

The Interdisciplinary Council on
Developmental and Learning Disorders

**Diagnostic Manual for Infancy and
Early Childhood**

Mental Health, Developmental,
Regulatory-Sensory Processing,
Language and Learning Disorders

ICDL-DMIC

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Introduction

Introduction to the ICDL-DMIC

Infancy and early childhood are characterized by dynamic relationships between the different dimensions of human development, including emotional, social, language, cognitive, regulatory-sensory processing, and motor capacities. A comprehensive classification of infant and early childhood disorders must, therefore, describe challenges in each of these areas of functioning and the relationships between them.

A comprehensive classification system is especially important in infancy and early childhood because children with a problem in one area are likely to have problems in other areas. For example, children with severe emotional and social difficulties often have language and/or regulatory-sensory processing difficulties and vice versa.

Yet, such a much-needed comprehensive classification system had not been constructed. Therefore, the Interdisciplinary Council on Developmental and Learning Disorders (ICDL), which represents leaders from all the disciplines that work with infants and young children, created a number of work groups to formulate a developmentally-based classification system for each of these areas of functioning. The goal of this effort was to create a framework to facilitate a more complete clinical description of infant and early childhood functioning. ICDL is now pleased to present this system.

The *ICDL Diagnostic Manual for Infancy and Early Childhood* (ICDL-DMIC) builds on preliminary work dating back to the early 1980s when the co-chairs of this effort (Stanley Greenspan and Serena Wieder) were conducting the Clinical Infant Development Program at the National Institute of Mental Health (NIMH) and brought in a number of leading clinicians to brainstorm on clinical diagnostic and intervention approaches for infants, young children, and their families. The initial working group included Reginald Lourie, Selma Fraiberg, T. Berry Brazelton, Julius Richmond, Ed Ziegler, Katherine Barnard, and many others. This group later expanded and led to the initiation of two organizations—Zero To Three: National Center for Infants, Toddlers, and Families and ICDL.

From the clinical observations, research, and discussions of the original advisory group and the NIMH Clinical Infant Development Programs' longitudinal intervention study of infants and young children and their families, we formulated initial classifications of healthy and disordered functioning and models of intervention. For example, we formulated the concept of "regulatory disorders" involving differences in sensory processing, which were contributing to behavioral and emotional difficulties. We also began to look at the developmental pathways leading to autism spectrum patterns and developed profiles that characterize the child's functional emotional developmental level and sensory processing profile, which led initially to different subtypes of multisystem developmental disorders and, more recently, to a developmentally-based classification of neurodevelopmental disorders of relating and communicating—a new way of sub-typing autism spectrum and related disorders (Greenspan, 1979; 1981; 1992; Greenspan, Wieder et al. 1987; Greenspan & Lourie, 1981).

The framework we constructed was a developmental, biopsychosocial model that provided a system for classifying and treating different groups of infant and early childhood mental health, developmental, and learning disorders. While each child must be understood in terms of his unique developmental profile, we believed it was often helpful to group patterns into broad categories to facilitate research, administrative record keeping, and the overall organization of clinical services. Such grouping also facilitates discussions that can improve the specificity of comprehensive treatment programs.

The two organizations that were an outgrowth of the NIMH program and the initial brainstorming group of pioneers in infant and early childhood mental health are now working to improve the classification of infant and early childhood mental health disorders. These efforts began a number of years ago when we (Greenspan and Wieder) had the honor of chairing the Diagnostic Classification Task Force for Zero To Three: National Center for Infants, Toddlers, and Families. At present, there is an ongoing effort to revise the original classification framework.

In addition, we initiated the Diagnostic Classification Task Force of the Interdisciplinary Council on Developmental and Learning Disorders (ICDL) to expand and further refine the diagnostic system for infancy and early childhood. The ICDL Task Force has expanded the classification system to include language and learning disorders, and a new developmentally-based framework for regulatory-sensory processing disorders and neurodevelopmental disorders of relating and communicating (autism spectrum disorders, multisystem developmental disorders, etc.). Furthermore, the ICDL-DMIC presents a new multi-axial approach, where each primary disorder is additionally profiled in terms of the contributions from functional emotional developmental levels, regulatory-sensory processing differences, language capacities, visuospatial abilities, as well as interactive and family patterns, stressors, and other medical disorders. The ICDL diagnostic classification effort builds on the ICDL *Clinical Practice Guidelines* (Interdisciplinary Council on Developmental and Learning Disorders Clinical Practice Guidelines Workgroup, 2000).

AN INTERDISCIPLINARY APPROACH TO CLASSIFICATION

This classification system integrates all components of development and functioning which traditionally have been addressed by different disciplines. It is intended for professionals of all disciplines working with infants and children and, additionally, can be used as a roadmap to understanding the interactions between the different components of the child's development, family, and environment, as well as to guide assessments and interventions.

The system is designed for professionals credentialed to do diagnoses. It is also intended to provide a systematic approach to describe each child's unique pattern of functioning. This approach can be helpful for all individuals who work with infants and young children. When appropriate, it can augment other existing diagnostic systems such as ICD-10, DSM IV-R, and DC: 0-3. Because the DMIC is an interdisciplinary tool that supports the integration of knowledge from different disciplines, it will, for example, guide the mental health professional to integrate what has been learned about develop-

ment, regulatory-sensory processing, language, visuospatial, and learning capacities into their mental health expertise. Similarly, pediatricians, occupational, physical, and speech and language therapists, educators, and professionals from other disciplines will integrate understanding of emotional development, interactive disorders, and family and environmental factors on adequate, constricted or disordered functioning.

THE NEED FOR A DEVELOPMENTALLY-BASED DIAGNOSTIC SYSTEM

The need for a developmentally-based classification system in infant and early childhood mental health that includes neurodevelopmental, regulatory-sensory processing, language, and learning disorders is based on a number of challenges that now face clinicians and researchers working with infants, young children, and their families.

As indicated, no system currently exists that includes the most common emotional, social, cognitive, motor, sensory, language, and learning disorders in the first five years of life. The ICDL-DMIC profiles each disorder from multiple perspectives, including emotional, sensory processing, and language dimensions. Also, new understanding of developmental pathways for both healthy and disordered development now makes it possible to formulate a truly clinically useful approach to classification that will facilitate research into etiological factors and inform intervention approaches that are tailored to the unique developmental profiles of each child and family.

THE PROBLEM WITH SYMPTOM-BASED APPROACHES

Symptom-based approaches to diagnostic classification (in comparison to the developmental approach that forms the basis of ICDL-DMIC system) have strived for reliability among clinicians in making a diagnosis. Lists of symptoms that are readily observable are used in the belief that they facilitate reliable judgments. The symptom-based approach, however, has not demonstrated clinical validity, including predicting clinical course or informing clinical practice, to the degree hoped for. For many diagnoses, the reliability among practicing clinicians making the diagnosis has been disappointing. Allen Frances, M.D., Chair of the DSM-IV American Psychiatric Association (APA) Task Force, recently commented in an article in *The New Yorker* magazine that the reliability hoped for was not realized and that the reliability among practicing clinicians was very poor (Spievel, 2005). In moving towards DSM-V, the APA Task Force is shifting towards a dimensional, rather than categorical, approach.

The most significant weakness in the symptom-based approach has been the confusion it has brought regarding the boundaries between disorders and the usefulness of the diagnostic categories for planning optimal treatment approaches. The degree to which many conditions evidence comorbidity with other conditions illustrates the problems with a symptom-based approach that is not sufficiently grounded in an understanding of etiological factors or the developmental pathways leading to disordered functioning. For example, often the symptom-based approaches have designated diagnostic categories, including boundaries between conditions, based simply on the consensus of experts, including decisions about how many of the symptoms are necessary for the diagnosis (e.g., three out of five, rather than two out of five).

Yet there are insufficient studies documenting what it means if the patient meets only two out of five (i.e., there is no data supporting a clear line between two versus three of the criteria). Therefore, most evidence points to a dimensional approach where symptoms or disorders may be expressed in varying degrees (i.e., shades of gray) rather than clear “you have it or you don’t.” DSM-V anticipates heading in this direction.

The length of time symptoms need to be manifested for a disorder to be diagnosed is another example of over-specificity. Many criteria state that the symptoms must be present for at least X number of weeks. Again, there is insufficient data on the implications of a patient evidencing it two days less than the indicated two weeks.

Most importantly, studies of prognosis and predictive validity are hampered by not controlling for the appropriateness of the treatment program the patient is receiving. For example, most children with autism are believed to continue to evidence the symptoms of the disorder five to eight years in the future. But how many of these children were in inappropriate or inadequate treatment programs? Prognosis with an optimal treatment program is not yet definitively known, due to the lack of comparative clinical trials of the most promising approaches and lack of a sufficient number of long-term naturalistic studies (Committee on Educational Interventions for Children with Autism, 2001).

Reliability studies are also fraught with problems. Criteria that are easy to agree on are not necessarily the criteria that are meaningful for clinical planning or research on etiological factors and developmental pathways. In general, there is a healthy tension between the goal of capturing the true complexity of multifaceted clinical phenomena and developing criteria that can be reliably judged and employed in research. It is vital to embrace this healthy tension and pursue a step-wise approach where complexity and clinical usefulness is a cornerstone for efforts at increasingly systematic operational definitions and research on reliability and clinical validity. A scientifically-based system is one that recognizes a step-wise progression that begins with accurate recognition and description of complex clinical phenomena and builds gradually through a series of steps toward empirical validation. Oversimplification or favoring what is measurable over what is meaningful does not serve the creation of a scientifically-based system.

At present, it is important to acknowledge that we do not yet have an empirically validated diagnostic system for mental health, developmental, and learning disorders of infancy and early childhood. We do have emerging data and a great deal of clinical experience. Therefore, an accurate statement of the field is that it is currently operating on expert consensus with supportive, but incomplete, data.

Because of these and related considerations, as indicated above, there is a general movement towards more dimensional approaches to classification. Furthermore, dimensional approaches recognize that many difficulties exist in terms of degrees of challenge, rather than with clear boundaries. Dimensional approaches recognize the multiple components which may contribute to a disorder.

MULTIDIMENSIONAL CLASSIFICATION BASED ON THE DIR MODEL

As indicated, dimensional approaches tend to be based on an implicit understanding that most mental health and developmental disorders are based on complex dynamic, developmental processes. We have formulated a developmental, biopsychosocial model to describe these processes that contribute to mental health, development, regulatory-sensory processing, language, and learning disorders in infancy and early childhood—the Developmental, Individual-Difference, Relationship-Based (DIR) approach. The DIR approach focuses on **(D)** Developmental capacities - the level of emotional, social, and intellectual functioning (technically called functional emotional developmental capacities). It also focuses on biologically-based **(I)** Individual processing differences in the way an infant or young child reacts to and comprehends different sensations, such as auditory, visuospatial, or tactile, as well as the way in which the child plans, sequences, and executes actions. It also focuses on the **(R)** Relationships, including child/caregiver/family and other relationship patterns. (This model is described more fully in Appendix 1 of this manual.) A diagnostic classification system for infancy and early childhood mental health, developmental, language, and learning disorders based on our dynamic, developmental model facilitates understanding of these disorders and, most importantly, guide intervention and treatment planning.

A vital feature of a dynamic, developmental approach is that it emphasizes the multiple relationships between different areas of development. Infants and young children with a specific type of problem often have challenges in many related areas of functioning. For example, a preschooler with an impulse control problem will often have challenges in terms of caregiver/child interaction patterns and different aspects of sensory processing, language, and cognition. Similarly, children with language problems may often also evidence contributions from challenges in motor planning and sequencing and other aspects of sensory processing.

Thus, a comprehensive approach to infancy and early childhood requires a multidimensional and multidisciplinary focus which includes a number of axes. It should be highlighted, however, that a dynamic, developmental, multi-axial approach that includes all the relevant dimensions of human development is especially vital for a diagnostic system for infants, young children, and their families. During infancy and early childhood, not only is the brain and mind growing more rapidly than it ever will again, but it is literally forming the relationships between its different components. Attending to these inter-related components is vital in classifying disorders as the basis for meaningful intervention planning and research.

A CLINICALLY MEANINGFUL APPROACH

It is very important to make sure that what is considered expert consensus represents the most meaningful diagnostic classification approach possible. This means that it is necessary to have an approach that is based on clinically meaningful categorizations that recognize dimensional processes and the full range of human functioning (i.e., the depths of human feelings and relationships) and also takes into account what is known about developmental pathways, etiology, and response to optimal interventions.

Recognizing these important goals enables us to climb the steps of science without skipping over important ones. If we sacrifice meaningful categorization for quick reliability, we wind up with a system fraught with problems. Agreement does not suggest clinical validity. Therefore, the next goal is to improve our conceptual framework by deepening and broadening it. We can then use it as the basis for future studies that enable the field of infant and early childhood mental health and development to progress in a more integrated manner which recognizes the interactive and interrelated components of development and human functioning.

Clinical Judgment and the Diagnostic Process in Infancy and Early Childhood

The diagnostic process for infants, young children, and their families requires clinical experience and judgment. As indicated, clinical science must progress in an orderly sequence, beginning with observations and descriptions that capture the true complexity and subtlety of the phenomena being dealt with, and then gradually progressing to more and more refined operational criteria that can be reliably measured and employed for studies of predictive validity, etiology, and intervention efficacy.

As will be seen in the body of this manual, the ICDL workgroups were extremely cautious in the way they approached the complex, clinical phenomena that characterize infant and early childhood disorders. Premature attempts at specificity are avoided and rich clinical descriptions are emphasized.

UNIQUE FEATURES OF THE ICDL-DMIC

The ICDL-DMIC has a number of unique features that operationalize the perspective outlined above. For example, each of the disorders classified under the heading “Interactive Disorders” is described in terms of its clinical phenomena, presenting symptoms, developmental pathways, and therapeutic implications. In addition, each disorder is described along a number of axes, which attempts to capture and emphasize an important component of, and/or contributor to, the disorder. These include the infant’s or young child’s level of emotional and social functioning, child-caregiver and family interaction patterns, motor planning and processing differences (regulatory sensory processing profile), language functioning, visuospatial capacities, and unique stressors that may be affecting the child and his or her family.

The goal of the DMIC is to present both a rich, detailed clinical picture of each infant or young child and his or her family and, at the same time, provide a framework for systematically organizing these rich descriptions into clinically meaningful categories. It is this balance—comprehensiveness and systematization—that guided the ICDL workgroups in creating this manual. The goal is to provide a diagnostic system for infancy and early childhood mental health and developmental learning disorders that provides the basis for understanding the nature of the child’s challenges and for formulating comprehensive and effective intervention approaches.

Another goal is to provide a diagnostic system that is useful for research into etiology, early developmental pathways, and intervention outcomes. Only a diagnostic system

that describes the full complexity of disordered functioning and characterizes different subtypes can provide a basis for basic research on underlying etiologies and developmental pathways (see, for example, the section on the different subtypes for Neurodevelopmental Disorders of Relating and Communicating—200).

OVERVIEW OF THE ICDL-DMIC MULTI-AXIAL SYSTEM

The approach presented in the following sections reflects ICDL's developmental framework for classifying the full range of infant and early childhood mental health, developmental, and learning disorders. We will consider three broad categories of mental health disorders:

1. **Interactive Disorders**, involving symptom patterns such as anxiety, depression, and disruptive behaviors;
2. **Regulatory-Sensory Processing Disorders**, involving symptom patterns such as inattention, overreactivity, sensory seeking; and
3. **Neurodevelopmental Disorders of Relating and Communicating**, involving symptom patterns, such as self-absorption, perseveration, and dysfunctional communication (e.g., ASD patterns).

These categories include the kinds of problems that are currently conceptualized in DSM-IV-R, but not in a sufficiently developmental or comprehensive manner.

Interactive Disorders refer to challenges where a primary contribution to the difficulty stems from the infant or child-caregiver interaction patterns and related family and environmental patterns. Regulatory-Sensory Processing Disorders refer to those challenges where differences in the child's constitutional and maturational variations, in terms of sensory over- or underreactivity, visuospatial, auditory and language processing, or motor planning and sequencing difficulties are a primary contributor to the child's challenges. Neurodevelopmental Disorders of Relating and Communicating refer to developmental disorders, including autism spectrum disorders, where there are significant difficulties with the fundamental capacities to relate, communicate, and think.

Neurodevelopmental Disorders of Relating and Communicating often include regulatory-sensory processing difficulties and interactive difficulties. If, however, basic relating, communicating, and thinking are disrupted, the problems would be classified under this category. Regulatory-Sensory Processing Disorders may also involve interactive difficulties. However, if constitutional-maturational variations are a significant contribution, the problems are classified in this category. Interactive Disorders may involve constitutional and maturational variations as well as infant-caregiver interactions. However, in Interactive Disorders, the constitutional-maturational variations are not in the clinical (i.e., disordered) range and the major contributor to the problems stems from the caregiver-child interaction and related family and environmental patterns.

The only exception to the principles stated above relates to disorders involving trauma. These are classified under Interactive Disorders. Reactions to trauma may involve

regulatory-sensory processing changes, such as sensory over-responsiveness; responses to trauma may also often involve anxiety or depression. When a clear trauma can be identified and is clinically thought to be responsible for the symptoms, priority is given to the diagnosis of traumatic stress disorder.

In addition, a new feature of our diagnostic manual is the inclusion of Language Disorders and Learning Challenges.

Language Disorders include challenges in communication in the context of a developmental framework that considers all components of language (e.g., gestures, motor, sensory, social, etc.). These can constitute a primary disorder when not part of another major disorder, such as Neurodevelopmental Disorders of Relating and Communicating. Language capacities also have their own profile (see Axis IV) because of the significance of language in development, as well as its impact on overall development.

Learning Challenges are included in this classification in order to identify the early pathways associated with later learning differences and challenges at school age. The goal is to optimize early interventions which may head off or ameliorate these challenges later. These include learning difficulties in reading and reading comprehension, math, and written expression, as well as organizational capacities (i.e., executive functioning).

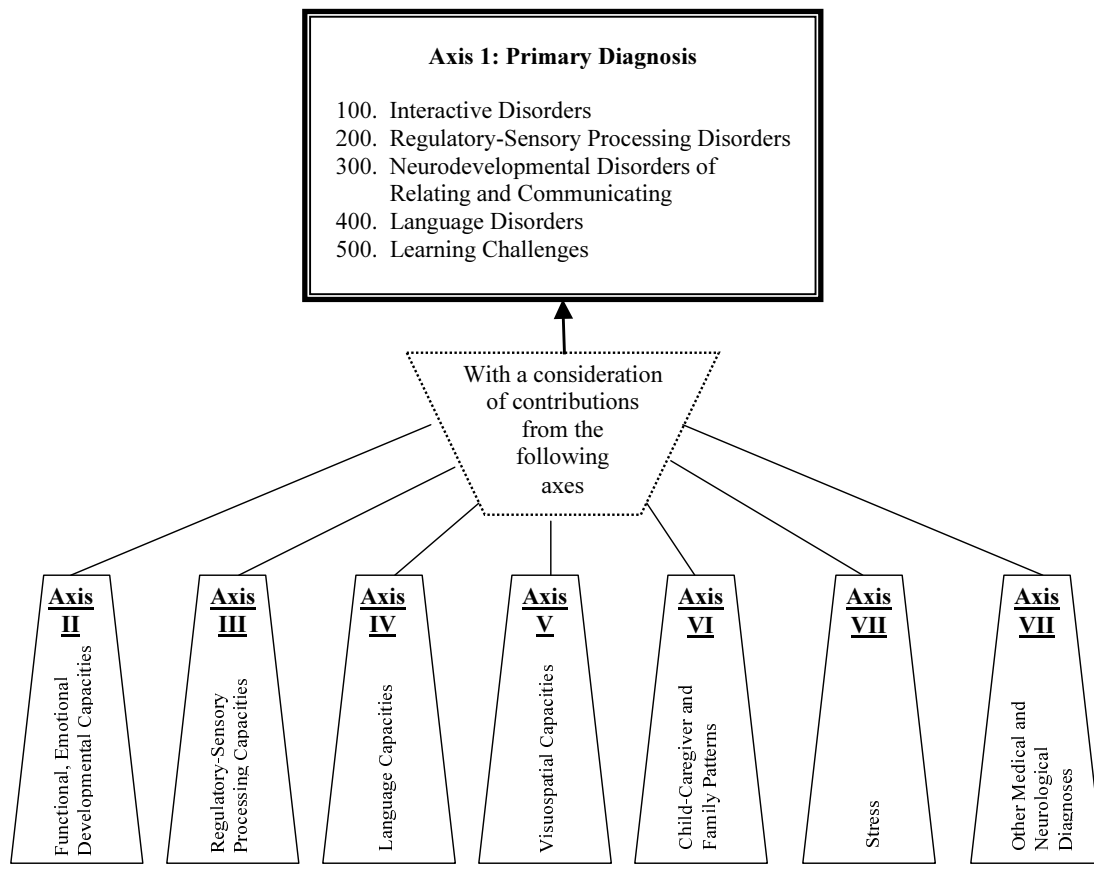
A child may evidence a Language Disorder or Learning Challenge in addition to Interactive or Regulatory-Sensory Processing Disorders. However, if a child evidences Neurodevelopmental Disorders of Relating and Communicating, her language or learning problems would be subsumed under the broad umbrella of that neurodevelopmental disorder.

ICDL Multi-Axial Classification Approach

The approach to classifying infant and early childhood disorders should always include a comprehensive evaluation, a clinical formulation, and recommendations for a comprehensive intervention program. Appendix I specifies the approach to comprehensive assessment and evaluation and Appendix II, the framework for planning a comprehensive intervention program.

In order to organize the information from a comprehensive evaluation and to capture the unique qualities of each infant and young child and his or her family, it is essential to construct a comprehensive view of each child that includes presenting problems and functioning captured by Axis I, Primary Diagnosis, as well as other relevant capacities that are necessary to understand the child and his family and plan an appropriate intervention program. These include a functional emotional developmental profile, a regulatory-sensory processing profile, a language profile, a visuospatial profile, caregiver-infant and family patterns, stressors, and other medical or neurological diagnoses. These profiles form the basis of a multi-axial diagnosis. Axes II through VII are accompanied by clinical ratings or descriptions where the clinician may indicate the relative degree to which a particular capacity has been mastered. Each is briefly described below and is summarized in Figure 1. More detailed criteria are contained in following sections.

Figure 1: Diagram of Multi-Axial Approach



- **Axis I–Primary Diagnosis:** The broad diagnostic category—Interactive Disorder, Regulatory-Sensory Processing Disorder, Neurodevelopmental Disorder of Relating and Communicating, Language Disorder, and/or Learning Challenges—and the specific type of disorder within the category.
- **Axis II–Functional Emotional Developmental Capacities:** The relative mastery of each of the functional emotional developmental capacities, including shared attention and regulation, engagement and relating, two-way intentional, affective signaling and communication, long chains of co-regulated emotional signaling and shared social problem solving, creating symbols or ideas, building bridges between ideas- logical thinking.
- **Axis III–Regulatory-Sensory Processing Capacities:** The regulatory-sensory processing capacities, in terms of sensory modulation, sensory discrimination, and sensory-based motor abilities, including postural control and motor planning.
- **Axis IV–Language Capacities:** Includes gestural and verbal communication (comprehension and production) at each developmental level.
- **Axis V–Visuospatial Capacities:** The progressive development of visuospatial aspects of body awareness and sense thinking, location of the body in space, relation of objects to the self and other objects and people, conservation of space, visual logical thinking, and representational thought.
- **Axis VI–Child-Caregiver and Family Patterns:** Characteristics of infant or child-caregiver interaction patterns and family or environmental patterns.
- **Axis VII–Stress:** Stressors related to situations, conditions or events in the family’s or child’s life which can impact the child’s emotional functioning and development when appropriate protective factors or adequate resiliency are not evident.
- **Axis VIII–Other Medical and Neurological Diagnoses.**

While the multi-axial approach summarizes the child’s functioning, it does not replace the narrative developmental formulation that describes in more detail each of the factors outlined in these axes.

As may be apparent, different disciplines may have different degrees of familiarity with the concepts embodied in these axes. For example, occupational therapists may be quite familiar with the content of the regulatory-sensory processing axis, but less familiar with the axis describing functional emotional developmental levels. Mental health professionals may be more familiar with the functional emotional developmental levels axis and the family and interactive patterns axis and less familiar with the regulatory-sensory

processing or language axes. The visuospatial processing axis may be relatively unfamiliar to many experienced clinicians. Clearly, a team approach with different professionals collaborating may be very helpful in formulating a comprehensive diagnostic profile that includes attention to all the axes outlined above.

In addition, individual clinicians using this system may find that they can comfortably use some of the axes but not others. Use of the full system may be viewed as a goal to strive for. As that goal is being pursued, we hope the use of the axes one is familiar with, coupled with an awareness of the importance of the other dimensions functioning and the possible need for consultation with colleagues is very helpful. The long-term goal is to have more and more clinicians working with infants and young children with emotional, developmental, language, and/or learning challenges to have opportunities for additional training and experience that would permit the full use of this system.¹

SELECTING A PRIMARY DIAGNOSIS

Most infant and early childhood disorders are characterized by multiple elements or dimensions, for example, interactive and family patterns, and regulatory-sensory processing patterns. These disorders include anxiety, and mood disorders, disruptive behavior, elective mutism, as well as sleep, eating, and elimination disorders. A multi-axial approach allows a systematic description of each of the contributing elements. However, the primary diagnosis is made based on a clinical judgment regarding the predominant contributing factor. Before concluding on a primary diagnosis, all the axes must be fully evaluated in order to determine the various dimensions contributing to the presenting problems. Once all this information is considered, clinical reasoning guides the experienced clinician in selecting the predominant pattern.

The decision process would first consider the most comprehensive disorder where multiple elements of development are derailed. For example, Neurodevelopmental Disorders of Relating and Communicating includes Regulatory-Sensory Processing Disorders, Language Disorder, and emotional constrictions. When relating and communicating are not significantly derailed then the Regulatory-Sensory Processing Disorders are considered next to see if the presenting behavioral patterns are coupled with motor and/or regulatory-sensory processing challenges. When a regulatory-sensory processing contribution is significant, it takes precedence over the interactive elements in the designation of the primary diagnosis.

When the primary diagnosis is an Interactive Disorder, more than one type of Interactive Disorder may be identified. Since there is so much overlap in the symptoms of the various Interactive Disorders, the clinician must consider when the symptom is part of a broader disorder such as anxiety, mood or disruptive behavior, and when it is itself the primary disorder. In other words, clinical reasoning must determine if the multiple symptoms are significant enough to constitute an additional diagnosis or are part of the

¹ To that end, the Interdisciplinary Council on Developmental and Learning Disorders (ICDL) offers a variety of training programs and is increasing the availability and comprehensiveness of these programs, including plans for a graduate degree program in the near future (see <http://www.icdl.com> and <http://www.floortime.org> for further information)

primary problem. For example, if a child with Anxiety Disorder also has sleep problems, but the sleep problem is intermittent or a temporary disruption of a developmental capacity already mastered, along with possible other disruptions in eating or toileting, then an additional diagnosis would not be necessary. However, if the sleep problem is very intense or of longer duration, and also meets the description of the primary disorder, then it could be considered a second primary diagnosis. Similarly, if a child manifests disruptive or oppositional behavior, Anxiety Disorder or Disruptive Behavior Problem could be considered and the differentiating consideration would be whether the child has a pattern of impulse control problems in various situations or emotional states. If not, then Anxiety Disorder may be the only primary diagnosis selected. More than one diagnosis is permitted under this system. In addition, as indicated earlier, we emphasize a Language Disorder or Learning Challenge can be used as a second primary diagnosis when a child evidences a significant difficulty in either of these areas of functioning.

CLINICAL THRESHOLDS FOR DIAGNOSIS

Deciding when a behavioral or emotional pattern constitutes a disorder rather than a disruption or variation within the normal range presents the clinician with a challenge. This can be especially difficult during the first five years when development is proceeding rapidly and has so much variation influenced by individual differences. It is also a challenge when so many of the same symptoms can relate to different disorders given the limited number of symptoms in the infant's and young child's repertoire.

As indicated above, the attempts to define specific criteria for disorders in order to reach reliability do not always have solid evidence. In addition, many of the current classification approaches go beyond the available research in their specificity by requiring a specific number of criteria for a diagnosis. Yet, there are insufficient studies documenting what it means if the patient meets only two out of five (i.e., there is no data supporting a clear line between two versus three of the criteria).

Similarly, there's insufficient data on how long a symptom should be evidenced, as if two days less than the indicated two weeks is scientifically based. Criteria that are easy to agree upon are not necessarily the criteria that are meaningful for clinical planning or research on etiological factors and developmental pathways. We do not yet have a scientifically-based diagnostic system for mental health, developmental, and learning challenges, but we do have emerging data and a great deal of clinical experience.

Since we are currently operating on expert consensus with supportive, but incomplete, data, this classification system utilizes functional or operational considerations to make the clinical judgment of whether the presenting problems cross the clinical threshold to be considered a disorder. The following hierarchy should be considered:

- Is the child functioning within his or her age-expected functional developmental capacities? What is the range of the child's comprehension and expression of emotions with gestures and/or words or play, in comparison to age expectations?
-

This could be evaluated using Axis II–Functional Emotional Developmental Capacities, as well as other clinical information and assessments.

- How well is the child functioning within the family structure on a daily basis including routines of sleep, meals, play, relating to family, caregivers and sibling interactions? Is the environment stable? Is the child stable?
- Is the child adapting to daycare or preschool adequately and able to enjoy these environments and learning experiences?
- Is the child participating in expected social interactions, developing friendships, and able to play with peers?
- What are the child’s emerging attitudes and feelings towards himself or herself and others (e.g., angry, depressed, suspicious, etc.) in comparison to what’s expected for his or her age (e.g., some degree of negativism is expected during the pre-school years)?

The child may present significant challenges in any one of these areas which may be sufficient to warrant a diagnosis—for example, difficulties in relating and communicating. In some cases, more than one area may be involved but the problem may not be spilling over significantly to preschool or peer play, such as a disorder of emotional range and stability where constrictions are significant and family interactions cannot support healthier emotional development. Sometimes the threshold is not crossed until the preschool brings the problem to the attention of the family—the problem may not be perceived or evidenced at home, yet is significantly impeding the child’s adaptation at school. The greater the number of areas of functioning that are involved, the more likely a diagnosis is indicated.

Furthermore, in addition to the detailed descriptions of the primary diagnosis to guide clinical judgment, Axes II through VII require a clinical formulation indicating the degree to which impairment is evident. The more severe the impairment or delay of the expected developmental capacities, the greater the evidence for the disorder(s). Clinical judgment relies on evaluating the functional or operating areas and each of the dimensions in this multi-axial system to determine if the clinical threshold for a diagnosis has been crossed.

Even when the clinical threshold is not crossed, the diagnostic process and evaluation provides the parents with a better understanding of their child’s profile of strengths and vulnerabilities and allow anticipatory guidance to better support the development of the child and family in the future.

In the sections that follow, each broad group of disorders is described and selected therapeutic implications are considered.

Making a Diagnosis: Case Illustration Using the ICDL-DMIC Multi-Axial Approach

In the prior section, we briefly described the primary diagnoses that need to be considered and the different axes that need to be taken into account. In order to illustrate how to decide which primary diagnosis is most appropriate and utilize the different axes, this section presents a case study that illustrates how a trained DIR clinician approaches a differential diagnosis in a complex case and uses the multi-axial evaluation to organize a comprehensive treatment plan.¹

Making a proper diagnosis, particularly when many competing diagnoses are possible, is important. An appropriate diagnosis can lead to the best intervention plan to help the child move forward and make consistent progress. However, as indicated earlier in this manual, a diagnosis, even a multi-axial one, is only a summary of the detailed developmental profile captured in a narrative description of the child. As the illustration below demonstrates, however, the narrative description can be systematized by the recommended multi-axial diagnostic approach described in this manual and summarized into meaningful categories.

There are also brief case vignettes following the discussion of some of the primary diagnostic categories. These are intended only to illustrate that category, not the use of the entire profile, as is the goal of the following case study.

CASE ILLUSTRATION

Case History

Charlie first came in at age 3½. His parents told me that he had already been diagnosed with a number of different labels and they were completely confused. One of his presenting problems was that he wasn't playing with peers at his preschool and tended to either play alone or avoid the other children. During one evaluation, he was therefore labeled Social Anxiety Disorder.

This little boy also had difficulty with language. He could speak, but wasn't always able to understand complex instructions that would be appropriate for a 3 to 3½ year old, like a two- or three-step suggestions (e.g., "Please get the teddy bear and the truck and bring them to me"). If asked why he wanted to go outside, he would often look confused. Sometimes he could answer a question, such as "Where is the car going?" and other times he would ignore the question and just push his car forward. These challenges had led to a diagnosis of Language Disorder.

Occasionally, his parents reported, Charlie would jump around the room in a seemingly aimless way, particularly if he got excited. At those times, he would flap his hands a

¹ The DIR Institute provides an interdisciplinary educational program and DIR® Certificate Program for clinicians to conduct assessment and intervention using the DIR approach. See www.icdl.com for further information. It may be useful to review this case again after reading the entire manual.

bit and walk on his toes. Other times, he would seem to get mesmerized by a fan or by looking toward a light. However, his parents could usually draw him away from those occupations by touching him or getting in front of him. Nonetheless, they were concerned about these patterns.

In one evaluation, the diagnostician put together Charlie's social problems with peers, language challenges, and his tendency to become a little bit aimless, jump up and down and flap his hands (what the clinician called "self-stimulatory behavior"), and made a diagnosis of an autism spectrum disorder. She also used the term, PDD-NOS (Pervasive Developmental Disorder, Not Otherwise Specified). This is a diagnostic label usually reserved for a child who has features of autism, but who might not meet all the criteria necessary for that disorder. PDD-NOS, however, does place a child on the autism spectrum.

During an evaluation with an occupational therapist, the parents reported that their son was very reactive to certain types of sensations. In loud, noisy rooms, for example, with a lot of music or with children speaking loudly, he would cover his ears and seemed to get over-stimulated. Also, Charlie had difficulty chewing and even swallowing some very chewy kinds of foods. The occupational therapist felt that he had a sensory integration problem, as well as low muscle tone in parts of his body. She also diagnosed him with planning difficulties (dyspraxia).

Charlie's parents felt confused by the myriad diagnoses and the many different intervention recommendations they received as a result of them. For the PDD and autism spectrum disorder a special needs school with an autism program was recommended. For the language problems, an intensive speech therapy program was recommended to help him reach age-expected language levels. Occupational therapy was recommended to work on Charlie's muscle tone and sensory modulation and sensory integration challenges. For the Social Anxiety Disorder, the clinician recommended a consideration of medication, even though Charlie was only 3½, to reduce his anxiety. The parents were concerned because the medication suggested was an SSRI-type in the categories of Paxil, Prozac, etc., and they had read in the newspapers recently that that might be associated with negative side effects.

Formulation of the Primary Diagnosis: Axis I

It was clear from this background that we needed to do a fresh and complete evaluation to get a picture of what was going on with Charlie. In that way, we could formulate a proper diagnosis and intervention plan. We used a multi-axial approach to formulate the diagnosis, using a consideration of the Axes II - VII, along with the Axis I considerations, to observe and describe Charlie in many areas of functioning.

The Parents' Report

We began by helping the parents talk more about their current concerns, and where they thought Charlie had vulnerabilities and strengths. Since his vulnerabilities had been

described when we took the history, we explored what they thought were Charlie's strengths.

For example, even though he was anxious at school and avoided the other children, at home with his parents he could be very warm and intimate, crawl up into their laps and want to cuddle. He loved sitting late at night with his father, looking at pictures in a book. He also had a very close relationship with his mother. Charlie and his mother would roll trucks on the floor during the daytime in fun games and she reported that he liked to come into the kitchen when she was cooking. Sometimes he would get out a little toy pot and pretend to stir and cook with her. They felt that he was a very loving little fellow.

The parents pointed out that, at times, Charlie could be very creative in his pretend play. When mother played with trucks with him, for example, sometimes the trucks would go and visit daddy's office. If she asked him why the truck was going there, though, he often couldn't answer. Sometimes, he just changed the subject and had the truck bang into daddy's "office," as though he got a little anxious with a question he couldn't answer. Mother felt Charlie had little creative flairs where he would invent something new in the play from time to time. She also felt his strength was that he could tell her when he wanted. If he wanted some juice or to watch a favorite video, he would ask, "Mommy, can I watch the Barney tape?" or "Can I watch this or that?" If she said "No," he would sometimes get upset, but she also thought it was a strength that he wouldn't throw a major tantrum. He might stomp around a bit or whimper, but then he would recover after a few minutes.

In terms of his developmental history, the parents reported that Charlie progressed as expected and was looking at them as a little baby. He was able to smile by 3 or 4 months and seemed happy. He was able to be purposeful in terms of reaching for and interacting with them, and he made sounds and babbled back-and-forth with them before the end of his first year.

Charlie was a little delayed in rolling over, crawling, and walking. He didn't walk until about 15 months, which concerned them. Even now, they reported, he was not as well coordinated as the other children, and this fit in with what the occupational therapist had said to them about low muscle tone and difficulty with motor planning and sequencing. The parents also noted that it became very clear in his second year of life that he was very sensory responsive to things like loud noises and certain kinds of touch - he only liked soft, cotton garments and didn't like rough or even synthetic garments. He got fussy when things were near his skin that he found uncomfortable.

Charlie's parents reported that he began using words a little bit late, using two words together closer to age 2. He had some single words around 18 months, but wasn't progressing like other children in terms of understanding "why" questions or even complex "where" questions. However, he seemed to be making progress.

Charlie had no unusual medical disorders. He had shown some eczema as a baby and they had eliminated milk products to help with that problem. They still kept milk and dairy products away because of his tendency toward eczema. That seemed to be helpful.

Clinician's Observations – Functional Emotional Developmental Capacities – Axis II

We began our observation of Charlie by assessing his functional emotional developmental levels. We looked at the areas of shared attention, engagement, two-way purposeful communication, shared social problem solving, the creative use of ideas, and the logical use of ideas.

We observed Charlie very carefully as he played with his mother and father in the office. First we observed their spontaneous play and then we observed how they played together when we gave them some suggestions to help bring out Charlie's highest level of functioning.

We saw that in a one-on-one situation in a calm environment without noise and a lot of other children around, Charlie was able to focus and attend (Level 1) and interact with his mother and father, rolling cars or trucks back-and-forth. He was able to show a lot of joy and happiness and smiled warmly at his parents during the play (Level 2). He made a lot of gleeful sounds when, for example, his father blocked his truck and he had to make his vehicle into a "flying truck." He was able to be purposeful, engaging in a lot of back-and-forth, two-way communication with vocalizations back-and-forth and gesturing (Level 3). At one point, Charlie took his parents by the hand to go to the door because he wanted to go out to get a toy that he had seen (Level 4 – Shared Problem Solving). Although he couldn't explain why he wanted the door opened, eventually Charlie was able to say, "Toy, toy there" (Level 5). It required some multiple-choice help to get him to be able to answer the question, however. We got a toy from the other room and he came back in as a happy boy and used the toy, a little gas station, to fuel his cars.

Sometimes Charlie seemed to get distracted from his play themes, jumping from one idea to another. He could meet physical challenges in his play with a little bit of support and help from his parents, but he tended to get avoidant and change subjects rather quickly when the shared social problem solving aspects (Level 4) got a little bit challenging.

Charlie could be creative in his use of ideas (Level 5) and he could use his available language, expressing simple phrases or sentences to respond to his father saying, for example, "What's this?" or "Where is the car going?" "Going to school or garage?" He could use language meaningfully, for example, when he asked for some juice, "Can I have juice now?" (Level 5). He could also respond to, "Are you thirsty or hungry?" and indicate he wanted, "a lot of juice" when shown two glasses, one with a little and one with a lot. One time, he said "Going to school...play with Zoogie (a stuffed animal he loved at school)." He then took the toy car and an action figure to the play school house. Here he was showing nice potential for expanding his creative play.

When it came to connecting his ideas together (Level 6), Charlie could answer most of the “w” questions (what, where, and who), but had trouble with “why” questions. With multiple-choice help, however, he could get them. With lots of back and forth conversation he understood the “why” questions, but didn’t quite have them fully mastered. He could, however, tell you how he felt when obstructed.

Charlie showed lots of good capacities in the functional emotional developmental levels when we observed him in pretend play, interacting with parents. He evidenced competencies at all the levels, with sluggishness at the sixth level of combining ideas together to elaborate in logical ways. He also needed work on expanding his imaginative play and his flexibility with shared social problem solving. The constrictions seemed to be related, in part, to his motor planning and language challenges.

Clinician’s Observations: Regulatory-Sensory Processing – Axis III

As we were observing Charlie’s functional emotional developmental capacities, we also looked at his sensory, motor, and visuospatial processing capacities (Axis III). For example, one time in the play, his father set up a challenge that meant Charlie had to climb over something, which was difficult for him. Rather than follow through, he just went to the other side of the room and started playing by himself with another toy. We encouraged the father to go over and join Charlie with that other toy and then to move the toy behind the barrier he wanted Charlie to climb over, offering to help him get to it. With that assistance, Charlie allowed his father to help him and he climbed over the barrier, got to the other side, and got the toy he wanted. In general with hard motor tasks, Charlie tended to avoid and give up easily. He also had a little trouble with sequencing and with putting many steps in a row together to solve a problem.

At one point, we took out some drawing paper and crayons. Charlie had difficulty holding the crayons—he tended to “fist” them. He could scribble, but not really make circles or other shapes or copy shapes his parents drew. He did seem to enjoy just scribbling with a fistful crayon and making colors.

Also, we played some “Simon Says” games to see whether or not he could do two or three things in a row. He could do one thing like, “touch your nose” or “touch your head,” but had a hard time doing two or three commands in a row (“Touch your head and then your nose”). Importantly, however, when I asked him to just verbally repeat three things that I said, he could do so easily, suggesting that his challenge was more in the area of executing the sequence of actions, rather than his remembering or sequencing a series of ideas.

To check for reported over-responsiveness to sound, we suggested that father “toot” the horn on his toy truck. Sure enough, as father’s toots became loud, Charlie held his ears, got a little fidgety, and began jumping around, walking on his toys and shaking his hands a little bit. He was clearly overloaded by the loud sounds. This also indicated that when he got sensory overloaded, he wasn’t able to coordinate his body in a rhythmic or organized way. He needed to do the jumping and hand shaking as a way of dealing with the sensory overload.

At the end of the observation period, we had a good picture of Charlie's regulatory sensory processing challenges. He evidenced some motor planning and sequencing challenges, or dyspraxia, and some muscle tone difficulties. This contributed to making postural control, or balance, and coordination a little bit harder for him. These also made fine motor skills harder for him (e.g., holding the crayon properly). These challenges, plus his sensory over-responsivity were consistent with what we call Regulatory-Sensory Processing Disorders (Axis I – 200s).

Clinician's Observations: Language Capacities – Axis IV

During our observation of Charlie and his parents at play, we also looked at his language functioning very carefully. Typically between age 3-3½, children are learning to answer “why” questions and he was just beginning to learn to answer them. However, he was quite creative in his pretend play, as indicated earlier, and could, for example, talk about the fact that “I am mad and I'm going to bang my car into your truck,” when I challenged him with, “What are you going to do now that I'm blocking your road?” He was also able to tell me who he liked at school, his favorite food, and that “Mommy plays with me a lot” and “Daddy is at work and doesn't play.”

In terms of language functioning, he showed relative mastery (though he needed work to expand these capacities) of the first five levels described in our language axis (from self-regulation, engagement, and two-way communication up through using word combinations and sharing meanings). He wasn't quite as far along in the sixth stage of Early Discourse, as would be optimal, but was on the right trajectory. My impression was that with a little greater emphasis at home on shared pretend play and back-and-forth conversations, Charlie would make good progress.

Clinician's Observations: Visuospatial – Axis V

We also looked at Charlie's ability for visuospatial processing. Although his motor problems made it hard for him to copy shapes, he also didn't seem to have a very good understanding of the way visual designs were constructed. For example, when I asked him to show me how to make a shape, in spite of his otherwise functional verbal abilities, he was unable to direct my hands.

In addition, we played a little search game in the room to see if he was a systematic searcher, and whether or not he could take into account the whole room and figure out a systematic search strategy. Here Charlie showed challenges when he looked in two places and then gave up and got distracted, rather than searching in all four corners of the room. He was able to be cautious about his boundaries with me and his parents (i.e., not invading our space). At the same time, however, he found it hard to anticipate where a ball was going to end up when I rolled it in his direction. He also found it hard to build even simple structures out of blocks. Therefore, the initial impression was that visuospatial capacities required further observation and would likely require some intervention work.

Clinician's Observations: Child-Caregiver Family Patterns – Axis VI

We also explored the family patterns and family relationships. We found that there was a solid relationship between mother and father and there was no marital stress or problems. There were no siblings yet, although they were hoping to have more children.

When we watched the parents play with Charlie, we were looking for whether they were intrusive or over-stimulating, or if they were having trouble being soothing and calming. They seemed to relate to Charlie at each of his developmental levels. They were calm and regulating; they were engaging. They were interactive and were also quite creative in the way they wanted to play with him.

In terms of the family dynamics, we didn't see any real interactive reasons for Charlie's anxiety. This helped us rule out one of our Interactive Disorders (100s). Although we did see Charlie's anxiety, we didn't see an interactive anxiety-based problem.

We also looked at interactive caregiver/child interactions and family functioning. Here we saw some relative strengths. This family seemed to be supporting Charlie's development, and, in fact, it was my impression that he was doing as well as he was doing because of the strength of the way his caregivers were interacting and playing with him, and the warmth one could feel in the whole family. There were relatively strong family patterns that were helping this child negotiate and navigate development and make consistent progress, even though there were some constitutional-maturational variations resulting in the regulatory-sensory processing and language challenges.

Clinician's Observations: Stress – Axis VII

During the course of the clinical session, we looked for stressors in Charlie's life as possible contributing factors. In this family, there were no unusual stresses, no recent illnesses, grandparents passing away, moves from one house to another, or job changes for the parents. The only stress for this little guy was trying to cope with preschool and the noise and activity level in the classroom.

Clinician's Observations: Other Medical and Neurological Diagnoses – Axis VIII

Finally, we looked for other medical or neurological diagnoses that might have contributed to Charlie's challenges. According to parent reports and medical records, other than a history of some allergies and eczema, he had been pretty healthy. There was no history of seizures or metabolic disorders. Charlie had regular pediatric evaluations and there were no physical contributions to his challenges, other than the ones we described in terms of the uneven maturation of his central nervous system.

Diagnostic Impressions – Summary of Observations

When we put together the history, the review of his current functioning, the challenges, and the observations just made in the clinical setting, we were able to come to a

picture that helped us see Charlie in terms of his unique developmental profile. This allowed us to consider a proper diagnosis and plan an appropriate intervention plan tailored to his individual needs.

Although by history we knew that Charlie had been given a number of diagnoses—including Social Anxiety Disorder, PDD-NOS, Autism Spectrum Disorder, Language Disorder, and Sensory Integration Disorder—we now wanted to see this child’s functioning as a whole. The key to making a proper diagnosis is not to give a separate label to each component, but to see how all these different pieces fit into one pattern.

First, it was important to see if it was possible to rule out some of the diagnoses that were given. The most severe one, and the one that was greatly worrisome to the parents, was the Autism Spectrum Disorder and the PDD-NOS diagnoses.

Using the information gleaned from our observations along the axes during the clinical sessions, we saw some of the behaviors that are usually associated with these disorders, but we also saw some strengths that were not usually associated with them. When Charlie got overloaded, he showed some tendency to hand flap and to jump up and down. He was avoiding other children at school, but he appeared to have a very nice capacity for warm intimacy. He was able to signal with his emotions and get into reciprocal back-and-forth emotional signaling. He was also able to use his emerging ideas very creatively (based on his affect or emotions). His ideas were driven by his wishes, needs, desires, or feelings. He wasn’t scripting his ideas or just using his memory. He was making progress in becoming a logical thinker.

The fact that he was avoiding other children seemed more related to the sensory overload, the immaturity in his motor system, the low muscle tone, not feeling confident in his body, and to the anxiety and confusion that he felt, than a more primary problem with relating to others.

Based on the observations primarily in Axes II, III, and VI, we felt that Charlie did not evidence either an Autism Spectrum Disorder or PDD-NOS, which in our diagnostic classification system would have fallen into the Neurodevelopmental Disorders of Relating and Communicating (300s).

Next we looked at the possibility of Interactive Disorders (100s). Since Charlie was anxious at school, and we could see him get anxious whenever the task was hard, what would be the best way to characterize the anxiety? Would these anxiety patterns fit into an Axis I primary diagnosis of 101. Anxiety Disorder?

Again, when we observed Charlie in session through the course of the complete evaluation described above, we formulated a profile of his functioning, his strengths, and areas of challenge. Charlie was a warm, related, interactive, creative, bright little boy who was sensory over-responsive, who had areas of low muscle tone, and some coordination problems. His anxiety was most intense in noisy, sensory-overloading environments, such as

school or at times when he needed to sequence many movements in a row. Because he evidenced clear sensory over-responsivity and motor planning and sequencing problems, he clearly had regulatory-sensory processing differences that were related to his challenges. When they are present to a significant degree, Regulatory-Sensory Processing Disorders take precedence over Interactive Disorders.

As we described earlier, Charlie had many of the developmental foundations for language and was functioning close to age expectations in his language capacities (Axis IV), having mastered the earlier stages. The impression was that he would continue to make progress with appropriate interactions at home. Therefore, while there were some language challenges, Language Disorder as a primary Axis I diagnosis was not indicated.

Although some of Charlie's challenges might have some impact on his ability to learn as he went to school, we felt that a comprehensive intervention program aimed at his regulatory-sensory processing challenges would work on challenges related to Axis I: 500. Learning Challenges. In such an instance, it is not necessary to use a second primary diagnosis.

Diagnosis

Our diagnostic impression, therefore, was of a primary diagnosis of a 200. Regulatory-Sensory Processing Disorder. We used the 201. Over-Responsive, Fearful, Anxious Pattern (this captures his sensory over-responsivity, secondary anxiety, and avoidance of peers and other activities at school) as his primary Axis I diagnosis. We also used 205. Inattentive, Disorganized Pattern. This described his motor planning and sequencing challenges and low muscle tone, evidenced in his difficulties in carrying out multi-step actions. His other challenges, particularly in visuospatial capacities are described in Axis V. Charlie's language challenges are described in Axis IV.

Intervention Plan

Formulating the diagnosis led us to recommend and plan an intervention program that would deal with each of these areas in a supportive and comprehensive manner.

We began with the home program, recommending that his parents do Floortime with him every day. Because he was functioning well, we recommended each parent do at least two 20-minute sessions with him. At other times, we suggested that they just enjoy the interaction with their son, as they had been doing. We recommended minimizing screen time (TV, videos, computer games) to 30 minutes or less a day. In the Floortime, we recommended that they play as they had in the office, making Charlie's pretend dramas more complex and throwing in the occasional "why" question to help him think more logically. In the beginning, they could help him answer the questions with multiple choice help. In this way, we would help Charlie get more practice in receiving complex information and thinking. We suggested that the parents try out complex directions once in a while, so he would have to sequence more actions in a row and do that as part of the pretend play to help him also practice his language skills. If progress was not sufficient,

we would add in speech therapy. The home program was aimed at strengthening the Axis II Functional Emotional Developmental Capacities and helping Charlie master the higher levels of thinking and interacting.

As part of the comprehensive intervention program we designed for Charlie, we an occupational therapy treatment program to work on his primary diagnosis of Regulatory-Sensory Processing Disorder. The program would need to address his sensory modulation challenges, motor planning and sequencing difficulties, and his muscle tone problems. As a result, Charlie started attending one occupational therapy session a week with a qualified OT, and played twice a day in an active enjoyable home program. This involved games and play at home or in the park to help Charlie overcome challenges related to his primary diagnosis. At least twice a day for 20 minutes each, we suggested a physical workout involving some running, jumping, spinning, perceptual motor games (e.g., throwing, catching, kicking big Nerf balls, balance and coordination games, walking over balance beams, etc. as well as some search games—treasure hunts where he would learn to more systematically use his visual abilities to search around the room).

We incorporated Floortime into these OT activities, where climbing, swinging and obstacle courses turned into adventures searching for jungle animals on a Safari, climbing mountains, spaceships to the moon, adding pretend to elaborate movements, problem solving, language and reasoning.

To help Charlie with the social anxiety he was feeling (related to his challenges in Axis III), we wanted to get him more comfortable with his peers, taking into consideration his sensory over-responsivity. We wanted to help him tolerate wider ranges of unexpected and background sounds coming from larger groups. The first suggestion was that Charlie should work up to having four peer play dates a week. The parents had been avoiding that because “he wasn’t enjoying his friends.” However, the principle is that if the child finds it hard to do something, he requires more practice, not less, in doing that activity. The goal at first in the peer play dates was simply to create games where he and his friend would have to interact together. If they were playing nicely doing some pretend play, or just running after each other, or being silly together, that was fine – we wouldn’t interfere. But if they were moving in their own directions or getting into parallel play, we’d create a little problem solving game or drama where they had to do something together so that they would resume communication and interaction between the two of them. Initially, we recommended that the parents select peers that weren’t too noisy or rambunctious and wouldn’t frighten or overwhelm him.

In terms of his school program, we recommended that the educators and aides create an area in a corner of the room where Charlie could have his own little fort or tent area, which would be a little bit away from the other kids when needed, especially during free play. In this way he could avoid the sensory overload and not get banged into. Also, it would be less likely that he would be quite caught in the middle of the room and get overwhelmed, either visually, by sound, or by touch. We encouraged one of the aides at school to get him and another little friend on a one-on-one “play date at school” where

they could all play in the tent or small fort. Gradually, they could add another child and then another. Pretty soon, Charlie was playing with two other children in the preschool setting. This was done very gradually so he wouldn't feel overloaded.

Also, we worked with him to say, "Too loud, too loud" when it was getting too noisy. He got so he could run up to the teacher and go, "Too loud" and she could see if he needed a little break. If so, one of the aides could take him for a little walk outside or take him to a place where he wouldn't get so overloaded.

We also shortened his school day a little bit. Parents, teachers, and aides noticed that Charlie got most overloaded between 11:00 a.m. and 12:00 p.m. That was when he seemed to start jumping around and hand flapping. Therefore, we shortened his school day to between 9:00 a.m. and 11:00 a.m. That seemed to work a little better for him. We thought we could gradually expand it once he got a little more used to a wide range of sounds and more involved playing with peers.

At home, we suggested that the parents and helpers work with him on using his gestures and words to indicate when something was uncomfortable or overloading. For example, when the noise level got loud, rather than jumping, flapping, and getting uncomfortable, he could jump over to his mother and father (or helper) and say, "Too loud," using his words, as well as holding his ears. We also developed some games that he could play with music, making it louder and softer. We also had father play a lot of "modulation games," where they would do things like singing, clapping, walking, etc., soft, loud, medium loud, and loudest, sometimes using drums and other instruments, so he could be in control of some of his sound world. He was also helped to identify other unexpected sounds in the environment. He gradually learned to adapt to a wider range of surprise sounds without getting so anxious or so scared by them.

These strategies together resulted in a good rate of progress. Charlie has done very well. Interestingly, a year and a half later his language skills are age-appropriate. He's a bright little guy who is enjoying friendships. He still doesn't like big, noisy environments and finds the school yard difficult, but he enjoys one-on-one play and small groups. He is very creative in his play and enjoys superhero dramas where he too can run and leap over all kinds of obstacles in hot pursuit of the robbers. Charlie's visuospatial skills are getting better and better as his parents continue to do lots of treasure hunt games, and games involving throwing, catching, tracking, and using both his visual and motor system in space. He now better understands how space works in a larger environment as he works with his body in space. As his motor and visuospatial skills develop, he can enjoy many more activities with his friends, including playing ball, construction, moving through obstacle courses, drawing, and other kinds of games that he does as part of the occupational therapy-guided home-based play program.

Basically, Charlie is making very good progress. He and his family are seen periodically by the clinician to monitor his progress, adjust his program when needed, and anticipate next steps. We decided to start kindergarten a year later than his typical age group to

let his motor system, sensory modulation, visuospatial and language skills develop. He has responded very well to this comprehensive intervention approach and is expected to make very nice progress in a regular kindergarten class.

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