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A Framework for the Handbook's Exploration of Disruptive Behavior Disorders, Intermittent Explosive Disorder, and Impulse-Control Disorders

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In this introductory chapter, we will provide a general description of the diagnostic conditions that are the focus of this book—Disruptive Behavior Disorders (DBDs; namely Oppositional Defiant Disorder and Conduct Disorder), Intermittent Explosive Disorder (IED), and Impulse-Control Disorders (Pyromania and Kleptomania), see Chapters 2, 3, and 6 for full descriptions of them. Although there are some obvious behavioral links across these disorders, they also, as will become apparent in subsequent chapters, have some important differences. DSM-5, the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association [APA], 2013), included this set of disorders within one chapter, and we have decided to follow that convention for the *The Wiley Handbook of Disruptive and Impulse-Control Disorders*. This chapter will also include a brief background to the history of diagnostic classification and its purposes, explain our key assumptions, which are the basis for how the *Handbook* addresses these forms of psychopathology, and provide an overview of how the chapters are structured into the book's main sections.

The *Handbook* is designed to survey and integrate the most important and the most recent scholarship and research on these disruptive and impulse-control disorders in children and adolescents. Each chapter will contain a synthetic overview of the accumulated research in the area in question and identify important next directions for research. The chapters will thus serve as a stimulant for new advances in our understanding of the source, course, and treatment of these disorders. Key researchers have authored the chapters in this volume, and comment on the research methods being employed in each area, as well as the outcomes and implications of the findings. An overriding emphasis throughout the book is to comment on the applied "real-world" value of the accumulated research findings, and in that sense, the *Handbook* is expected to spur policy implications and recommendations.

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DBDs, IED, and Impulse-Control Disorders

This set of disorders is primarily characterized by behaviors that adversely affect the well-being and safety of others. The three main types of behavioral problems evident in the criteria for the disorders are: (a) markedly defiant, disobedient, provocative behavior; (b) major violations of either the basic rights of others or of age-appropriate societal norms and rules, and (c) explosive episodes of aggression. Explosive aggressive behavior may involve violence toward people or animals, destruction of property, or overtly threatening behavior that is markedly out of proportion to any stressor, frustration, or provocation that might have preceded the episode. Many youth commit an isolated illegal act at some point, but this does not warrant the designation "conduct disorder."

Although the disorders (DBDs, IED, Impulse-Control Disorders) addressed in this *Handbook* involve problems in behavioral and emotional regulation, the disorders vary in the degree of these two areas of dysregulation. Conduct Disorder is defined by criteria that primarily address poorly controlled behaviors that violate societal norms, although some of the behavioral symptoms may be due to poor emotional control of anger. IED represents the other extreme, as the IED criteria primarily involve poorly controlled emotion, and Oppositional Defiant Disorder (ODD) lies in between, as the criteria are more evenly distributed between emotional and behavioral dysregulation. Pyromania and Kleptomania are relatively rare disorders that are diagnosed as poor impulse control that leads to the periodic behaviors (fire setting and stealing) that serve to relieve internal tension when expressed. This set of disorders tends to have first onset in childhood or adolescence. Many of the symptoms defining these disorders can occur in some degree in typically developing individuals, so a critically important step in diagnosis is to determine that the frequency, persistence, pervasiveness across situations, and impairment resulting from the behaviors is substantially different than what would be expected normatively for a child of the same age, gender, and culture.

The disorders described in this book have been linked to a common externalizing spectrum (e.g., Krueger & South, 2009; Witkiewitz et al., 2013) related to a disinhibited personality dimension (see Chapter 6 of this *Handbook* for a discussion of personality disorders), and to a lesser extent to negative emotionality. These personality dimensions may partially cause the high rates of comorbidity between these disorders and other conditions such as substance abuse (see Chapter 5 for a full discussion of this comorbidity). Disruptive behavior disorders may arise in individuals with some other serious underlying mental disorder; in those cases both should be diagnosed if the diagnostic criteria are met. However, a separate diagnosis of a DBD, IED or impulse-control disorder is not warranted if the disruptive behavior is limited to episodes of some other mental disorder (such as mania or depression) and where the other mental disorder can reasonably be viewed as primary.

Background on Diagnostic Classification and its Purposes

Before we embark on the description and treatment of the disruptive behavior disorders and their close relatives (IED and impulse-control disorders) throughout this *Handbook*, it is useful to think about the history and issues involved in psychiatric diagnoses in general (Fabrega, 1996, 2001; Pincus & McQueen, 2002). Early efforts to classify human problems started as human civilizations became more established, and people became attentive to the types of physical and emotional difficulties that were evident in themselves and their peers. The earliest known efforts by humans to classify mental disorders as they perceived them among their fellow humans included Egyptian and Sumarian references to senile dementia, melancholia, and hysteria evident in writings prior to 2000 B.C. In the fifth century

before Christ, Hippocrates and his followers developed what could be regarded as the first classification system for mental illnesses. This system included classification of melancholia, paranoia, phobias, phrenitis, mania, epilepsy, and Scythian disease (transvestism). These disorders were presumed to be due to different imbalances of the four humors. Hippocrates' system placed these disorders within the medical domain, and was based on observation of patients, in contrast to the logical approach to categorization of mental disorders used by Plato, which distinguished between rational and irrational forms of madness that were created when the rational and irrational souls were separated.

On the other side of the world, the early history of the Mayan culture in the Americas also indicates that they identified several psychiatric syndromes in the period 500–100 B.C. Our understanding of the classification of mental disorders within the later Incan culture largely comes from Spanish chronicles, but suggests that differentiations were being made between anxiety, insanity (e.g., Utek cay), melancholy (e.g., Putirayay), and hysteria (Elferink, 1999). As with modern classification systems, these early descriptions of emotional and mental maladies led to intervention efforts, including efforts by Mayan priests to intervene with gods such as Ixchel, the patroness of medicine. A number of plants were used by Incans and pre-Incans to treat depression, including the seeds of the vilca tree, which has hallucinogenic properties, and the china root, which is still used in folk medicine today.

Mental disorders were thought in the ancient world to be the result of supernatural phenomena, and the mentally ill were scorned and feared. Children with mental or physical handicaps were viewed as sources of economic burden and embarrassment, and were often abandoned and sometimes put to death. In the Western world, advances in classification of mental illnesses were slow in the millennia after the Greek and Roman philosophers. Innovations in classification did not substantially develop until the seventeenth century. A function of these evolving classification systems was to move from assuming that causes of disorders were supernatural to determining the natural causes of diseases.

Thomas Sydenham (1624–1663), who has been characterized as the "English Hippocrates" and "father of modern medical thinking," emphasized careful clinical observation and diagnosis of patients, and pioneered the idea of syndromes in which associated symptoms would have a common course (Dewhurst, 1966). Sydenham described how different individuals with the same disease would have similar symptom presentations, and that there were different causes for different disorders. Sydenham's approach suggested that classification of mental disorders could be approached best through systematic observation and description of symptom patterns. This descriptive approach to classification became increasingly accepted by professional groups, as evident in Jean Columbier and Francois Doublet's publication of *Instruction sur la manière de gouverner les insensés . . .* in psychiatry in 1785, which involved information compiled from, and sanctioned by, a group of French physicians who were treating the mentally ill. The categories of mental illness described in this book included ones that were, in fact, similar to categories suggested by Hippocrates thousands of years earlier (mania, melancholy, frenzy, stupidity). Subsequent descriptive classification systems by Pinel and Jean-Etienne Esquirol identified finer distinctions within disorders, and were the first to use terms like "remission" to describe the course of mental illness.

However, this taxonomic system, which had evolved from the botanical sciences, was largely abandoned in the nineteenth century in favor of an anatomical-clinical approach which described the course of diseases and the accompanying brain lesions. The work of Bale, and especially of Greisinger, was particularly important in this effort to develop a classification system that incorporated then prevalent understandings of the cause of the disease. They believed that all mental disorders had an underlying physical cause that originated in the brain. Emil Kraepelin took the next step at the end of the nineteenth century and proposed that a classification system could be developed on the basis of etiology,

symptomatology, and course of disorder. Contemporary classification systems have evolved from these predecessors, and the ICD and DSM are generally compatible systems of classification of mental disorders.

International Classification of Diseases (ICD)

After World War II, the US Army and the US Navy developed a more comprehensive diagnostic system which could also address less severe mental disorders evident in veterans. The system used by the armed forces and the ICD-6 (International Classification of Diseases – Revision 6) played a major role in serving as the foundation for the first edition of the *Diagnostic and Statistical Manual of Disorders* (DSM) published by the American Psychiatric Association in 1952. The ICD actually predates the DSM by nearly 100 years, and is the standard used throughout the world. The ICD developed out of efforts to statistically record and classify causes of death, such as the Bills of Mortality in London, and were not originally aimed to standardize medical diagnosis and treatment. A major change in the ICD classification occurred with ICD-6 in1948, as it was expanded to classify morbidity as well as mortality information, and included for the first time a section on mental, psychoneurotic, and personality disorders. The ICD-6 and its successive revisions through ICD-10 proved to be adaptable enough to be extended for use in diagnosing illnesses and for classifying health statistics in hospitals (Goodheart, 2014). All 193 World Health Organization (WHO) member countries, including the United States, are required by international treaty to collect and report health statistics to the WHO using the ICD as a framework.

The next revision of the ICD, ICD-11, is undergoing field trials, and will appear in 2018. The WHO's priorities for the development of the classification of mental and behavioral disorders in ICD-11 include increasing its clinical utility in global mental health settings (Reed, 2010) and improving the identification and diagnosis of mental disorders among children and adolescents (Lochman et al., 2015; Rutter, 2012).The disruptive behaviors will appear in a section titled Disruptive Behavior and Dissocial Disorder. The inclusion of mental and behavioral disorders alongside all other diagnostic categories is an important advantage for ICD, as it can facilitate research on related mechanisms of etiology and comorbidity of disease processes across psychopathology and other medical conditions, and can increase the clinical use of the classification by all specialties and general health care workers all over the world (International Advisory Group, 2011).

Diagnostic and Statistical Manual (DSM)

The American Psychiatric Association published a predecessor to the DSM prior to the American Civil War, in 1844, as a way to develop a statistical classification of institutionalized mental patients. This pre-DSM was meant to improve communication about the types of patients in hospitals (APA, 2013), certainly a familiar aim today. Following efforts to address veterans' mental disorders after World War II, the American Psychiatric Association published the first edition of the DSM in 1952. This manual was heavily based on the diagnostic system used by the armed forces in World War II, and was published in collaboration with the roll-out of ICD-6. There were three major categories of dysfunction in DSM-I: organic brain syndromes, functional disorder, and mental deficiency, which then comprised 106 categories (the number of categories increased sharply in subsequent editions; there were 407 in DSM-IV). DSM-II followed in 1968, but these first two DSM versions experienced only limited success among mental health professionals, largely because of their

reliance on theoretical descriptions and use of vague diagnostic criteria (Netherton, Holmes, & Walker, 1999). Because of professionals' frustration with the system, the APA task force, which was formed in 1974, aimed to modify the system substantially so that it would provide more objective, clinically useful, and reliable diagnostic information. It was hoped that this major revision would be more acceptable to clinicians and to scholars from various theoretical orientations.

In contrast to the first two DSM editions, which had only narrative descriptions of symptoms (requiring clinicians to form their own definitions to make diagnoses), the DSM-III had explicit criteria for the disorders. The dramatic changes in the DSM-III content were because of the "Feighner criteria" (Feighner et al., 1972) and the Research Diagnostic Criteria developed by Spitzer and colleagues (Spitzer, Endicott, & Robins, 1978). At the same time, inferences that were heavily embedded in psychoanalytic theory were dropped. DSM-III also introduced the idea of multiaxial diagnoses, and became a widely used diagnostic system. The increasing emphasis on the research basis for the diagnostic categories has become stronger with succeeding editions of the manual, which rely more on available data and field trials than was the case with early versions of DSM. The DSM-IV attempted to provide scientific support for its diagnostic criteria, in contrast to use of expert judgment in the development of prior versions of the DSM. In addition to literature reviews, the DSM-IV committees reanalyzed existing large datasets in an effort to refine diagnostic criteria and to test reliability and validity in field trials (Quay, 1999).

The most recent revision of the DSM, DSM-5, began in 1999 with a series of conferences evaluating the strengths and weaknesses of DSM by the American Psychiatric Association in conjunction with officials from the World Health Organization's Division of Mental Health, the World Psychiatric Association, and the National Institute of Mental Health (APA, 2013). The literature on diagnoses was reviewed from 2003 to 2008 in 13 international DSM-5 planning conferences sponsored by the APA in cooperation with WHO and three of the NIH institutes (NIMH; NIDA; NIAAA). The DSM-5 was published in 2013.

What Are the Purposes of, and Concerns about, Diagnostic Classification of Behavioral Problems?

Although concerns exist about diagnostic classification systems, as noted below, they are meant to serve a variety of clinical and scientific objectives—and can do so, if classification is done as reliably, accurately, and validly as possible. Experienced and perceptive clinicians have been aware for a long time that diagnostic categories are simply concepts that are meant to provide a useful framework for organizing clinical experiences so that effective clinical work can be done (Kendell & Jablensky, 2003). In order to do this, we need to distinguish between disorders and diagnoses, with "disorder" referring to the clinically relevant emotional and behavioral maladjustment of a client, and "diagnosis" to the label that represents the concept of, or information about, that condition (Helzer, Kraemer, & Krueger, 2006). These diagnostic labels or concepts are justified only if they provide part of the framework for organizing complex clinical case information in such a way that it helps with better understanding this type of client's array of symptoms and then assists researchers and the clinician in treatment decisions (Kendell & Jablensky, 2003). Chapter 23 of this *Handbook* presents a discussion of how categorical diagnoses should be augmented with a case formulation and targets for intervention in forming treatment decisions. Two of the most important purposes for diagnostic classification thus involve facilitation of research and clinical work.

To Facilitate Research on the Causes and Active Mechanisms That Contribute to the Development and Maintenance of Behavioral Disorders

Beyond identifying clues to the genesis of disorders through a focus on the clustering of cases, as in epidemiological research, diagnostic systems can be useful in providing the focus for research into the biological, social, cognitive, and emotional risk factors that promote the disorder and contribute to its course across time. Disorders that are defined lead researchers to focus their studies of etiology on those disorders as the outcomes to be predicted. Increasingly precise and specific definitions of disorders, and the development of instruments (typically structured clinical interviews) designed to assess for the symptoms, have become the norm in clinical research. Research often focuses on broad distal risk factors for a disorder (e.g., the role of poverty, neighborhood violence, and density of aggressive children in classrooms in predicting to adolescent conduct disorder) and the more proximal and mutable risk factors that in some cases are part of a mediational chain leading to the disorder (e.g., harsh and inconsistent parenting, peer rejection, deviant peer involvement, distorted social cognitions also predicting to adolescent conduct disorder). The more mutable risk factors typically become the targets of research-based intervention programs. But before the intervention can be developed and found to be effective, researchers should, in association with clinicians, explore the active risk mechanisms leading to the disorder that will be the focus of the intervention. And this chain of investigation cannot occur without the disorder being known. As will be discussed shortly, however, some would argue that a discrete categorical classification of disorder is not the only approach to etiological research, and that studies of risk and protective factors predicting continuous dimensions (rather than categories) of pathological behaviors has also proven to be a rich source of information leading to our understanding of disordered behaviors.

To Facilitate Treatment Planning

Whether one uses categorical or dimensional approaches to conduct research on a disorder, the clinical decision as to whether to treat or provide intervention is inherently a categorical one. Although we can decide to use different intensities of a treatment, we ultimately decide either to provide treatment of the client's disorder or not to treat a given client's signs and symptoms. Categorical diagnoses help the clinician to decide whether there is a condition that needs treatment and, perhaps more importantly, can assist in deciding which type of treatment would be most appropriate and effective for a client with a specific diagnosis. Thus, classification systems help professionals to organize services for clients in an effective, planned way, and permit one service provider to indicate to the next service provider (because of a client's move, or because of a step-down or step-up in services in a system-of-care) how they can best accommodate and serve the transferring client.

In many ways, the ability of a diagnostic system to guide clinical practice, evident in useful and effective treatment planning, is the penultimate indication of the diagnostic system's clinical utility. Clinical utility has been a widely used concept in descriptions of clinical decision making, tests, and treatments, but it has not been well defined. However, First and colleagues (2004) tackled this problem by defining clinical utility as the extent to which a diagnostic classification system assists clinical decision makers to fulfill clinical functions including communicating information among practitioners, patients, and health care system administrators, to choose effective treatments, and to predict future clinical management needs. It has also been argued that the clinical utility of a diagnostic system is perceived to be different than

the validity of the system (First et al., 2004) and that, even in the absence of convincing overall evidence for the validity of diagnostic classification of mental disorders, it still can have functional utility by guiding treatment decisions (Kendell & Jablensky, 2003). However, there have been serious concerns about the clinical utility of prior diagnostic classification systems, in terms of their ability to coherently guide treatment planning (Reed, 2010).

Concerns about Diagnostic Systems

The degree of antipathy towards our diagnostic classification systems was highly visible and apparent as the rollout proceeded toward the release of the revised DSM classification, the DSM-5, in the spring of 2013. However, disagreement about the classification system is not new, has existed for decades, and was only to a certain degree specific to DSM-5 itself. Despite frequent agreement about the goals for a diagnostic system, consensus on the optimal diagnostic classification has not occurred. Research on diagnostic classifications and on other methods of identification of clusters or types of patients has led to growing agreement that the type of categorical diagnostic system used in the DSM and ICD systems has lagged behind our accrued knowledge about psychopathology and classification. Its focus on a purely categorical approach places limits on its reliability, validity and ability to account for cultural and contextual effects (Alarcon, 2009; Beutler & Malik, 2002; Freedman et al., 2013; Houts, 2002).

The strongest argument for categorical diagnostic systems is that clinicians need to make categorical decisions on a daily basis using typical clinical information (Helzer et al., 2006). Clinicians need to decide whether to treat a client and which type of treatment should be used, including whether to hospitalize a client (Kraemer, Noda, & O'Hara, 2004). One diagnostic label can potentially convey a considerable amount of useful clinical information in a vivid and succinct way (Widiger & Samuel, 2005). It has been noted that the clinicians' problem is not whether to use a categorical approach, but instead which one to use (e.g., DSM versus ICD—Helzer et al., 2006; Kraemer et al., 2004), since clinicians have to make "yes or no" decisions about treatment. The most obvious disadvantages of a categorical system are the limited validity of data that exist for some diagnostic categories, the dangers of reifying a presumptive diagnosis if little validity is evident, and, at a practical level, the fact that the degree to which someone is just above or below the decision line for the diagnosis can be lost. In the latter case, if a diagnosis is made, the diagnosis does not, by itself, indicate the intensity of the client's problem, while, if a diagnosis is not made, it is not clear whether the potential client had important subclinical levels of symptoms that could still warrant some clinical attention.

Dimensional approaches can have greater predictive validity than categorical methods, and have potential utility in clinical as well as research work (Widiger & Samuel, 2005). However, disadvantages exist for purely dimensional approaches to psychopathology as well. A dimensional approach introduces much more complexity into clinical communication, and may be very difficult to use in many clinical settings. Dimensional approaches provide information about degree of severity across a number of behavioral and emotional dimensions. At best, this wide range of information can be integrated into profiles, but the profiles (and definitely the single dimensions) are not likely to be as easily used by many clinicians to guide treatment in a clear and efficient manner. One potential resolution to this inherent conflict is to include both categories and dimensions in the diagnostic process (Drabick, 2009; Maser et al., 2009). Dimensional severity ratings could also be developed for existing categorical diagnoses (Brown & Barlow, 2005; Cantwell, 1996). Thus, a categorical diagnosis can be useful for epidemiology, treatment research, communication among professionals and permitting clients to obtain services, while dimensional information about the number and severity of

symptoms can provide complementary information about risk and resilience and permit prevention or tiered levels of intervention (e.g., more intensive treatments for those clients with most symptoms) to be provided (Drabick & Kendall, 2010). Such an approach could permit clinicians and researchers to use quantitative scores that go along with specific diagnoses, and thus permit easier assessment of degree of improvement during therapy. Such a framework would also assist targeted prevention activities, where an individual displays some early levels of a disorder but is not diagnostic yet. The dimensional approach could be used to identify ranges of problem presentation that, though not yet diagnostic, could trigger the provision of targeted prevention services for that individual or their family. This *Handbook* will focus on both categorical diagnoses of disruptive behavior disorders AND dimensional ratings of children's behavior.

Handbook Structure: Key Assumptions about Exploration of Research and Treatment Planning

A first step in our planning for this *Handbook* was to think about the types of knowledge (and, therefore, chapters) that we felt would be very important in enhancing understanding of how this form of developmental psychopathology was guided by the empirical evidence that has been rapidly accumulating in recent decades, and how research has led to evidence-based intervention approaches. On the one hand, our thinking about the planned structure of the *Handbook* was guided by our own recent work on the second edition of our book on several of these disorders, *Oppositional Defiant Disorder and Conduct Disorder in Childhood* (Matthys & Lochman, 2017). Based on our reading of the literature, we had a sense of what key topics should be reviewed by important experts in the field. On the other hand, we also had certain principles in mind that we felt would be important for advancing the science and clinical work related to youths' disruptive behaviors. These principles underlie the chapters that will follow.

Integrative Science

Integrated science synthesizes the perspectives of individual disciplines, and integrates them during all phases of the approach to a question or problem (from understanding risk mechanisms to understanding intervention approaches that address those mechanisms), with the results having an influence on policy decisions. Integrated science is thus an interdisciplinary effort, involving researchers from diverse scientific and clinical backgrounds, and requiring syntheses and integration of varied clinical research paradigms.

Although this approach extends back in some form to the early years of psychological research, there has been a resurgence in thinking about how advances in our understanding of human behavior requires multidisciplinary research. Collaboration across disciplines focuses on how individual, interpersonal, and cultural factors contribute to behavioral actions across time, including the serious acts of aggression and conduct problems that are the behaviors of interest for this *Handbook*. In recent years, based on discoveries about the mind, brain, and behavior, an integrative science of the person has been advocated (McAdams & Pals, 2006; Mischel, 2004), examining the physiological correlates, often evident in the work of cognitive neuroscientists, of individuals' psychological and social functioning. Thus, even at the level of risks in the individual child, integration is required across a wide range of research on children's neurobiological and genetic risks, prenatal and perinatal risk factors, attachment patterns, and stable child characteristics involving their cognitive functioning, emotional regulation, and social cognitive processing. As a result, professional societies, such as the Association for

Psychological Science, have initiated symposia on integrative science, journals on this field of research have been founded (*Integrative Psychological and Behavioral Science*), and applications in a wide variety of areas have begun (including in non-psychological domains, such as advocacy for an integrative science framework to assist with understanding the functioning and management of animals and plants within the national park system; Myers et al., 2007).

Consistent with a developmental psychopathology approach, this book uses an integrative science framework to explore risk factors and mechanisms that predict and account for children's disruptive behaviors, reviewing research from different disciplines and across different levels of factors affecting children's behavioral functioning. Relevant processes are examined at a genetic level, at a neurobiological level, at the levels of children's cognitive functions, emotional regulation and social-cognitive processing, and, within the social context around the child, at the levels of family, peer, community and school influences on children's behavior. The reader's task will be to maintain an integrative science framework across rich chapters on these separate risk factors, to consider how they can be considered together.

Not Just Direct Effects: Complex and Dynamic Relations among Risk Factors, and between Risk Factors and Behaviors

Risk and protective factors that are associated with children's behavior do not typically operate in vacuums, but can have profound additive effects. In some cases in risk factor research no specific risk factor emerges, but the accumulation of risk factors can predict problem behavior outcomes (Sameroff, Gutman, & Peck, 2003). In an even more intriguing way, risk factors often dynamically affect each other. Poverty, neighborhood context, parental depression and stress, and poor parenting practices have all been identified as risk factors for children's disruptive behaviors. However, poverty can influence neighborhood context (poor families often have to live in disadvantaged, high-crime neighborhoods), and both poverty and poor neighborhood context can affect parents' levels of depression and stress, and parents' levels of depression and stress can have large effects on the kinds of parenting practices they employ. A central research challenge involves how to integrate findings that were generated in "single-risk" studies and how to design analyses and research designs to better address this complexity (Funderburk, Maisto, Sugarman, & Wade, 2008; Minney, Lochman, & Guadagno, 2015; Weiner, Schinka, & Velicer, 2003). One useful approach that takes advantage of longitudinal data has been to examine developmental cascades leading to serious psychopathological outcomes (e.g., Dodge, Greenberg, Malone, & Conduct Problems Prevention Research Group, 2008; Klimes-Dougan et al., 2010). This approach not only accounts for the direct and additive effects of risk factors, but also can model their primary impact at different time points in the child's development.

Children's behavior and the risk and protective factors in their social contexts also relate in complex ways, often making simple conclusions about causality difficult. In the middle of the last century, Leary (1957) described how certain behaviors can become self-sustaining because they elicit confirmatory behaviors from others. Experimental manipulation of higher levels of disapproving and lower levels of approving behaviors in couples' conflict discussions leads to strong reciprocal behaviors in the partner, serving to increase the occurrence of heightened levels of conflict behaviors (Lochman & Allen, 1979). In the parent–child literature, there has been notable attention to "child effects," indicating how child behavior problems can evoke harsher and less involved forms of parenting behaviors from their parents (Bell, 1968; Huh, Tristan, Wade, & Stice, 2006; Lansford et al., 2011). In a similar vein, changes in children's behavior can lead to radiating changes in their peer group (Lochman, 2007), as intervention-produced changes in students' behavior in classrooms can lead to improvements in the behavior of other problematic students (Allen, Chinsky,

Larcen, Lochman, & Selinger, 1976). Thus, understanding how children's problem behaviors can transform their environment should assist us in not being too quick to assume that the behavior that we are observing in a parent or child is causing the problem behavior.

Mechanisms

Related to the assumption that risk factors predicting children's disruptive behaviors have complex interrelationships is another, namely that some intermediate constructs have been found to be mechanisms, or putative causes, of behavioral difficulties. Thus, the *Handbook* includes an emphasis on active mechanisms that contribute to the development and maintenance of disordered behavior, rather than only addressing risk factors that empirically predict outcomes, but have not been found to have a causal role in the development or maintenance of the disorder. Thus, an active mechanism is a risk factor that is manipulable and, when manipulated (as with psychotherapeutic intervention targeted at the mechanism), can produce a change in the risk of the outcome (Kraemer et al., 1997). This approach addresses questions of "why" the behavioral disorders develop in the first place and what accounts for their occurrence in children's day-to-day interactions with others.

Mediation research has been a fruitful approach to exploring mechanisms and examining temporal relations between factors that can indicate which variables might be affected by earlier risk factors and then serve as proximal triggers for the problem behavior to occur (MacKinnon, 2008; O'Connell, Boat, & Warner, 2009). For example, parenting has been found to be a mediator of a variety of risk factors. Mothers who are more depressed, have been found to be more inconsistent when they discipline their children, and their inconsistent discipline is the mechanism that accounts for children's increased aggressive behavior (e.g. Barry, Dunlap, Lochman, & Wells, 2009). The active mechanisms can also be psychological or biological processes within the child, as, for example, shown by findings that diminished cortisol reactivity can mediate the relation between children's exposure to interparental conflict and increases in children's externalizing behavior across time (Davies, Sturge-Apple, Cicchetti, & Cummings, 2007), and that children's dominance- and revenge-oriented social goals tended to mediate the relation between African-American children's ethnic identity and their aggressive behavior (Holmes & Lochman, 2009). The identification of active mechanisms associated with a behavioral disorder has considerable importance for intervention development, as these mechanisms can inform the developmental model for the intervention and can become the key targets that the intervention is designed to change in order to prevent or treat the behavioral disorder (Conduct Problems Prevention Research Group, 1992; O'Connell, Boat, & Warner, 2009).

Interventions Exist on a Continuum from Prevention to Treatment

The scope of this *Handbook* covers not only disruptive behavior disorders in youth, but also the subdiagnostic aggressive and conduct problem behaviors, considered as continuous dimensions, that are associated with the disorders. From a developmental psychopathology perspective, children move along developmental trajectories from early forms of problem behaviors to the onset of frank disorder. Thus, prevention can serve the important function of helping to divert children off the developmental pathway to disorder before the disorder becomes entrenched, making intervention more efficient and less costly. This assumption about the importance of prevention is especially important with the externalizing behaviors that are part of the disruptive behavior disorders because of longitudinal research that demonstrates the escalating patterns of serious antisocial behaviors in children.

The Institute of Medicine (IOM) has provided a reconceptualization of treatment and prevention approaches, indicating how they exist as a continuum of services rather than as discrete and qualitatively separate endeavors (Mrazeck & Haggerty, 1994; O'Connell et al., 2009). The IOM conceptualized three classes of services: prevention (universal, selective, indicated); treatment (case identification, standard treatment); and maintenance (compliance with long-term care, after care)—and emphasized how certain forms of each blended into the next category. Thus, targeted preventive interventions (selective and indicated), which address children who are already showing behaviors associated with the disorder but who are not yet in the diagnosable range, differ from universal preventive interventions because of the population served (Weisz, Sandler, Durlak, & Anton, 2005), and are not conceptually far removed from efforts to identify existing diagnosable cases in the treatment category. Because the active mechanisms contributing to problem behavior may be similar for children who are on the developmental pathway to the disorder and those that are already diagnosed, some interventions may be used both in targeted prevention (with at-risk individuals) and in treatment (with diagnosed ODD or CD children).

Evidence-Based Interventions

An underlying assumption in the *Handbook* is that rigorous research designs should not only be evident in basic research clarifying the nature of the disruptive behavioral disorders in children, but are equally important in determining whether interventions (pharmacotherapy and psychosocial interventions) benefit the children and adolescents served. Considerable strides have been made in identifying evidence-based programs and practices in both treatment and prevention with children with externalizing behavior problems (e.g., Weisz & Kazdin, 2010). Active efforts have been made to evaluate research on the efficacy of interventions and to disseminate these conclusions on easily accessible websites (e.g., www.blueprintsprograms.com; www.crimesolutions.gov/Programs.aspx; www.ies.ed.gov/ncee/wwc).

Evidence in support of the effectiveness of a program or practice falls on a continuum ranging from very low to very high levels of confidence. The more rigorous the research design of the intervention trials and the greater the number of positive evaluations, the greater confidence users can have that the intervention will reach its goal of helping youth. Evidence with the lowest level of confidence is "opinion-informed," consists of data such as testimonials, and does not provide any real proof of effectiveness. At the higher end of the continuum are experimental studies that lead to conclusions about evidence-based programs. All experimental studies use designs that involve comparison or control groups to determine if the program had the intended effect. The levels of confidence and evidence of effectiveness attributed to experimental studies can vary depending on factors such as whether the study's design was quasi-experimental or a randomized control design. Research on the evidence base of programs is critically important from a policy perspective, to insure that effective programs can be disseminated and that ineffective and iatrogenic programs are not.

Implementation Science

Implementation science can assist in the often difficult process of translating evidence-based interventions into real-world settings. LaGreca, Silverman, and Lochman (2009) have noted that it is time for intervention research to extend beyond documenting the efficacy and effectiveness of specific psychological treatments or preventive interventions for children and adolescents. Only a small percentage of youths who suffer from emotional and behavioral problems receive psychological services, and many of these services are not evidence-based.

Thus, it is important to develop an implementation science that uses research designs and methods that are as rigorous as those used in efficacy research to examine how best to disseminate interventions in diverse community settings (exploring the transportability of treatment), and how to personalize and adapt evidence-based interventions to produce optimal outcomes for children and their families. Implementation research will require innovation and complex research designs and analytic methods.

Research can range from identifying, and providing solutions for, key barriers (such as difficulties in engaging parents) that interfere with successful implementation of treatments, to rigorous testing of planned adaptations of evidence-based programs for different cultures and contexts and for subgroups of children who do not fare as well in the typical administration of a program. Research can also determine optimal methods for training "real-world" staff in the use of evidence-based approaches, as well as the organizational characteristics of service settings and personal characteristics of staff that can promote, or undermine, useful implementation of programs. At a larger policy level, implementation science can assist with reforming the mental health care delivery system (Fisher, Shortell, & Savitz, 2016) and improving the availability of evidence-based services for children with disruptive behavior problems in a variety of primary health care settings (Asarnow et al., 2015).

Overview of the Handbook

With these assumptions in mind, we have planned and edited the *Handbook* to comprehensively address Disruptive Behavior Disorders, Intermittent Explosive Disorder, and the Impulsive-Control Disorders as they appear in children and adolescents. The book has four sections, and the chapters in these sections address topics related to the definitions, risk factors, and etiology of each disorder, and to intervention with families and with the children themselves.

The first section of the book (Chapters 2 through 7) addresses diagnostic issues, and begins with foundational chapters on Oppositional Defiant Disorder and Conduct Disorder, two of the most prominent disorders covered throughout the book. These chapters address recent changes in DSM-5, and upcoming changes in ICD-11, that relate to these disorders. The chapters describe the rationale for diagnostic changes. Two chapters discuss two of the common classes of comorbid disorders for disruptive behavior disorders, Attention Deficit Hyperactivity Disorder and the Substance Abuse Disorders. A separate chapter describes Intermittent Explosive Disorder and the Impulse-Control Disorders (Pyromania; Kleptomania). These disorders have received less attention in the past in the realm of developmental psychopathology, so the treatment approaches that have been used with them are included in the chapter. Finally, a chapter on personality disorders and psychopathy describes the later adult sequelae of the disruptive behavior disorders.

The second section of the book (Chapters 8 through 22) covers the broad literature on factors that indicate the development and maintenance of the externalizing behaviors in children. A subsection (Chapters 8 through 15) addresses child-level factors, ranging from biological characteristics to psychological characteristics, associated with the disruptive behavior disorders. Chapters explore recent evidence for and against genetic markers, and deal with the brain structures and neurochemical characteristics associated with these disorders. The functional cognitive expression of children's neurobiological characteristics is examined in a subsequent chapter that covers a range of topics from executive functions to intelligence to language, while a further chapter describes prenatal and perinatal risk factors and their behavioral outcomes. Finally, three chapters address stable characteristics that emerge in children and their relation to their environment, including the nature of the parent–child

attachment, children's emotional regulation, and children's social-cognitive processes. Using a social contextual framework, the other three subsections address key aspects of children's environment and social context (family; peers; community). Four chapters (Chapters 16 through 19) describe how children's disruptive behaviors are linked, in complex ways, to broad family risk factors, including family poverty, family structure, parent psychopathology, and interparental aggression, and to parenting practices associated with children's aggression and conduct problems. Two chapters (Chapters 20 and 21) then describe how children's behavioral problems are related to their relationships with their peers, focusing on peer status and rejection, and on the considerable risks attached to involvement in deviant peer groups. Finally the last chapter in this section (Chapter 22) explores how broader risk factors in children's neighborhoods and schools are associated with their behavior.

A third section of the book includes one chapter (Chapter 23) on the clinical assessment process with disruptive behavior disorder children, which then contributes to the treatment plans for the children.

The fourth section of the book comprises six chapters that provide an overview of interventions and intervention issues for these children. Chapter 25 summarizes the current state of pharmacotherapy for children with CD and ODD. Three chapters offer a qualitative review of evidence-based family and child intervention approaches: for young children from birth through early elementary school (Chapter 26); for preadolescent children in late elementary school at the transition to middle school (Chapter 27); and for adolescents (Chapter 28). Consistent with the *Handbook*'s framework, prevention as well as treatment approaches are described. One of the most common and difficult barriers to effective treatment for these children is dealt with in Chapter 24, namely difficulties in engaging parents in the intervention process. Chapter 29 addresses a range of issues related to the implementation, dissemination, and adaptation of interventions. Finally, Chapter 30 will provide a summary overview and synthesis of key points and themes evident across the *Handbook*'s four sections.

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