early educational intervention consists of systematic efforts to provide high-risk children with supplemental educational experiences before they enter school, and this intervention frequently includes other family and child services.

One of the more successful examples of an early educational intervention is the Carolina Abecedarian Project (Campbell & Ramey, 2010). The intervention was offered to children of poor families (98% of whom were African American), who were provided with enriched environments from early infancy through the preschool years. In follow-up studies of over 100 children, results showed that by age 2, the test scores of children in the enrichment group were already higher than the test scores of children in control groups, and at age 15, they remained some 5 points higher, 10 years after the end of the program. At age 15, members of the treated group were less likely to score in the intellectual disability or low-normal range of intellectual functioning. The enrichment group also outperformed the control groups in academic achievement through 10 years in school for both reading and mathematics, and there were fewer instances of grade retention or special education classes (Ramey et al., 1999, 2000). By age 30, those who received the intervention had better educational attainment, with some evidence of economic benefit as well (Campbell et al., 2002; Campbell et al., 2012; Pungello et al., 2010).

Based on these and related findings, the optimal timing for intervention appears to be during the preschool years (Hodapp & Burack, 2006). Early education programs such as the Abecedarian project are highly relevant to the issue of environmental effects in intellectual disability because they involve children from socially disadvantaged backgrounds, who have a much higher risk of intellectual disability. Although the programs show effectiveness, the lasting benefits depend on the stability and continuation of environmental changes that foster healthy child development. A Closer Look 5.3 offers a set of practical recommendations for enhancing children's lives through early intervention.

Dan's mother added some additional ideas, based on her own experiences:

Be creative. He learns by repetition, so the more closely you follow the "house" system and coordinate all the topics of all the classes, the easier he and the other students can learn. He can learn spelling words of items he touches in science lab. He can learn history related to his library book of the week. Combine the lesson plans to touch all phases of the subject.

## Practical Recommendations for Enhancing Children's Lives through Early Intervention

- *Encouragement of exploration.* Children are encouraged by adults to explore and gather information about their environments.
- *Mentoring in basic skills.* A trusted, familiar adult teaches children basic cognitive skills such as labeling, sorting, sequencing, and comparing.
- *Celebration of developmental advances.* Family and others who know the child celebrate and reinforce each of the child's accomplishments.
- *Guided rehearsal and extension of new skills.* Responsible others assist the child in rehearsing and extending newly acquired skills.
- *Protection from harmful displays of disapproval, teasing, or punishment.* Constructive criticism and negative consequences for unacceptable behaviors are used.
- *A rich and responsive language environment.* Adults provide a predictable and understandable environment for communication. Spoken and written language are used to convey information, provide social awards, and encourage the learning of new material and skills.

Source: C. T. Ramey and S. L. Ramey, 1992.

## Behavioral Treatments

As noted earlier, for many years the way to deal with problems faced by persons with ID was to isolate them from society by placing them in institutions or separate schools, a practice that curtailed their ability to interact with typically developing peers. Behavioral interventions first emerged in the context of these restricted settings and were initially seen primarily as a means to control or redirect negative behaviors, such as aggression or self-injury.

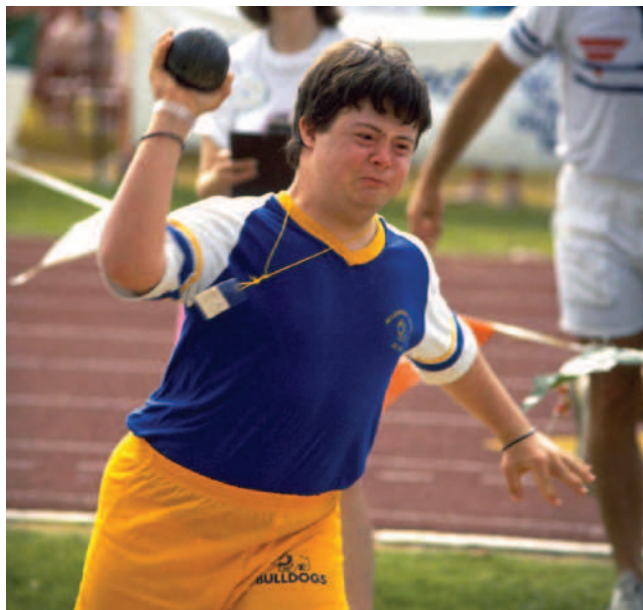
Through the efforts of concerned behavioral therapists, important principles were established concerning the implementation of behavioral methods with children and other persons who are unable to provide fully informed consent. The Association for Behavior Analysis (ABA) Task Force stipulated that each individual has the right to the least-restrictive effective treatment, as well as a right to treatment that results in safe and meaningful behavior change (Van Houten et al., 1988). These efforts, coupled with continued input from parents and educators, led to a greater emphasis on positive methods for teaching basic academic and social skills in both schools and communities to help children and adolescents with intellectual disability adapt in the most normal fashion.

Vanessa's treatment plan typifies how several important behavioral methods are successfully applied. Language training often is considered a fundamental starting point for teaching more advanced skills to children with intellectual disability, and behavioral methods are well suited for this purpose (Matson, Matson, & Rivet, 2007; van der Schuit et al., 2011). The plan developed for Vanessa offers a useful example of how these methods are applied. Vanessa participated in one-to-one therapy sessions during which she was reinforced (by edibles and praise) for emitting sounds that imitated the therapist's sounds. The speech therapist used a *shaping* procedure that began by forming a list of responses (such as "ge," "ga," "oh") that were progressively more similar to the target response (in this case, the word go). After Vanessa mastered the first sound, she was reinforced only for attempts at the next sound on the list, and so on, until the desired sound or word was gradually shaped.

To encourage her speech sounds and simple words to become functional speech and language, the therapist taught Vanessa to imitate the names of pictures shown to her. If she said the name of the picture, such as "dog," within a few seconds, she received social rewards and, if necessary, tangible rewards such as candy. As Vanessa became more adept at naming the pictures, the therapist began to use some of the trained words in response to questions he would pose, such as "What is this?" Gradually, Vanessa's mother and father were brought into the sessions with the therapist to begin asking her similar questions and promoting her use of functional speech. As her speech grew, new words and short sentences were introduced—ones that would be of most use to Vanessa on a daily basis at home, at the cafeteria, and when asking to use the bathroom.

Vanessa's behavior during mealtimes also presented considerable problems for her parents. She had difficulty getting food onto her fork or spoon, so her parents were taught to use simple methods of *modeling* and *graduated guidance* to assist. After demonstrating how to hold a spoon, they would show her how to pick up her food and bring it to her mouth. They carefully demonstrated each step involved, from dipping the spoon to placing it in the mouth, each time praising her for her attempts. As required, they would guide her hand to show her how each step was done.

Unfortunately, without much warning, Vanessa would sometimes throw or spit her food, so her parents were also taught how to respond to such outbursts. Their first attempt to stop this problem was to remove her food for half a minute or so. If this tactic did not settle the behavior, or if she became more aggressive, they used time-out from reinforcement. They provided a short reprimand ("Don't throw food!")



Bob Daemrich/The Image Works

Social and sports events are an important way of fostering independence, social competence, and self-esteem in persons with intellectual disability.

and told her why she was in time-out. Without ceremony, they turned her chair into the corner for about a minute. At the first sign of settling her behavior, they turned Vanessa around in her chair to face them and returned to a positive, guided method of helping her to learn to feed herself.

In addition to their training in basic skills to promote language and readiness to learn, many older children and adolescents with ID benefit from training in specific social skills to promote their integration into regular classrooms and other activities. As mentioned previously, individuals with intellectual disability have various degrees of difficulty in communication, self-control, anger management, correct recognition and labeling of affect in others, social problem solving, and a host of other interpersonal limitations that often lead to victimization by peers (Fisher, Moskowitz, & Hodapp, 2013).

Tailored to each student's individual needs, social skills training uses positive reinforcement strategies to teach and reward important interpersonal skills such as smiling, sharing, asking for help, attending, taking turns, following directions, and solving problems (Kemp et al., 2013). Peers without disabilities also can be taught effective ways to interact socially with children with intellectual disability, a method known as social inclusion. This method is successful in increasing the quantity and quality of interactions between children with disabilities and their peers without disabilities, and it promotes the development of friendships (Harada et al., 2011; Siperstein et al., 2009).

## Cognitive–Behavioral Therapy

The same theories that led to the development of cognitive therapy techniques for children with other types of learning and behavior problems generally apply to children with intellectual disability as well. These methods are most effective for children with some receptive and expressive language skills—like the skills Vanessa acquired after careful and prolonged training through the use of visual and physical prompts. Once children are able to follow adult verbal directives and to verbally describe their own actions, they are in a position to benefit from verbal self-regulation and behavioral-inhibition training programs (Cobb et al., 2006; Bexkens et al., 2014). Self-instructional training is most beneficial for children who have developed some language proficiency but still have difficulty understanding and following directions. **Self-instructional training** teaches children to use verbal cues, initially taught by the therapist or teacher, to process information, to keep themselves on task (“I’m not gonna look. I’m gonna keep working.”), and to remind themselves of how to approach a new task (“What do I have to do here? First, I have to. ...”).

Education of children with intellectual disability has been plagued by the fact that specific cognitive skills can be taught, yet children often lack the higher-order (metacognitive) capabilities to apply these skills in new situations. Children with intellectual disabilities use fewer, simpler, and more passive cognitive strategies in memory and learning task situations than do children without such disabilities (Hodapp et al., 2011). Therefore, instructional methods developed to assist the average or above-average learner are often ineffective. Coupled with this concern is the continued reliance on verbal instruction to teach behavioral and cognitive skills to normal and exceptional children.

Language problems may require verbal instructional techniques to be replaced by methods that capitalize on a particular child's strongest learning channels. These methods often rely less on verbal, symbolic representation and more on perceptual, visually oriented techniques such as modeling and picture cuing.

Specific learning techniques also can be used to improve memory and learning. For example, in addition to being taught various basic math skills, students learn to identify the type of math problem they confront and then to choose the appropriate strategy for solving the problem. The first goal of this training is to teach the child to be *strategical*—to use cognitive strategies—and then to be *metastrategical*—to make discriminations regarding how to apply different strategies in different situations. This method has been successful in teaching children with learning difficulties a range of adaptive skills, such as math and language (Hay et al., 2007).



## Family-Oriented Strategies

The presence in the family of a child with intellectual disability is a challenge, but it is not an insurmountable problem. Families are central to the development of any child, but care of a child with intellectual disability involves an expanded commitment of time, energy, and skills. The needs of the child often dictate that family members participate in various community services and educational systems with which they may be quite unfamiliar. In the end, the majority of parents of children with intellectual disability come to see their child as a positive contributor to their family and quality of life, although the family experiences a higher-than-average level of stress and parental depressive symptoms (Gerstein et al., 2009; Hodapp & Dykens, 2012). This view of the child as a positive contributor is reassuring, given the finding that individual services provided for the child are usually more effective when family members are active participants (AAIDD, 2010).

What exactly do the parents of a child with intellectual disability need to be most effective? Family members need support and guidance, access to necessary services, opportunities for a short caregiving break, such as a weekend off, and the availability of goal-oriented counseling to cope with the practical difficulties of demanding caregiving tasks, such as sleep disruption, marital discord, and restricted leisure and social opportunities. Short-term, problem-focused behavioral therapy for the parents is one of the most successful approaches (Bagner & Eyberg, 2007). Each family's treatment goals are developed individually; then parents are provided with solutions matched to their needs. For example, parents may be taught assertiveness skills or behavior-management techniques (discussed in the next paragraph). In some instances, the solutions involve obtaining new resources from teachers or day-care staff or from neighbors and extended family.

Parent training has been widely used to assist parents of children with intellectual disability. As opposed to the focus of many other applications of parent training, when the child has intellectual disability the primary focus on behavior change is skill acquisition rather than reduction of behavior problems (Bagner & Eyberg, 2007). The parents' roles as primary teachers often continue well past the normal childhood years, so parent training often entails a relevant focus on development to prepare the family to tackle each new challenge.

There are three critical, but not exclusive, periods during the family life cycle in which parent training and family counseling are most beneficial. The first occurs during the child's infancy and toddlerhood, when parents are coming to terms with the child's disability

and may need assistance in learning ways to provide adequate stimulation of early language formation and similar developmental skills. A second critical time is during the preschool and school years, when parents often want to know more about the best way to teach their child basic academic and social skills. Intensive programs, which demand a considerable amount of the parents' time, are usually best suited for the preschool years, when the family is most focused on child developmental issues (Brown et al., 2008). Finally, parental concerns resurface during the child's emergence into young adulthood. At this age, the child is no longer eligible for funded schooling, and new issues of housing, employment, relationships, and financial planning associated with independent living become concerns.

Many children with intellectual disabilities attend regular schools. The **inclusion movement** (and the Individuals with Disabilities Education Improvement Act) gives children with disabilities the option of being educated in regular classroom settings, regardless of the severity of the disability. The school curriculum must be adaptable to meet the individual needs and abilities of children with intellectual disability. For example, because children with Down syndrome often have strong visual short-term memories, a visually based approach to teach them how to read has been determined to be more effective than traditional phonetic approaches (Hazlett et al., 2011). Furthermore, this movement has raised anew the issue of how persons with disabilities are perceived and treated by professionals and peers.

Some children and adolescents with intellectual disability benefit from **residential care**, or out-of-home placement, which also carries with it unique responsibilities of family members. Residential care services are seldom a full replacement for the love and attention of the family, yet they may be necessary and beneficial under some circumstances, such as aggressive behavior of the child or the need for specialized language or social skills training that cannot be provided adequately in the home or regular school setting. Residential care (also known as "respite care") ranges from part-time care, when the child returns home each evening or weekend, to full-time care, when home visits are less frequent. Some residential programs may serve only a few children at a time, much like a group home; others may be large, multidisciplinary tertiary care facilities serving persons of all ages with various disabilities.

Regardless of the structure of the residential program or respite services, research has determined that family involvement plays a critical role in children's



adaptation to and benefit from such settings. Facilities that offer ways to promote family involvement, such as weekend visits and participation in classroom activities, strengthen the important attachment between children with intellectual disability and their families (Grant, Ramcharan, & Flynn, 2007). Because one goal of residential care is often to enable the child to live at home or in a family-like community setting, efforts to maintain family involvement are invaluable (Chan et al., 2012).

## Section Summary

### Prevention, Education, and Treatment

- Intervention efforts are most successful when offered at the earliest point in time, especially through the preschool years.
- Interventions for children with intellectual disability are matched to the child's individual needs and abilities, and are integrated with the family, school, and community.
- Successful interventions often include behaviorally based training and educational components that teach specific skills and reduce undesired behavior.

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# 6

## Autism Spectrum Disorder and Childhood-Onset Schizophrenia

*It wasn't just that she didn't understand language. She didn't seem to be aware of her surroundings. She wasn't figuring out how her world worked, learning about keys that fit into doors, lamps that turned off because you pressed a switch, milk that lived in the refrigerator ... If she was focusing on anything, it was on minute particles of dust or hair that she now picked up from the rug, to study with intense concentration. Worse, she didn't seem to be picking up anyone's feelings.*

Catherine Maurice, mother of a child with autism (1993a)

### CHAPTER PREVIEW

#### AUTISM SPECTRUM DISORDER (ASD)

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#### DSM-5: DEFINING FEATURES OF ASD

ASD Across the Spectrum

#### CORE DEFICITS OF ASD

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## AUTISM SPECTRUM DISORDER (ASD)

THE COMPELLING DESCRIPTION THAT begins this chapter, from a mother talking about her 2-year-old daughter offers a first glimpse into the mystery of autism, perhaps the most captivating and telling of all childhood disorders. **Autism**, or **autism spectrum disorder (ASD)**, is a complex neurodevelopmental disorder characterized by abnormalities in social communication and unusual behaviors and interests. ASD touches every aspect of the child's interaction with his or her world, involves many parts of the brain, and undermines the traits that make us human—our social responsiveness, ability to communicate, and feelings for other people.

### Description and History

Imagine yourself the parent of an infant or toddler who won't cuddle, look into your eyes, or respond to your affection or touching. Unlike other children, who are social beings from the start, your child doesn't seem to form a loving relationship with you as you interact with him. In fact, he seems incapable of forming a normal relationship or communicating with anyone. As he grows older, he rarely speaks. When he does speak, he talks in unusual ways, for example, by parroting what you say to him or blurting out seemingly meaningless phrases, such as "Dinosaurs don't cry." Your child doesn't use facial expressions or gestures to communicate his needs or to tell you how he feels—no smiles, no nods, no head shakes, no holding up toys for you to look at. Nor does he seem to understand the smiling faces that you and others make as you try to engage him socially. Your child shows little interest in sharing pride or pleasure with you or anyone else. Over the first few years of life, he becomes more and more isolated. He becomes caught up in his own little world of rituals and interests, and if these are interrupted, he becomes extremely upset. Something is seriously wrong. Naturally, you are concerned and have many questions.

In this chapter, we address a number of critical questions asked by families of children with ASD (Interagency Autism Coordinating Committee [IACC], 2011). These include: When should I be concerned? How can I understand what is happening? What caused this to happen? Which treatments will help? Where can I turn for services? What does the future hold for my child as a teenager and adult? As you read this chapter, you might want to keep these questions in mind and consider how you would respond to them as you learn more about ASD.

ASD is a DSM-5 disorder characterized by significant and persistent deficits in social interaction and communication skills and by restricted, and repetitive patterns of interests and behaviors (APA, 2013). As we shall see, ASD



M. Scott Brauer/Alamy

Children with ASD behave in unusual and frequently puzzling ways, like exhibiting odd interests in the sensory aspects of the environment, atypical facial expressions, and a lack of interest in others.

is not one particular thing. Although all children with ASD display its core features, children vary widely in the form, pervasiveness, and severity of their symptoms, abilities, associated conditions, and needed supports.

Although *childhood-onset schizophrenia* (COS) is not on the autism spectrum in DSM-5, we conclude the chapter with a separate section about this disorder. Historically, autism and COS were thought of as a single condition. Subsequently, they came to be viewed as distinct disorders, with different family histories, outcomes, and associated features (Fitzgerald, 2014). However, findings from recent studies using newer research methods suggest that there may be more overlap between autism and COS than previously thought, and the possibility that the two are linked may need to be re-examined (de Lacy & King, 2013; Sullivan et al., 2013).

Most people have seen or heard the frequent media messages about ASD. Although interest in ASD is at an all-time high, ancient stories suggest that children with this disorder have been around for centuries. For example, stories of elfin children, left in the place of real human babies who were stolen away by the "little people," describe these "changelings" as strange and remote, much like a child with ASD (Wing & Potter, 2002). The factual history of autism begins in 1943, when psychiatrist Dr. Leo Kanner described 11 children who, in the first few years of life, displayed more attention to objects than to people, avoided eye contact, lacked social awareness, had limited or no language, and displayed stereotyped motor activities. They also exhibited **preservation of sameness**, which is an anxious and obsessive insistence on the maintenance of sameness in daily routines and activities, which no one but the child may disrupt. Their parents described them as "acting as if people weren't there" and "oblivious to

everything around him” (Kanner, 1943, p. 242). Around the same time, Dr. Hans Asperger, an Austrian doctor, described a milder form of this disorder that became known as *Asperger’s disorder* (Asperger, 1944). Because of the intense interests of the children he studied and their lengthy descriptions of these interests, he compared them to “absent-minded professors.” Interestingly, Dr. Asperger’s own preoccupations, interests, and social aloofness suggest that he himself may have had symptoms of the disorder (Lyons & Fitzgerald, 2007).

Kanner (1943, 1944) used the term *early infantile autism* (*autism* literally means “within oneself”) to describe these children. There is, said Kanner, “an extreme autistic aloneness that, whenever possible, disregards, ignores, shuts out anything that comes to the child from outside” (1943, p. 242). He described the parents of the children he observed as highly intelligent and obsessive people who were cold, mechanical, and detached in their relationships—called the “refrigerator parent” (who, according to Kanner, just happened to “defrost enough to produce a child”). Although he clearly saw autism as an inborn deficit, he also planted the seeds for the psychoanalytic view that “the precipitating factor in infantile autism is the parent’s wish that his child should not exist” (Bettelheim, 1967, p. 125). This early view that autism resulted from a child’s defensive withdrawal from an intellectual, coldhearted, and hostile parent is unsupported. Children with autism have not withdrawn from reality because of a mental disorder—rather, they have failed to enter reality because of widespread and serious disturbances in their development. Autism is now recognized as a strongly biologically based lifelong neurodevelopmental disorder that is present in the first few years of life (Rutter, 2013).

Children with ASD behave in unusual and frequently puzzling ways. They may squeal with excitement at the sight or sound of a wheel spinning on a toy car, yet ignore or have a full-blown tantrum if someone attempts to play with them. At times they may look through you as if you are a pane of glass, but other times stare directly into your face or tug on your arm to lead you to something they want. When you speak to a child with ASD, she may act as if she is deaf, but then quickly turn in the direction of the faint crinkling sound of a candy wrapper in another room.

Some children with ASD display extreme fear or avoidance of noisy or moving objects such as running water, swings, elevators, battery-operated toys, or even the wind. One child was so afraid of a vacuum cleaner that he would not go anywhere near the closet where it was kept. When someone used it in the house, he ran to the garage and covered his ears. Yet the same child was oblivious to the sounds of traffic roaring by him on a dangerous freeway. Although children with ASD fear

many things, they are also attracted to and preoccupied with other objects and activities—for example, a rotating fan or a flickering light. These children often develop unusual attachments or reactions to odd objects, such as a rubber band, a piece of sandpaper, or a string.

Other children with ASD may have extraordinary perceptual abilities—for example, identifying the brand of a vacuum cleaner by its sound alone. These perceptual abilities may result in distress in response to minor changes in the environment—shown, for instance, by screaming, kicking, and lashing out at others if a chair is moved from its usual location. They may spend hour after hour playing in a corner of their room, engaged in stereotyped or repetitive motor activities, such as rocking, lining up objects, or repeatedly flapping their hands and fingers as they flip through pages of a magazine. Rather than seeing the big picture, children with ASD are much more likely to fixate on a minuscule object or event in their world, such as a tiny spot on their shirt. Whereas most of us see the hugeness of trees in the forest, a child with autism is more likely to fixate on one pine needle.

## Section Summary

### Autism Spectrum Disorder

- ASD is a DSM-5 disorder characterized by significant and persistent deficits in social communication and interaction skills and restricted, repetitive patterns of behaviors, interests, or activities.
- Historically, autism and childhood-onset schizophrenia (COS) were lumped together as a single condition; now recognized as separate disorders, recent research suggests that there may be more overlap of the two disorders than was previously thought.
- ASD has increasingly come to be recognized as a biologically based lifelong neurodevelopmental disorder that is present in the first few years of life.
- Children with ASD behave in unusual and frequently puzzling ways.
- They may spend hours engaging in stereotyped or repetitive motor activities or focus on minuscule details of their world rather than their entire environment.

## DSM-5: DEFINING FEATURES OF ASD

DSM-5 criteria for ASD are presented in Table 6.1. As shown, the core features of ASD are represented by two symptom domains: (1) social communication and social interaction and (2) restricted, repetitive patterns of behavior, interests, or activities. These domains are well supported by research (Guthrie et al., 2013). In order to



receive a diagnosis of ASD the child must display symptoms in *both domains*. The symptoms must also be persistent, occur in multiple settings, and be present early in development. Those who display only deficits in social communication and interaction but not restricted and repetitive behaviors would receive a diagnosis of Social (Pragmatic) Communication Disorder, a newly designated type of language disorder (see Chapter 7).

**Social Communication and Interaction.** DSM-5 lists three symptom types in this category, with all three required for an ASD diagnosis: (1) deficits in

social–emotional reciprocity; (2) deficits in nonverbal communication behaviors used for social interaction; and (3) deficits in developing maintaining, and understanding relationships. Table 6.1 includes specific examples of symptoms for each type.

**Restrictive and Repetitive Behaviors.** Four types of symptoms are specified in this category, with *at least two* types required for an ASD diagnosis: (1) stereotyped or repetitive motor movements, use of objects, or speech; (2) insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal

**TABLE 6.1 | Diagnostic Criteria for Autism Spectrum Disorder**

	DSM-5
<p><b>(A)</b> Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative not exhaustive):</p> <p>(1) Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.</p> <p>(2) Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.</p> <p>(3) Deficits in developing, maintaining and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.</p> <p><b>Specify current severity based on social communication impairments and restricted, repetitive patterns of behavior.</b></p> <p><b>(B)</b> Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive):</p> <p>(1) Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).</p> <p>(2) Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).</p> <p>(3) Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).</p> <p>(4) Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).</p> <p><b>Specify current severity based on social communication impairments and restricted, repetitive patterns of behavior.</b></p> <p><b>(C)</b> Symptoms must be present in early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).</p> <p><b>(D)</b> Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.</p> <p><b>(E)</b> These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.</p> <p><b>Note:</b> Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or Pervasive Developmental Disorder, Not Otherwise Specified, should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.</p> <p><i>Specify if:</i></p> <p>With or without accompanying intellectual impairment</p> <p>With or without accompanying language impairment</p> <p>Associated with a known medical or genetic condition or environmental factor</p> <p>Associated with another neurodevelopmental, mental, or behavioral disorder</p> <p>With catatonia</p>	

Source: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. American Psychiatric Association.

behavior; (3) highly restricted, fixated interests that are abnormal in intensity or focus; and (4) hyperreactivity or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment. Table 6.1 includes examples of specific symptoms for each type.

DSM-5 also specifies that a *severity* rating of current symptoms be made for each domain. Severity ratings reflect the extent to which the symptoms interfere with the child's functioning. More severe deficits are rated as requiring greater levels of support, as follows: requiring support (level 1); requiring substantial support (level 2); and requiring very substantial support (level 3). Severity level ratings should help in guiding the types of programs and services needed to help the child and family, but since symptom severity may fluctuate across situations and over time, these ratings are not intended to be used in determining the child's eligibility for services.

DSM-5 criteria for ASD provide a relatively new way of looking at autism. In light of this, we highlight several key changes in ASD criteria from DSM-IV to DSM-5 and why they were made. First, the DSM-5 organization of symptoms into two domains represents a change from DSM-IV, in which deficits in social interaction and those in communication were viewed as separate domains along with the third domain of restricted and repetitive behavior. However, research does not support viewing social interaction and communication as distinct domains (Frazier et al., 2012), and clinicians have difficulty separating the symptoms of each. For example, is difficulty engaging in two-way conversation a deficit in social reciprocity or in communication skills? (Klinger et al., 2014)

Second, DSM-5 eliminated all previous subtypes of ASD (e.g., Autistic Disorder, Asperger's Disorder, Pervasive Developmental Disorder, Not Otherwise Specified [PDD-NOS]) and substituted a single overarching category—ASD. One reason for doing this was to increase the consistency of diagnosing ASD. In DSM-IV, the criteria for autism subtypes were not well conceptualized or defined. Although clinicians could readily distinguish ASD from other neurodevelopmental disorders (e.g., intellectual disability, specific learning disorder), distinctions between subtypes were unreliable and inconsistent and were related more to where the diagnosis was made, the child's level of intellectual ability, and co-occurring conditions, than to the child's ASD symptoms (Lord et al., 2012). A second reason for using a single ASD category rather than subtypes was a recognition that changes in developmental level can lead to changes in symptom presentation. Although an ASD diagnosis is stable after 2 years of age, children often changed diagnosis from one subtype to another because of age-related changes in their social and cognitive skills (van Daalen et al., 2009). Thus, rather than representing true change, these

age- and skill-related fluctuations in diagnosis are best viewed as variability within a single disorder.

The elimination of subtypes in DSM-5 does not mean that these distinctions are unimportant. As we have noted, ASD is not one thing, and there is a great deal of heterogeneity within the disorder. What is important is having a classification system that can address this variability (Rutter, 2013). To do this, DSM-5 includes the use of *specifiers* to indicate when other important conditions, such as intellectual and/or language impairment, are present and whether the child's ASD is associated with a known medical or genetic condition or with another neurodevelopmental, mental, or behavioral disorder. This provides a more detailed description of the full range and severity of the child's problems, which is critical to developing an appropriate treatment plan.

There is support for the conceptual validity of using a single ASD category. However, many individuals with ASD, their families, advocacy groups, and clinicians suggest that fewer individuals will be diagnosed, especially those with milder symptoms and normal intellectual abilities who were previously diagnosed with Asperger's disorder. Therefore, the use of DSM-5 could result in reduced eligibility for services for these children. Although research to date suggests that most children diagnosed with Asperger's disorder will receive a diagnosis of ASD using DSM-5 criteria (Huerta et al., 2012), it is not yet known whether this will be the case in clinical practice. The possibility that some individuals could be disadvantaged by changes in DSM-5 criteria will require further monitoring and evaluation (Kent et al., 2013).

## ASD across the Spectrum

When we hear the term *autism*, or *ASD*, we may think of Raymond, the main character in the movie *Rain Man*, or Temple Grandin (who was the subject of an HBO film), a high-functioning and insightful woman with ASD who is a Professor of Animal Sciences, one of the top scientists and consultants in the humane livestock handling industry, and a leading advocate for persons with ASD (Grandin & Panek, 2013). Although some individuals with ASD display the abilities and special talents that are often portrayed in the movies, most do not.

ASD is defined as a **spectrum disorder** because its symptoms, abilities, and characteristics are expressed in many different combinations and in any degree of severity (Lai et al., 2013). Thus, ASD is not an “all or nothing” phenomenon. At one end of the spectrum we may find a child who is mute, crouched in a corner of his room, spinning a paper clip over and over again for hours; at the other end of the spectrum is a researcher who is also able to hold a corporate job—as long as



Vera Anderson/WireImage/Getty Images

Dr. Temple Grandin (left) with award-winning actress Clare Danes, who portrayed her in the highly acclaimed film, *Temple Grandin*.

it doesn't require interacting with customers. Although children with ASD vary widely in intellectual ability, language, age, socioeconomic (SES), gender, and race, the majority of them display most of the core features of the disorder (Mayes & Calhoun, 2011). Nevertheless, despite the similarities in their core profile, they show enormous variability in the expression and severity of their symptoms. This variability among children with ASD applies widely across both their social communication and behavioral impairments (Jones & Klin, 2009).

Children with ASD not only differ widely in their core symptoms, but they may also, in varying degrees, display features not specific to ASD—most commonly, intellectual disability and epilepsy. Thus, children with the same diagnosis of ASD can be vastly different from one another in their intellectual ability, severity of language problem, and degree of progress. To illustrate this key point, let's compare and contrast two children, Lucy and John, both diagnosed with autism.

## LUCY

### ASD with Intellectual Disability

Lucy's parents watched her development right from the start because there had been so many difficulties during pregnancy and delivery. Labor began 3 weeks early and lasted 23 hours, so that forceps were needed to assist the delivery. Lucy had to have oxygen to revive her, spent 4 days in the special-care unit, and received treatment for jaundice.

Indeed, it seemed that everything in Lucy's development was troubling. For example, she was always too distressed to feed or she fed so ravenously and quickly

that she vomited. Nights were no better—she took hours to settle and always woke early. By her first birthday she had only just started to sit up, and was still not crawling. The family physician said that Lucy was indeed delayed in her development. At 14 months, she began to crawl (6 months is typical), and at 19 months she pulled herself up on the furniture (most children do this at around 12 months); she made little progress in other areas.

At 2 years of age, Lucy still did not use any words, and was unresponsive to her parents' attempts to engage her in simple games like peek-a-boo. At 30 months, she started to walk (most children walk by 14 months). However, her main sounds were a strange clicking noise made with the back of her tongue and a variety of screams. She still seemed oblivious to people around her (including her parents) unless they had something she wanted. A pediatrician thought the delay in her development might be due to the difficulties with her delivery and suggested that Lucy be checked every 12 months.

She loved to play with a particular blue and red rattle that she would shake or spin for hours. Once she had the rattle she did not look at anyone, and if someone tried to take it from her she screamed and banged her head on the floor. Understandably, this devastated her parents. Lucy took great interest in odors, sniffing food, toys, clothes, and (to her parents' embarrassment) people. She also liked to feel things, and often tried to stroke stockings on women's legs, even those of complete strangers. If they tried to stop her, she had a tantrum.

When Lucy was 4 years old, her pediatrician suspected she had ASD, and referred her to a psychologist for a detailed assessment. The diagnosis was confirmed, and her parents were told that Lucy was generally delayed in her development. They were heartbroken, but they felt that finally Lucy would get the help she desperately needed. (Autism: The Facts, by Baron-Cohen and Bolton, (1993) pp. 1–8.)

## JOHN

### ASD with Average Intellectual Ability

John was born after a normal pregnancy and delivery. As an infant, he was easy to feed and slept well. He seemed happy and content to lie in his crib for hours. He sat unsupported at 6 months (which is in the normal range), and soon after, he crawled. His parents saw him as independent and willful. However, his grandmother thought John lacked interest in people.

John walked on his first birthday (in sharp contrast to Lucy, who did not walk until 30 months of age); yet during his second year he did not progress as well as

(continues)



(continued)

expected. Although he made sounds, he did not use words. Indeed, his ability to communicate was so limited that even when he was 3 years old, his mother still found herself trying to guess what he wanted (as if he were a much younger child). Occasionally he would grab hold of her wrist and drag her over to the sink, yet he never said anything like “drink.”

At this time his parents also became concerned about John’s extreme independence. Even when he fell down and hurt himself, he would not come to his parents for help. He never became upset when his mother had to go out and leave him with a neighbor or relative. In fact, he seemed to be more interested in his toy bricks than in people. He spent hours lining the bricks up in exactly the same way and in precisely the same sequence of colors.

After his third birthday his parents became increasingly concerned, despite reassurances from their doctor. John used no words and showed no interest in other children. He did not wave bye-bye or show any real joy when they tried to play peek-a-boo. John always wriggled away from his mother’s cuddles and only seemed to like rough-and-tumble play with his father. His mother worried that she had done something wrong, and she felt depressed, rejected, and guilty.

When John was 3.5 years old, he was referred to a child psychiatrist, who told his parents that John had ASD, but added that his abilities in spatial tasks (such as jigsaw puzzles) suggested normal intelligence in these areas. Although it was still too early to tell how John would progress, there were indications he would do better than most children with ASD. John received speech therapy, and a psychologist helped his parents plan ways of encouraging communication and reducing temper tantrums.

At age 4, John suddenly began to speak in complete sentences. However, his speech was quite unusual. For example, he often repeated back word for word whatever his parents had said. If they asked him “Do you want a drink?” he would say “you want a drink” in reply. At other times, John made rather surprising remarks. For instance, he would say “You really tickle me” in a tone of voice exactly similar to that of a family friend who had first used the expression some days before. However, his use of this phrase, and most of his speech, was usually inappropriate to the setting, and lacked any clear meaning. *Autism: The Facts*, by Baron-Cohen and Bolton, (1993) pp. 1–8.

Lucy and John both display the defining features of ASD. They failed to develop normal two-way social relationships and communication in the first few years of life, and displayed repetitive interests and preoccupations. When Lucy was young, her parents described

her as “living in a glass bubble.” Extreme social unresponsiveness is typical of many children with ASD. John is more socially outgoing and talkative when he approaches others; however, his efforts at social contact are repetitive and unnatural. His abnormalities in communication are less obvious than his social deficits, and consist of speaking in one-sided and stereotyped phrases. In contrast, Lucy is seriously lacking in her ability to communicate and is silent most of the time (Baron-Cohen & Bolton, 1993).

In addition to their abnormalities in social and language development, John and Lucy both display ritualistic behavior. Lucy checks the location of little pieces of thread that she has tied on all the chairs in her house, and John insists on taking exactly the same route to school each day. John and Lucy also have repetitive interests: John likes nothing better than counting lampposts, while Lucy, if allowed to do so, watches the same video over and over again. Both children can spend hours absorbed in nothing but these narrow interests, and these obsessions may lead to other problems. For example, John or Lucy may scream intensely if even a minor change occurs in one of their daily routines (Baron-Cohen & Bolton, 1993).

Despite the many similarities shown by John and Lucy, their stories also show how children with ASD can be quite different from one another. Three critical factors contribute to these differences:

- ▶ *Level of intellectual ability:* Intellectual ability ranges from profound disability to above-average intelligence. John is of average intelligence, whereas Lucy has a severe intellectual disability. Because of her intellectual disability, Lucy was slow to develop in all areas. As a result of Lucy’s limited overall level of functioning, she shows a much narrower range of interests and activities than John shows.
- ▶ *Severity of their language problems:* John speaks quite a lot, whereas Lucy is mute. Children with ASD can fall anywhere between these two extremes.
- ▶ *Behavior changes with age:* Some children make little progress, whereas others develop speech or become more outgoing. When significant gains are made, they are usually made by children like John, who have average or above-average intelligence and acquire speech at a young age.

## Section Summary

### DSM-5: Defining Features of ASD

- In DSM-5, autism or ASD is a severe neurodevelopmental disorder with an onset in early development, which is



characterized by significant and persistent deficits in social interaction and communication skills and by stereotyped patterns of behaviors, interests, and activities.

- ASD is a spectrum disorder, which means that its symptoms and characteristics are expressed in many different combinations and in any degree of severity.

## CORE DEFICITS OF ASD

Despite 70 years of research, considerable debate continues today about the core deficits of ASD. Most likely, ASD consists of several deficits, not one primary deficit, that affect the child's social-emotional, language, and cognitive development (Dawson & Toth, 2006). As we discuss each core deficit of ASD, keep in mind that these aspects of development are interconnected—they do not develop in isolation. For example, children with ASD may display a decreased ability to regulate levels of alertness, which in turn is related to increased deficits in social communication (Keehn et al., 2010).

### Social Interaction and Communication Deficits

#### *Social Interaction Deficits*

Children with ASD experience profound difficulties in relating to other people, even when they have average or above-average intelligence (Pelphrey et al., 2011). From a young age, they show deficits in many skills that are crucial for early social development. Such deficits include the following:

- ▶ a lack of monitoring of the social activities of others;
- ▶ a lack of social and emotional reciprocity;
- ▶ unusual nonverbal behaviors such as using atypical facial expressions, eye-to-eye gaze, body postures, and gestures to regulate social interaction;
- ▶ lack of interest and/or difficulty relating to others, especially other children; and
- ▶ a failure to share enjoyment and interests with others (e.g., Landa et al., 2011; Shic et al., 2011).

They may also display difficulties in imitating others' social behavior, sharing a focus of attention with others, and engaging in make-believe play (Klinger et al., 2014).

Children with ASD have limited social expressiveness and sensitivity to social cues, impaired recognition of complex emotions and mental states in everyday life, and experience little sharing of experiences or emotions with other people. These children have great difficulty integrating the social, communicative, and emotional behaviors that are required when greeting a familiar person. Their lack of understanding of

people as social partners may lead to their treating people as objects, or to directing their actions at the body parts of other people, as when the child attacks a restraining hand rather than the person (Phillips et al., & Riviere, 1995).

Children with ASD display atypical processing of faces and facial expressions (Dawson, Webb, & McPartland, 2005). In processing information about the human face, they may overemphasize one part of the face, such as the mouth, rather than attending to its overall shape or focusing on the eyes as most children do (Joseph & Tanaka, 2003). The child's focus on the mouth rather than the eyes may reflect a tendency to attend to stimuli in which sound and motion co-occur (Klin et al., 2009). They also display deficits in recognizing facial expressions of emotion, particularly in detecting fear. This may be because the identification of fear relies more heavily on the eye region than does other emotions, and individuals with ASD do not look at the eyes as often as others when viewing faces (Boraston et al., 2008). Atypical face processing in individuals with ASD may be related to a less generalized or narrower face detection system, which may also contribute to their reduced social interest (Churches, Baron-Cohen, & Ring, 2012).

Children with ASD display impairments in **joint attention**, which is the ability to coordinate attention to a social partner and an object or event of mutual interest (Mundy & Newell, 2007). Joint attention, which typically emerges between 9 and 14 months of age, involves making a social connection with another person by directing that person's attention to objects or people by pointing, showing, and looking, and by communicating shared interest. Although children with ASD may bring an object to a person or point to an object when they want something done for them, they show little desire to share interest and attention with another person for the sheer pleasure of interaction. Poor quality of eye contact and smiling during parent-infant interactions in the first year of life may be related to deficits in joint attention in the second year of life in children later diagnosed with ASD (Clifford & Dissanayake, 2008). In turn, deficits in joint attention have been found to impede language development in infants with ASD at 20 months and to predict greater problems in language, communication, and social behavior at age 42 months (Charman, 2003; Luyster et al., 2008).

Although it was once thought that children with ASD failed to form a social bond with their parents or that they could not tell the difference between their parents and other adults, research has proved this wrong (Rutgers et al., 2004). Most children with ASD are more responsive to their caregivers than to unfamiliar adults, directing more social behavior and seeking to

be closer to them than to strangers after a brief separation (Dissanayake & Sigman, 2000). In addition, once the children's disoriented and disorganized repetitive motor behaviors are taken into account, children with ASD display slightly lower—but comparable—rates of secure attachment to their mothers than normal controls. When lower rates of secure attachment are found, it is usually in children with lower intellectual ability and greater ASD severity (Naber et al., 2008). Most show a preference for their mother over a stranger, use their mother as a secure base for exploration, and are comforted by their mother when distressed. Importantly, the quality of infant–mother attachment in young children with ASD contributes substantially to the development of the child's play behavior, which is important for the development of social skills (Naber et al., 2007).

Children with ASD do not have a global deficit in their ability to form attachments. Rather, the deficit seems to be in their ability to understand and respond to social information (Rogers, Ozonoff, & Maslin-Cole, 1993). As shown in A Closer Look 6.1, a child with ASD will likely notice when his mother leaves the room and will look for her, both signs of attachment. However, unlike a normal child, he may have little understanding of the event or how to respond in

order to change the situation, making it seem as if he has no attachment. Thus, although children with ASD are attached to their parents, the way they express attachment is unusual and difficult to “read.” As a result, parents may feel that their child is not attached at all, and may feel disheartened by the child's lack of the cuddling, reaching, and responsiveness that typically accompany attachment behavior.

It is important to note that the Strange Situation, a traditional assessment of attachment, conceptualizes deficits in social functioning in relation to the concept of security/insecurity, which may not be relevant to understanding the deficits in social functioning that characterize most children with ASD. As a result, questions have been raised regarding whether the Strange Situation is a useful way to evaluate the unusual qualities of social relationships associated with ASD (Rutter, Kreppner, & Sonuga-Barke, 2009).

In addition to their social difficulties, children with ASD have difficulty processing emotional information contained in body language, gestures, facial expressions, or the voice. Preschool-age children with ASD do not look for or attend to the emotional cues provided by other people. In contrast to other children of the same mental age, they may sort pictures of people according

## A CLOSER LOOK 6.1

### Attachment in Children with ASD

This young boy with ASD notices that his mother has left the room. He wanders around the room looking for her, but there's essentially no change in his expression. He doesn't seem to know what to do to change the event.



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A child his age without ASD is likely to react like this:



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This child's facial expression changes in 10 seconds from “Oh no, she's not really leaving me” to “You gotta be kidding” to “Oh my god, she's gone.” He's crying, but as soon as his mother returns, he's comforted and he's fine.

Source: Behavior Disorders of Childhood, produced by Alvin H. Perlmutter, Inc. in association with Toby Levine Communications.

to the type of hat a person is wearing rather than by emotional expressions (Weeks & Hobson, 1987).

Children with ASD also have difficulties in understanding emotional information, and their own bodily expressions of emotion—often characterized by limited spontaneous use of expressive gestures and bizarre, rigid, or mechanical facial expressions—are very different from those of typical children (Loveland et al., 1994; Trevarthen & Delafield-Butt, 2013). They also have difficulties in recognizing emotions from the body movements of others (Atkinson, 2009). Thus, children with ASD both process and express emotional information in unusual ways.

### Social Communication Deficits

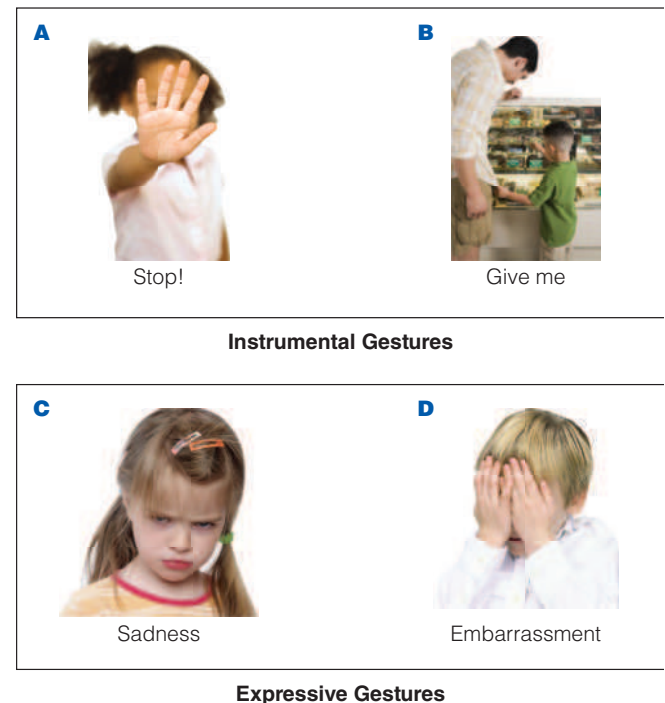
*For two years the mother of a young man with autism would correct her son by saying, “Don’t do that. It doesn’t look normal.” The son would stop the inappropriate behavior. Then she would add, “You want to look normal, don’t you?” The son would say, “Yes.” Then one day it occurred to the mother to ask her son, “Do you know what normal means?” “Yes,” he said, and the mother was impressed. She pushed for his definition. He said, “It’s the second button from the left on the washing machine.”*

—From *Our Old Ways Just Aren’t Working*: Donnellan by Karin Melberg Schwier, p. 8, Saskatchewan Association for Community Living, Dialect, February 1988

Most children have passed predictable milestones on the path to learning language by age 3; one of the earliest is babbling. By the first birthday, a typical toddler says words, turns when he hears his name, points when he wants a toy, and when offered something he does not like, makes it clear that the answer is “no.” In contrast, children with ASD display serious abnormalities in communication and language that appear early in their development and persist (Mitchell et al., 2006). Atypical early vocalizations are a sensitive indicator of a heightened risk for later ASD symptoms in infants with a family history of ASD (Paul et al., 2011). Even before children learn to talk, they have at their disposal a rich array of facial expressions, vocalizations, and gestures to communicate their needs, interests, and feelings. One of the first signs of language impairment is the inconsistent use of these early preverbal communications. For example, a typical child with ASD may point to a stuffed animal she wants that is out of reach. By doing this, she is demonstrating the ability to use **protoimperative gestures**—gestures or vocalizations that are used to express needs. However, this child will fail to use **protodeclarative gestures**—gestures or vocalizations that direct the visual attention of other people to objects of shared interest.

The primary purpose of protodeclarative gestures is to engage other people in interaction; for example, a toddler excitedly points to a dog to direct her mother’s attention to this fascinating creature that she sees. The use of protodeclarative gestures requires shared social attention and an implicit understanding of what other people are thinking—abilities that are lacking in children with ASD. They are also missing other declarative gestures, for example, the *showing gesture*, which young children without ASD use to show someone else something of interest, such as a newly discovered object (or a handful of shaving cream; see A Closer Look 6.2).

As many as half of all children with ASD do not develop useful language; this includes some children who begin to speak and then regress in their speech development, usually between 12 and 30 months of age. Children with ASD with no speech or only limited speech rely on primitive forms of communication, such as pulling their mother’s hand in a desired direction or bringing her a box to be opened. Children with ASD may use *instrumental gestures* to get someone else to do something for them immediately, but they fail to use *expressive gestures* to convey feelings (Frith, 2003). These two types of gestures are illustrated in ● Figure 6.1.



● **FIGURE 6.1** | Instrumental and expressive gestures. Children with ASD may use gestures to get others to do things for them but not to convey feelings.

*Photo Credits:* (a) Karin Dreyer/Stockbyte/Getty Images (b) Image Source/Photodisc/Getty Images (c) Michaela Begsteiger/Getty Images (d) Digital Vision/Photodisc/Getty Images



## Early Communication in ASD

When a dab of shaving cream is put in the hand of this child with ASD, he pays attention to the shaving cream, and that's all he pays attention to. He is oblivious to the fact that his father is a foot away and his mother is close by. He shows no signs of wanting to share his experience with others.



© 1991 Alvin Perlmutter

This normally developing child is delighted with the shaving cream, and immediately incorporates everyone into his experience by showing his mother what he has in his hand. He has something to communicate and wants to let everyone in on it.



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Children with ASD who develop language usually do so before age 5. Although almost all children with ASD show delays in their language development, it is their lack of spontaneity and their use of qualitatively unusual forms of communication that is most striking (Chiang & Carter, 2008). The rhythm and intonation of their speech is often unusual (Peppe et al., 2007), but most noticeable is their lack of social chatter—their failure to use language for social communication. Parents and teachers of children with ASD describe their communications as nonsensical, silly, incoherent, and irrelevant, having little meaningful connection with the situation in which they occur. This is illustrated in the following interview with Jerry, a 5-year-old boy with ASD who has a great deal of expressive language (Bemporad, 1979, pp. 183–184):

INTERVIEWER: “Would you draw a man or a woman?”

JERRY: “A man was business to a lady.”

INTERVIEWER: “What does that mean?”

JERRY: “No, a man is present to a lady, yes, yes, yes. A radio. Lady gives the pedal. Great big handkerchief and napkin, all tucked in. So see, there it is. We’ll paint the picture and put it in a frame.”

Language impairments in children with ASD occur at many levels (Stefanatos & Baron, 2011). For example, a common language impairment in children with ASD is **pronoun reversal**, which occurs when the child repeats personal pronouns exactly as heard, without changing them to suit the situation. For example, a child named Tim when asked, “What’s your name?” answered, “Your name is Tim,” rather than “My name is Tim.” However, their primary problem is not so much with the computational (sounds, words, and grammar) or the semantic (meaning) use of language. Rather, these children display profound impairments in **pragmatics**, which is the appropriate use of language in social and communicative contexts. An example of pragmatics (or, in this case the lack of it) is shown in ● Figure 6.2. The point of the





● **FIGURE 6.2** | Children with ASD have difficulty with the pragmatic use of language.

PhotoAlto/Eric Audras/Getty images

question “Can you look at me?” is to request that an action be taken, not to request information about the child’s ability to look at his mother. To understand this, a child must know more than what words mean—a child must “read” the context in which words are used. Lacking in pragmatic competence, children with ASD often have difficulty understanding nonliteral statements or adjusting their language to fit the situation (Dawson, 1996; Tager-Flusberg, 1993).

High-functioning children with ASD who have mastered word order and have large vocabularies may continue to display impairments in pragmatics. In addition, they continue to show both nonverbal and verbal deficits that reflect a basic failure to recognize the thoughts, feelings, and intentions of other people. At a nonverbal level, their monotonic voice and lack of gestures suggest difficulty in communicating emotions. At a verbal level, they display problems with narrative discourse, including stories lacking in detail and difficulty providing sufficient information to others. As they get older, children with ASD make little use of language for social convention, for example, to greet others or to be polite. It has been suggested that the common element underlying all the communication deficits in ASD is a general failure to understand that language can be used to inform and influence other people (Tager-Flusberg, Paul, & Lord, 2005).

## Restricted and Repetitive Behaviors and Interests

Children with ASD display a wide variety of restricted and repetitive behaviors and narrow patterns of interests and activities, such as a fascination with arithmetic, lining up toys, or insistence on driving the same route to the school (Leekam, Prior, & Uljarevic, 2011). **Restricted and repetitive behaviors** are characterized

by their high frequency, repetition in a fixed manner, and desire for sameness in the environment. Some children may perform stereotyped body movements, such as rocking or flapping their hands and arms, with such intensity that they begin to perspire; others may react explosively to a minor change in their routine; others may show a preoccupation with unusual objects, such as an electrical cord. They may show stereotyped and repetitive behaviors at times when they are not explicitly directed to engage in another activity, suggesting a possible deficit in their ability to initiate activities on their own. Other stereotyped behaviors occur in unpredictable or demanding situations and may provide the child with a sense of control over the environment and a way to cope with changes that are not understood (Klinger et al., 2014).

The category of restricted and repetitive behaviors was expanded in DSM-5 to include repetitive speech and idiosyncratic phrases that were previously identified in DSM-IV as deficits in communication. A common type of repetitive speech in children with ASD is **echolalia**, which is the child’s parrot-like repetition of words or word combinations that she or he has heard, either immediately after hearing them, or at a later time. A child who is asked the question “Do you want a cookie?” responds by repeating, “Do you want a cookie?” Although echolalia was once thought to be pathological, it may actually be a critical first step in language acquisition for many children with ASD. Echolalia and other verbal behaviors, such as *perseverative speech*—incessant talking about one topic and incessant questioning—may also serve a variety of communicative and developmental functions for children with ASD. These behaviors may reflect the child’s desire to communicate, although in a very primitive way (Prizant, 1996; Prizant & Wetherby, 1989).

Research has identified two dimensions of restricted repetitive behaviors in children with ASD: (1) “repetitive sensory and motor behaviors” (e.g., hand and body mannerisms, repetitive object use, and unusual sensory interests) and (2) “insistence on sameness behaviors” (e.g., compulsions and rituals, resistance to change). The frequency of the former remains relatively high over time, whereas the latter starts low and increases or worsens over time (Richler et al., 2010).

**Self-stimulatory behaviors** are stereotyped as well as repetitive body movements or movements of objects. Hand flapping or pencil spinning are examples. Although self-stimulatory and repetitive behaviors also occur in typically developing children and children with other forms of neurodevelopmental disorders, they are more frequent and persistent in those with ASD (Leekam et al., 2011; Watt et al., 2008). A particular self-stimulatory behavior, such as moving



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Pamela engaging in self-stimulation as a 7-year-old child and 20 years later as an adult

the fingers in front of the eyes, may persist from childhood through adulthood. In the accompanying photos of Pamela, taken 20 years apart, her self-stimulatory behavior looks amazingly similar. Self-stimulation may involve one or more of the senses, for example, staring at lights, rocking, or smelling objects.

The exact reasons why children with ASD engage in self-stimulatory and other repetitive behaviors are not known, although many theories have been advanced (Turner, 1999). One theory is that these children crave stimulation, and self-stimulation serves to excite their nervous system. Another theory is that their environment may be too stimulating and that they engage in repetitive self-stimulation as a way of blocking out and controlling unwanted stimulation. Other theories maintain that self-stimulation is maintained by the sensory reinforcement it provides, or that repetitive behaviors provide a calming influence, a way of regulating extreme levels of emotion (Joosten, Bundy, & Einfeld, 2009). Finally, restricted and repetitive behaviors may be linked to genetic disorders, such as fragile-X syndrome, that may co-occur with ASD (Moss et al., 2009). In the case of an individual child, any one of these reasons may apply (Leekam et al., 2011).

Atypical reactions to sensory input or unusual interests in sensory aspects of the environment are now included in the DSM-5 in the restrictive and repetitive behaviors category (Mandy, Charman, & Skuse, 2012). Many sights, sounds, smells, or textures that most children find normal can be confusing or even painful to children with ASD. A child with ASD may perceive and react to a specific person's voice as to a loud shriek, to a gentle stroke on the arm as to a sharp pain. Temple Grandin said that it wasn't that she didn't want contact with her mother but "the sensory overload of a hug shorted out my nervous system" (Grandin & Panek, 2013, p. 8). Such *sensory overresponsivity* involves a negative response to or avoidance of sensory stimuli and is accompanied by

overreactive brain responses in the primary sensory areas of the brain and areas related to affective processing and regulation, including touch (Green et al., 2013; Voos, Pelphrey, & Kaiser, 2013). A variety of sensory abnormalities are both common and persistent in children with ASD, with 90% or more having problems in two or three sensory domains that continue well into adulthood (Klintwall et al., 2011; Leekam et al., 2007). These include oversensitivities or undersensitivities to certain stimuli (e.g., unusual reactions to auditory stimulation), overselective and impaired shifting of attention to sensory input, and impairments in mixing across sensory modalities—for example, an inability to simultaneously see the movement and hear the sound of a person's clapping (Reynolds & Lane, 2008; Rogers & Ozonoff, 2005).

Children with ASD may display deficits such as sensory dominance and stimulus overselectivity. *Sensory dominance* is the tendency to focus on certain types of sensory input over others—for example, a preference for sights over sounds. *Stimulus overselectivity* is the tendency to focus on one feature of an object or event in the environment while ignoring other equally important features. A selective focus on one narrow part of the environment while ignoring other important features gives children with ASD the appearance of having tunnel vision or tunnel hearing, making it very difficult for them to learn about their world (Robertson et al., 2013).

## Section Summary

### Core Deficits of ASD

- Children with ASD experience profound difficulties in relating to other people, including deficits in orienting to social stimuli, imitating others, sharing a focus of attention with others, and noticing and understanding other people's feelings. They also display deficits in social communication, including the use of preverbal vocalizations and

gestures, language oddities such as pronoun reversal, and difficulties with the appropriate use of language in social contexts.

- Children with ASD exhibit restricted and repetitive patterns of behaviors, interests, and activities. These generally fall into two categories: (1) *repetitive sensory and motor behaviors*, which include unusual sensory interests, oversensitivities or undersensitivities to certain stimuli, stereotyped hand and body movements, and repetitive speech or object use, and (2) *insistence on sameness behaviors*, which include compulsions and rituals, and resistance to change.

## ASSOCIATED CHARACTERISTICS OF ASD

In addition to their core deficits, children with ASD display a number of associated characteristics. These include intellectual deficits and strengths, cognitive and motivational deficits, and medical conditions and physical characteristics.


### Intellectual Deficits and Strengths

Intellectual disability (ID) is common in children with ASD and is a strong predictor of later functioning (Matson & Shoemaker, 2009). The intellectual ability of children with ASD varies widely, from profound disability to superior ability. Those with superior abilities often capture media attention, yet, in reality, 70% of children with ASD have been estimated to have co-occurring ID. Approximately 40% have severe to profound ID, and 30% have mild to moderate ID. The remaining 30% have average intellectual ability or above (Fombonne, 2003, 2005). However, recent reports indicate that ID in children with ASD is lower, closer to 40% to 50% (Centers for Disease Control and Prevention [CDC], 2014; Charman et al., 2011). The more recent lower estimates most likely reflect the increase in ASD diagnoses in higher-functioning individuals as well as more children receiving early intervention (Matson & Shoemaker, 2009).

Assessing intellectual ability in children with ASD can be challenging, since intellectual tests often require skills such as language and imitation that may be limited in these children (Klinger, O'Kelley & Mussey, 2009). Intelligence in children with ASD has typically been assessed using the Wechsler Intelligence Scale for Children (WISC-IV; Mayes & Calhoun, 2008). Most children with ID without ASD show a general delay across all areas of intellectual functioning on this test. In contrast, the performance of children with ASD tends to be uneven across different WISC subtests. One common pattern is a relatively low score on verbal subtests such as comprehension, and relatively high scores on nonverbal subtests involving short-term memory for strings of

numbers or arranging blocks to form a specific pattern. However, there is limited evidence that individuals with ASD show one distinctive IQ test profile (Charman et al., 2011). Studies have also found that children with ASD score higher on other tests of intellectual functioning than they do on the commonly used WISC-IV, also suggesting that intelligence in this population may be higher than previously estimated (Dawson et al., 2007).

Despite their intellectual deficits, a small but significant number of individuals with ASD develop *splinter skills* or *islets of ability*. Their special talents may be in spelling, reading, mathematics, music, or drawing. As many as 25% of children with ASD display a special cognitive skill that is above average for the general population and well above their own general level of intellect (Howlin et al., 2004). These special abilities are more strongly related to the restricted and repetitive characteristics of children with ASD than to their deficits in social interaction and communication (Vital et al., 2009).

In addition, about 5% of children with ASD develop an isolated and often remarkable talent that far exceeds normally developing children of the same age. These children, referred to as *autistic savants*, display supernormal abilities in calculation, memory, jigsaw puzzles, music, or drawing (Treffert, 2010). One boy with ASD had an IQ of 60 but could recite the daily lottery numbers for the past 5 years. Another boy learned to play the piano by reproducing any tune he heard on the radio, from Brahms to Bacharach. Psychologists who studied this boy estimated that he had more than 2,000 tunes in his head (Gzowski, 1993, p. 91). Nadia, a girl with ASD, was obsessed with horses; she drew hundreds of pictures of them with incredible vividness and accuracy when she was only 3 years old. One of Nadia's drawings at age 5 is reproduced in  Figure 6.3. After seeing a picture of a horse in a story, Nadia could generate endless images of what this horse would look like in any pose (Baron-Cohen & Bolton, 1993). Interestingly, Nadia did not retain her savant skills as she got older, suggesting that, for some, later developing higher-order cognitive skills may interfere with the types of processing that support their special abilities (Selfe, 2011).

It is not clear whether the special abilities of a few children with ASD reflect intact abilities or indicate a cognitive deficit. However, superior performance by children with ASD has typically been viewed as a side effect of abnormal brain functioning, rather than as a reflection of genuine intelligence. One idea is that autistic savants tend to segment information into parts rather than looking at the whole, which leads to exceptional performance in certain domains (Pring, Hermelin, & Heavey, 1995). Another explanation is that children with ASD think in images rather than in abstract ideas, which allows them to remember material in the manner





(Age 5)

● **FIGURE 6.3** | Drawing of a horse by Nadia at age 5.

*Nadia: A Case of Extraordinary Drawing Ability*, L. Selfe, 1977. Copyright Elsevier 1977.

of a camera or a recorder (Hurlbert, Happé, & Frith, 1994). Unfortunately, despite the fascination and appeal of the skills of autistic savants or the more common splinter skills, in most cases the skills are not used constructively to enhance everyday living.

## Cognitive and Motivational Deficits

Two types of cognitive limitations proposed to underlie ASD are: (1) specific cognitive deficits in processing social-emotional information, and (2) more general cognitive deficits in information processing, planning, and attention.

### Deficits in Processing Social-Emotional Information

The social and communication deficits of children with ASD have generated much interest in how they process social-emotional information, such as emotional expressions, voice and facial cues, and internal mental states. As we have discussed, their unusual social behavior suggests a significant impairment in their social sensitivities. Social interaction is not entirely absent or

impaired, but rather they have great difficulty in situations that require social understanding.

At around 12 months, most normally developing infants can tell when they and another person are attending to the same thing. They begin to recognize that people's actions are driven by desires and directed at goals. This ability contributes to the emergence of pretend, or "as if," play. Young children with ASD, however, don't understand pretense, nor do they engage in pretend play (Stanley & Konstantareas, 2007). For example, a normally developing child may give a doll a drink of water from an empty cup while making the appropriate slurping sounds, whereas a child with ASD may simply spin the cup repetitively. The deficits in spontaneous pretend play in young children with ASD led to the hypothesis that these children would also display impairments in their understanding of beliefs and desires or other mental states in themselves or others that cannot be seen directly. The development of such an awareness of mental states in themselves and others is referred to as **mentalization** or **theory of mind (ToM)** (Baron-Cohen, Tager-Flusberg, & Cohen, 2000). By age 4, most children can comprehend what others might know, think, and believe; this is something that even older individuals with ASD have great difficulty doing. The ToM hypothesis of ASD begins with the premise that the ability to read the intentions, beliefs, feelings, and desires of others from their external behavior has adaptive significance in human evolution. ToM proposes that all humans are, by nature, mind readers. We spend our waking lives reading subtle cues that enable us to fill in the blanks about other people's beliefs and intentions. We do this automatically and with little conscious effort.

Suppose, for example, that a student walked into your class about 10 minutes after it began, looked around the room, and then left. How would you explain the student's behavior? As a mind reader, you may have thought: "Maybe she was *trying* to find a book she lost, and she *thought* she left it in this classroom," or "Maybe she *wanted* to find a friend who was taking this class, but *realized* that her friend was not in class today." No doubt you can come up with many explanations for this student's behavior, and most will be based on her mental states (the words in italics). You may not be 100% certain of the reason, but chances are you can easily generate many possibilities.

It has been proposed that many of the primary problems of individuals with ASD stem from a deficit in their ToM mechanism. In other words, children with ASD suffer in varying degrees from "mindblindness"; that is, "they fail to develop the capacity to mindread in the normal way" (Baron-Cohen, 1995, p. 5). Interestingly, when asked what brains do, most 5-year-olds say that brains are for thinking, dreaming, keeping secrets, and



so on. But when children with ASD are asked this question, they may say that the brain is what makes people move—expressing nothing about mental activity (Baron-Cohen, 1995). A child with ToM deficits may be able to learn, remember, and know things about the social world but has little understanding of their meaning.

The original test used to determine children's ability to detect mental states of others was called the Sally–Anne Test. A similar test is described in A Closer Look 6.3. This test, which is extremely simple, illustrates what it means to have an everyday ToM.

### A CLOSER LOOK 6.3

#### The Sally–Anne Test: What It Means to Have a Theory of Mind

Two dolls, Sally and Anne, are used as props. Sally has a basket; Anne has a box. Sally puts a marble in her basket and covers it, then leaves the room. Anne takes the marble from the basket and hides it in her own box. Next, Sally comes back from her walk and wants to play with her marble. The critical question is: Where will Sally look for her marble?

Most 4-year-olds can answer this question reliably. Sally will look for her marble in her basket where she put it. Even children with intellectual disabilities realize that Sally will think that the marble is where she had left it. They also indicate that Sally did not know what Anne did because she was out of the room when Anne moved the marble.

This understanding demonstrates that young children have attributed a mental state to another person. They grasp that someone can have a false belief about a situation. The false belief is a mental state, not a physical state, and it can very helpfully explain and predict behavior—for instance, that Sally will look for her marble in her basket. Understanding false belief naturally implies an understanding of true belief, of knowledge and ignorance, and of intentions and feelings. This is a theory of mind (ToM).

Most children with ASD, even of a mental age far in excess of 4 years, find the simple Sally–Anne test a great puzzle and tend to get it wrong. They say that Sally will look for the marble in Anne's box (where it really is)—even though they remember correctly that Sally had put the marble into her basket and was not present when Anne transferred it to her box. Despite remembering the simple sequence of events, they cannot make sense of them by inferring that Sally has a false belief—so they do not take into account what Sally thinks; they miss the important change (her previously correct belief is now false). Thus, they cannot predict Sally's behavior. Their lack of understanding of false belief reflects a lack of understanding of others' mental states; hence the claim that individuals with ASD do not have a theory of mind (ToM).

Source: Adapted from *Autism* By Uta Frith, From *Scientific American*, June 1993.

A small but significant number of children with ASD (estimates range widely, from 15% to 60%) demonstrate some knowledge of ToM—they pass the Sally–Anne Test or tests like it (Happé, 1995a). In contrast to the children with ASD who do not pass false-belief tests, children with ASD who pass the tests display insightful and interactive behavior and have better verbal and communication abilities (Frith & Happé, 1994). They also display far more verbal ability than other children of the same chronological age, suggesting that they may work out ToM tasks in a conscious and logical way (Happé, 1995a, 1995b). All children who succeed at ToM tasks, including children with ASD, usually understand metaphors, irony, and a range of speaker emotions, such as the intention to lie or tell a joke. However, youngsters with ASD who understand a false belief give laborious explanations for their insights, suggesting the use of conscious and deliberate strategies to discern mental states. In contrast, understanding a false belief may be so natural, automatic, and unconscious for most children that they may have difficulty explaining how they come up with their answer (Happé, 1995a).

Brain scan studies suggest that the ability to mentalize is associated with a specific region of the brain that is connected to a widespread network of brain regions involved in social cognition (van Veluw & Chance, 2013). Regarding the difficulties displayed by children with ASD, these findings may have implications for understanding the neural basis of ASD, which we will return to in a later section. Although specific social–emotional cognitive deficits, as in ToM, are very common in children with ASD, the fact that they do not occur in all of these children suggests that mechanisms other than ToM are needed to explain the cognitive deficits in autism.

#### General Deficits

Children with ASD display a general deficit in higher-order planning and regulatory behaviors (Russell, 1997). These processes, called *executive functions*, permit us to maintain effective problem solving by inhibiting inappropriate behaviors, engaging in thoughtful actions, sustaining task performance and self-monitoring, using feedback, and flexibly shifting from one task to another. This presence of a general deficit in executive functioning in children with ASD is suggested by their difficulties in cognitive functions such as planning and organizing, changing to a new cognitive set, disengaging from salient stimuli, processing information in novel and unpredictable environments, and generalizing previously learned information to new situations (O'Hearn et al., 2008).

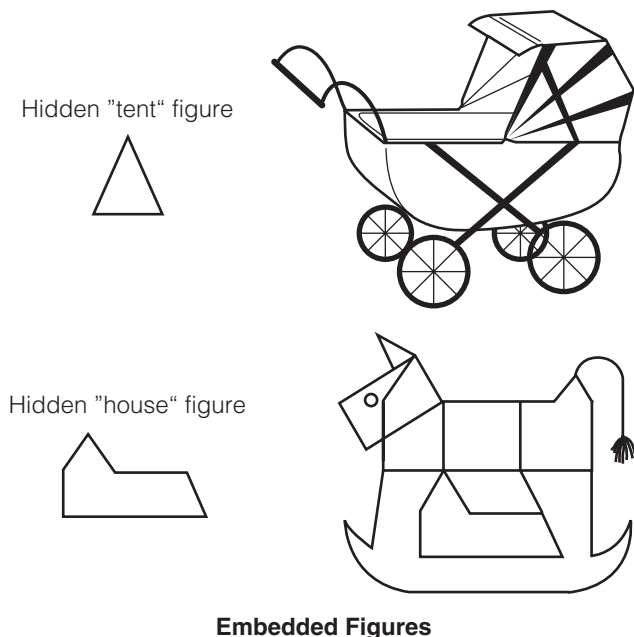
There are many types of executive functions, so it will be important to identify which deficits in executive function are specific to individuals with ASD (Russo et al., 2007). For example, children with ASD display executive functioning deficits that are more generalized and profound than those seen in ADHD; children with ASD share some deficits with children who have ADHD (e.g., vigilance, inhibitory) and have other deficits that are different (e.g., cognitive flexibility/switching) (Corbett et al., 2009).

Another general cognitive deficit hypothesized to underlie ASD is a weak drive for **central coherence**, which refers to the strong tendency of humans to interpret stimuli in a relatively global way that takes the broader context into account (Frith, 1993). By doing this, we can extract meaning from complex sets of information and remember the main points rather than the precise details. It has been proposed that individuals with ASD have a weak tendency for central coherence and tend to process information in bits and pieces rather than looking at the big picture (Frith & Happé, 1994). Understanding other peoples' words, gestures, or feelings can be extremely difficult for someone who lacks central coherence, as reflected in this statement by Donna Williams, an adult with ASD who has written extensively about what it is like to have this disorder:

It is hard to care or be interested in what a person feels when you perceive a body and then a hand and an eye and a nose and other bits all moving but not perceived in any connected way, with no perception of the context. (Nemeth, 1994, p. 49)

Consistent with a general deficit in central coherence, individuals with ASD perform surprisingly well on tasks in which a focus on parts of a stimulus, rather than the overall pattern, serves to facilitate performance. One such task, the Embedded Figures Test (Jolliffe & Baron-Cohen, 1997) is shown in ● Figure 6.4. The advantage for individuals with ASD on this task may be caused by their spontaneous mental segmentation of the figures into unconnected and meaningless units (Brosnan, Gwilliam, & Walker, 2012). This happens to facilitate the identification of the figure embedded in the whole pattern, resulting in higher scores on this task.

A deficit in ToM and weak central coherence in a child with ASD may also affect the generalized knowledge of what happens at everyday real-life events such as going on a field trip (Loth, Gomez, & Happé, 2008). These types of mental scripts are important tools in structuring the child's social experiences while accounting for the variability that surrounds real-life events, and may be impaired in children with ASD.



● **FIGURE 6.4** | Embedded Figures Test: Children with ASD perform relatively well on tasks that require attention to details of a figure rather than the overall pattern.

From *A Manual for the Embedded Figures Test* by H. A. Witkin, P. K. Oltman, E. Raskin, and S. A. Karp, pp. 21–26. Consulting Psychologists Press, Inc. Copyright © 1971 by Stephen Karp. Reprinted by permission of S. A. Karp.

### Are These Cognitive Deficits Specific to ASD?

Of the cognitive deficits that we have described, lack of ToM seems to be the one most specific to children with ASD as compared with children with ID or specific language deficits. However, studies of ToM across a variety of other disorders, including schizophrenia, ADHD, and conduct disorder, suggest that these children also have difficulties in accurately interpreting other people's intentions (Sprung, 2010). Deficits in processing social-emotional information appear to be less specific to ASD than are ToM deficits; the former occur in many other conditions, including schizophrenia and ID. There is even less diagnostic specificity for executive functioning deficits, which occur in many other clinical groups of children, including those with ADHD and conduct disorder (Griffith et al., 1999). Further work is needed to determine whether the kinds of deficits in executive functioning in children with ASD differ from those in children with other problems (Hill, 2004).

### Are These Cognitive Deficits Found in All Individuals with ASD?

As we have noted, some individuals with ASD pass ToM tests. However, it is not yet clear whether individuals with ASD who have normal IQs have actually

developed a ToM. Studies of high-functioning school-aged children and adolescents with ASD suggest that they understand the theoretical principles of advanced mental state reasoning but do not apply them in everyday life situations (Scheeren et al., 2013).

It seems unlikely that a single cognitive abnormality can explain all the deficits present in children with ASD (Tager-Flusberg, 2007). The presence of multiple cognitive deficits, some specific and some general, may help us explain why ASD exists in so many forms and levels of severity. Finally, although we have discussed the general and specific deficits in cognitive functioning in ASD individually, note that they are related to one another. For example, there is likely a link between the development of certain executive functions and the emergence of children's ToM.

In addition to the cognitive deficits previously discussed, another view is that children with ASD have an underlying impairment in *social motivation*—that is, they fail to find social stimuli intrinsically rewarding (Dawson et al., 2002). For example, most infants find the mutual exchange of positive emotions during social interactions involving eye-to-eye contact rewarding, and it motivates them to notice and attend to social and emotional cues. In contrast, infants who are later diagnosed with ASD initially show as much eye contact as infants who do not go on to develop ASD, but then show a decline in eye contact from 2 to 6 months of age, a pattern not seen in infants who do not develop ASD (Jones & Klin, 2013). Children with ASD may fail to find eye-to-eye contact rewarding and thus are less motivated and less likely to attend to social cues, extract meaning from others' emotional expressions, and participate in social exchanges. As a result, they have fewer opportunities to engage in behaviors essential for the development of social communication and language (Garcia-Perez, Hobson, & Lee, 2008; Hobson, 2002/2004). As one adolescent with ASD put it, "I still have to remind myself that there are people." Motivational theories remind us that the poor perspective-taking skills of children with ASD are not only manifestations of a cognitive deficit in their perspective-taking abilities, but may also reflect their disinclination to shift their perspective.

## Medical Conditions and Physical Characteristics

About 10% of children with ASD have a coexisting medical condition that may play a causal role in their disorder (Challman et al., 2003; Fombonne, 2003). These include motor and sensory impairments, seizures, immunological and metabolic abnormalities, sleep problems, and gastrointestinal symptoms (IACC, 2011). About 25% of individuals with ASD

experience seizures (Mouridsen, Rich, & Isager, 2011). Seizure onset usually occurs either in early childhood or more often in late adolescence or early adulthood (Bolton et al., 2011; Parmeggiani et al., 2010), with early-onset seizures typically associated with greater ID and poorer outcomes (Saemundsen, Ludvigsson, & Rafnsson, 2008). Sleep disturbances are also common, occurring in about 65% of children with ASD, and are typically related to the sleep-wake rhythm and problems with sleep onset and maintenance (Dawson, 2010; Hollway & Aman, 2011). Sleep disorders in children with ASD are associated with a wide variety of behavior problems, making it essential to assess and treat these disorders when working with these children (Rossignol & Frye, 2011; Schwichtenberg et al., 2013). Also common are gastrointestinal symptoms such as abdominal pain, constipation, bloating, diarrhea, and nausea, occurring in about 50% of children with ASD (Chaidez, Hansen, & Hertz-Picciotto, 2013). These may be related to food selectivity and unusual eating habits and obsessions ranging from minor problems in eating, to disruptive mealtime behaviors, to clinically significant feeding problems, and to anxiety (Mazurek et al., 2013; Seiverling, Williams, & Sturmey, 2010).

Children with ASD are usually described as having a normal or attractive physical appearance, and they do not display the visible physical deviations that often accompany severe ID that is not associated with ASD. They may have subtle but distinctive minor physical anomalies such as facial asymmetries, which suggest the influence of genetic or other prenatal factors (Ozgen et al., 2010).

As many as 90% of individuals with ASD have a head size that is above average. About 20% have a significantly larger-than-normal head size that places them in the upper 3% of the general population (Redcay & Courchesne, 2005). This characteristic is more common in higher-functioning individuals and distinguishes them from individuals with ID, language disorder, and ADHD (Gillberg & de Souza, 2002). Interestingly, infants with ASD tend to have a smaller-than-average head size at birth, but then show an excessive increase in growth from 6 to 12 months, leading to the larger-than-normal head size observed at a later age, which is then followed by a deceleration in head growth (Courchesne, Carper, & Akshoomoff, 2003; Dawson et al., 2007). The cause of this rapid growth during the first year of life is not known, but one implication is that the overproduction of brain connections too quickly makes it difficult for developing children with ASD to adapt to and make sense out of their experiences (Lewis & Elman, 2008). However, a recent reevaluation of



head-circumference data in ASD studies raises the important concern that previous findings could be an artifact of using outdated norms and that when current norms for early brain growth are used there are few observed differences between changes in early brain growth in infants with ASD and other children (Raznahan et al., 2013). Thus, it remains to be established whether the “accelerated” growth in head size is specific to children with ASD when contemporary norms are used or whether it also occurs in samples of healthy children and those with other psychiatric disorders (Rommelse et al., 2011).

## Accompanying Disorders and Symptoms

The disorders that most often accompany ASD are ID and epilepsy (Bolton et al., 2011). Additional behavioral and psychiatric symptoms may include ADHD (Hanson et al., 2013), conduct problems (Guttmann-Steinmetz, Gadow, & DeVincent, 2009), anxieties and fears (Hallett et al., 2013), and mood problems (Magnuson & Constantino, 2011). Some children with ASD also engage in extreme, and sometimes potentially life-threatening, *self-injurious behavior* (SIB)—any self-inflicted behavior that can cause tissue damage to the child’s own body (see Chapter 5). The most common forms of SIB are head banging, hand or arm biting, and excessive scratching and rubbing. Head banging, if not prevented, can be severe enough to produce bleeding or even brain injury. SIB may occur for a variety of reasons—self-stimulation, to gain attention, or to eliminate unwanted demands—or, it may occur for no apparent reason (Furniss & Biswas, 2012). Whatever the reasons, rates of emergency/hospital treatment for self-inflicted injuries in children with ASD are seven times greater than for typically developing children (McDermott, Zhou, & Mann, 2008). However, SIB may not occur more frequently in young children with ASD than in those with other forms of developmental delay. For children with ASD, ID, atypical sensory processing, need for sameness, repetitive behaviors, and impulsivity are among the strongest risk factors for SIB (Duerden et al., 2012; Richman et al., 2013).

## Section Summary

### Associated Characteristics of ASD

- Previous estimates were that about 70% of children with ASD also have ID. However, recent reports suggest that ID in individuals with ASD is closer to 40% to 50%, a decrease that is most likely related to increased diagnoses of ASD in higher-functioning individuals and to the effects of early intervention.

- Children with ASD display a deficit in theory of mind (ToM)—the ability to understand other people’s and one’s own mental states, including beliefs, intentions, feelings, and desires.
- Children with ASD display a general deficit in higher-order planning and regulatory behaviors (e.g., executive functions).
- They may display co-occurring medical conditions and physical features such as seizures, sleep problems, gastrointestinal symptoms, or increased head size.
- Children with ASD may display co-occurring symptoms of ADHD, conduct problems, anxieties and fears, and mood problems.

## PREVALENCE AND COURSE OF ASD

For decades, ASD was thought to be a rare disorder, affecting about 1 per 2,500 children (Tanguay, 2000). However, recent findings worldwide indicate a much higher prevalence rate—as many as 1 per 68 children or between 1% and 2% (CDC, 2014; Elsabbagh et al., 2012). ASD affects over 2 million individuals in the U.S. and tens of millions more worldwide (Autism Speaks, 2013). In terms of economic burden, the total estimated annual societal costs of caring for children with ASD in the United States are \$11.5 billion or more (Ganz, 2007; Levelle et al., 2014). Health care costs for children with ASD are at least six times higher than for those without ASD and even higher for those with ASD and a co-occurring condition such as ID, ADHD, or epilepsy (Peacock et al., 2013). Given the increasing prevalence and growing emphasis on early identification and intervention for children with ASD, it is likely that these costs will continue to rise.

Many causes for the apparent dramatic increase in ASD have been proposed—vaccines, mercury, diet, acetaminophen, caffeine, antibiotics, allergies, environmental pollutants, and electromagnetic radiation—but to date none has been scientifically substantiated. It seems likely that most, if not all, of the rise in prevalence is caused by a greater awareness among parents and professionals; a broadening of the concept and its definition over the years; greater recognition and diagnosis of milder forms of ASD; changes in diagnostic criteria and categories; diagnostic substitution (i.e., the number of children receiving special education under other diagnostic categories, primarily ID, speech impairment, and learning disabilities, has decreased as those diagnosed with ASD have increased); and better case-finding methods (King & Bearman, 2009; Wazana, Besnahan, & Kline, 2007). However, whether