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Diagnosis and epidemiology are core topics in psychiatry and developmental medicine. There can be no clinical medical work without diagnosis. There can be no medical epidemiological study of psychiatric disorder without a consideration of diagnostic boundaries.

While both clinical medical diagnostic practice and medical epidemiology have separate roots, purposes, and methods, a number of points of contact can be identified. Modern approaches to medical/psychiatric diagnostic description have made possible the design of potent tools for epidemiological surveys, and results from such surveys are contributing to the refinement of diagnostic profiles. The current international psychiatric and developmental diagnostic systems, including multi-axial formulations, not only of illness but also of the bigger picture of the patient's clinical condition, offer challenging opportunities for interaction and progress.

Diagnostic systems in psychiatric medicine are overarching models of symptoms, problems, functional restrictions, impairments, traits, signs, and biological test markers that constitute a particular disease, disorder, or group of disorders. Among these are factor analytic models, signal detection models, continuous distribution models with statistically pre-determined cutoff arbiters, artificial network models, and clinically based models such as the *International Classification of Diseases and Disorders* [ICD; World Health Organization (WHO), 1993] and, for psychiatric disorders, the *Diagnostic and Statistical Manual of Mental Disorders* [DSM; American Psychiatric Association (APA), 1980, 1987, 1994, 2000, 2010]. A distinction is made in this chapter between such modeling issues and specific tests and procedures used to make a particular diagnosis such as autism. The latter topic will be covered in other chapters.

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Factor Analytic and Latent Class Models

Several different types of factor analytic models have been applied to the field of child and adolescent psychiatric diagnosis. There are various ways in which factor analysis can be carried out, including exploratory and confirmatory techniques, and also a related but not identical procedure, referred to as principal component analysis. Factor analytic models can be conceptualized as subclasses of latent variable models, which also include latent trait, latent profile, and latent class analyses (used separately or in combination with the so-called Rasch model).

Perhaps the most illustrative example of how factor analysis has been applied in clinical child and adolescent psychiatric/developmental diagnosis comes from the much researched – and used – material developed by Thomas Achenbach (originally with colleague Edelbrock), often referred to as the “child behavior checklist” (CBCL) or the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach et al., 2008).

The CBCL/1.5-5 and the CBCL/6-18 include 99 and 118 problem items, respectively, that can be scored by parents of children aged 1–18 years. The items refer to problem behaviors and emotions often encountered in children. A total problem score (comprising an internalizing and an externalizing score) is computed by adding scores for individual items. Subscores for aggressive behavior; anxious/depressed; attention problems; rule-breaking behavior; social problems; somatic complaints; thought problems; and withdrawn/depressed can also be calculated. The six DSM-oriented scales are affective problems; anxiety problems; somatic problems; attention deficit/hyperactivity problems; oppositional defiant problems; and conduct problems. The preschool 99-item version for 1.5–5-year olds also has a DSM-oriented scale for autism/“pervasive developmental disorder.” In addition to the CBCL for parent rating, there is a related Teacher Report Form (TRF) and a Youth Self-Report (YSR) for 11–18-year olds.

Each item on the CBCL is given the same weight in the scoring system. The various subscales have been developed on the basis of factor and principal component analytic studies, and the DSM-oriented scales have been developed on the basis of a combination of statistical and clinical studies. One of the problems with the factor analytic approach relates to the fact that many of the individual items are completely unrelated and clearly do not have the same clinical weight. In fact, it can be argued that the individual items represent 118 different problems and that the subscales, to a considerable extent, represent artificial statistically derived constructs that do not necessarily correspond to recognizable clinical entities (in spite of having been assigned names that would suggest a clear correlation between the research and the clinical concept). This problem is not unique to the development of the CBCL (and related material) but applies equally to a number of other much used scales, including the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1999) and the Autism Spectrum Screening Questionnaire (ASSQ; Ehlers & Gillberg, 1993).

A good example of how factor analytic models can be used to increase precision and understanding of a heterogeneous clinical psychiatric concept such as obsessive-compulsive disorder is given in a paper by Mataix-Cols and co-workers (Mataix-Cols, Rosario-Campos, & Leckman, 2005).

Signal Detection Models and Receiver Operating Characteristic (ROC)

Many diagnostic systems are used to distinguish between two classes of events, essentially “signals” and “noise,” or “diagnosis” and “no diagnosis.” For such systems, analysis in terms of the “relative (or receiver) operating characteristic” (ROC) of signal detection theory provides a fairly precise and valid measure of diagnostic accuracy. It is uninfluenced by decision biases and prior probabilities, and it puts the performances of diverse systems on a common, easily interpreted scale.

The ROC model applied to a diagnostic screening instrument with a wide range of possible scores (such as the CBCL, the SDQ or the ASSQ) is best presented in a graph detailing the true-positive rate (TPR = sensitivity) on the y-axis and the false-positive rate (FPR = 1 minus specificity) on the x-axis. The best trade-off for diagnostic purposes is usually seen at the point where the TPR is the highest and the FPR the lowest, i.e., at the inflection point on the curve. The value of TPR times FPR at this point represents the area under the curve (AUC). When the AUC approaches 1.0, the diagnostic precision of the screening instrument is excellent, but when it approaches 0.5, the precision is extremely poor. The use of the AUC concept as a measure in the evaluation

of new diagnostic screening tools has become something of a “gold standard” in recent years. It is important to understand that the inflection point of the ROC curve might not always be the preferred cutoff point for “diagnosis” according to a particular scale in all instances. Depending on the purpose of a study or on clinical praxis, having an extremely low FPR (i.e., minimizing the risk for overdiagnosis) might be of utmost importance, whereas in other instances, high TPR might be regarded essential (i.e., minimizing the risk for underdiagnosis).

Continuous Distribution Models

Most diagnostic systems, explicitly or implicitly, are, to some extent, based on notions of “normality” and “abnormality.” Many human traits, functions, or markers of functional systems can be construed as existing on a normal distribution scale which will be relatively smooth when the range of possible scores is large. “Abnormality” is often defined as a specified distance from the mean or the median score of such a scale (for example (plus) minus two standard deviations from the mean or under or over the 2nd/98th percentile). A disease or a pathological state can then, for instance, be construed as existing when the value of a marker for a biological function is below a specified level (such as in pathological shortness or “dwarfism”), or above a set limit (such as in hyperthyroidism).

Much can be said for diagnosing a number of psychiatric disorders along continuous distribution curves. ADHD and ASD are but two examples of “disorders” that can, in many instances, be seen as extremes of “conditions” that exist along a normally/continuously distributed spectrum (Posserud, Lundervold, & Gillberg, 2006). However, problems arise when it comes to specificity and determining exactly which specific trait should be considered the key marker function for the disorder. For instance, in ADHD, it is still not possible to determine whether attention, activity, or impulsivity aspects/functions should be considered core features of the “disorder.” Similarly, in ASD, it is not possible to assess the core quality of repetitive behaviors or, for that matter, perceptual functions, when it comes to delineating the “syndrome” of ASD. In the latter case – to “fully cover” the clinical spectrum of the “autistic state” in a given individual – it might be necessary to provide centile values for three or more continuous distribution curves, e.g., empathy, central coherence, and rigidity–flexibility, and this would entail a great deal of conceptual and practical problems in clinical practice.

There are other problems with the continuous distribution model. First, it is as difficult to reasonably determine cutoff for abnormality under this model as it is in the general medical model of categorical disorders. Second, there are

quite a number of instances, for instance, in autism, when the model is totally inappropriate. It would not be correct or logical to categorize a case of autism caused by herpes encephalitis as being on a distribution curve shading into “normality.” Third, and not least, there is a need for quick and dirty labels such as autism and ADHD, much like there is a need for terms like “fever” and “pneumonia” (imprecise and even more vague terms than those used in neuropsychiatry). One of the most important features of a diagnostic label is its “door-opening” quality; by having a label you will have easy access to knowledge. Having been given a percentage on a normal distribution curve, or worse, multiple different percentages on different curves, will possibly be closer to “the truth” but will often lead to more confusion than clarity. Having said this, the continuous distribution model has much to offer in second-level diagnostics: once a diagnosis of, for instance, autism has been made, providing information about the individual’s level of functioning on a number of continuous distribution curves might actually help create a much more detailed (and holistic) view of that person’s functioning.

The ICD

The evolution of diagnostic criteria is not simply a theoretical exercise but reflects empirically or historically based assumptions about the nature of the underlying pathology and the relationships between different disorders. Furthermore, these criteria determine which subjects are included in research and in clinical trials so that they shape the further development of psychiatric classification systems.

The ICD-10 was endorsed in 1990 and came into use in WHO member states in 1994. The ICD classification system has its origin in the 1850s. The first edition was adopted by the International Statistical Institute in 1893 (“List of Causes of Death”). The WHO took over the responsibility for the ICD at its creation in 1948. In 1967 the World Health Assembly adopted the WHO Nomenclature Regulations that stipulate the use of ICD in its most current revision for mortality and morbidity statistics by all member states.

The ICD is the international standard diagnostic classification for epidemiological, health management purposes, and in clinical practice. These include the analysis of the general health of population groups and the monitoring of prevalence of disorders and other health problems.

The ICD-10 has a section for psychiatric disorder (including for autism or “pervasive developmental disorders”) that is similar but not identical to that of the DSM-IV which was published at about the same time as the ICD-10. Attempts were made during the development of the psychiatric section of the ICD-10 and the DSM-IV to streamline the two manuals. This was partly successful, but there are

still considerable differences across the text, criteria and algorithms for diagnosing particular disorders, and some disorders appear in only one of the manuals.

Given that the DSM, compared to the ICD, has a much longer history when it comes to developing and analyzing operationalized criteria for psychiatric disorder, there will be a more detailed focus on the DSM-IV than on the ICD-10 in the present chapter. Much of what will be said about the DSM-IV (and the development of the DSM-V) applies in principle to the ICD-10 (and the development of the ICD-11, which is scheduled for publication in late 2013).

The DSM, Its History and Development with a Particular Focus on Autism

The Diagnostic and Statistical Manual of Mental Disorders is published by the American Psychiatric Association and provides diagnostic criteria for psychiatric disorders. It is used across the world, by clinicians, researchers, psychiatric drug regulation agencies, health insurance companies, pharmaceutical companies, and policy makers.

The *DSM-V* is currently under development and expected to be published in the spring of 2013. The *DSM-IV* – and the *DSM-IV Text Revision* (with virtually identical diagnostic operationalized criteria) – will then have been in use in clinical and research practice for almost two decades, which is considerably longer than the two 7-year periods of the forerunners *DSM-III* and *DSM-III-R*.

The DSM system is probably the most widely used diagnostic system for psychiatric and developmental disorders in the Western world. This has meant relative stability in the way psychiatric disorders have been conceptualized over several decades. However, as more and more research has documented the dimensional nature of so many of the core psychiatric disorders (including autism), the rigid structure and the algorithmic nature of the DSM have come under increasing criticism. The inclusion of dimensional elements in the psychiatric diagnostic systems has been advocated for many years. However it has been resisted due to concerns about clinical utility. Recent suggestions have been for a combination of categorical and dimensional data in future diagnostic classification systems.

The History of the DSM

In 1949, the WHO published the sixth revision of the ICD, which included a section on mental disorders for the first time. The *DSM-I* was published in 1952. Although the publisher of the *DSM-I*, the APA, was closely involved in the next significant revision of the mental disorder section of the ICD (version 8 in 1968), it also decided to go ahead

with a revision of the DSM. The *DSM-II* was also published in 1968, was 134 pages long, and listed 182 disorders. Both the *DSM-I* and the *DSM-II* reflected the predominant psychodynamic psychiatry, although they also included biological perspectives and concepts from Kraepelin's system of classification. Symptoms were not operationalized in detail for specific disorders. Many were seen as reflections of broad underlying conflicts or maladaptive reactions to life problems, rooted in a distinction between "neurosis" and "psychosis." Sociological and biological knowledge was also incorporated in a model that did not emphasize a clear boundary between normality and abnormality.

In 1974, the decision to create a new revision of the DSM was taken, and Robert Spitzer was selected as chairman of the task force. The initial impetus was to make the DSM nomenclature consistent with that of the ICD. The revision took on a wider mandate under the influence and control of Spitzer. One goal was to improve the uniformity and validity of psychiatric diagnosis. There was also a need to standardize diagnostic practices after research had shown that psychiatric diagnoses differed markedly across Europe and the USA. The establishment of the DSM criteria was also an attempt to facilitate the pharmaceutical regulatory process.

The criteria adopted for many of the mental disorders were taken from the Research Diagnostic Criteria (RDC) and the Feighner Criteria, which had recently been developed by a group of research-orientated psychiatrists based primarily at Washington University in St. Louis and at the New York State Psychiatric Institute. Other criteria, and potential new categories of disorder, were established by consensus during meetings of the committee, as chaired by Spitzer. A key aim was to base categorization on descriptive language rather than assumptions of etiology. The psychodynamic and physiologic views were largely abandoned. A new "multiaxial" system attempted to yield a "bigger picture," more consistent with clinical reality than the "box-approach only" which would be the result of using the "superficial" operationalized diagnosis without further qualification.

The first draft of the *DSM-III* was prepared in 1975. Field trials sponsored by the US National Institute of Mental Health (NIMH) were conducted between 1977 and 1979 to test the reliability of the new diagnoses. When published in 1980, the *DSM-III* was almost 500 pages long and listed 265 diagnostic categories. It rapidly came into widespread international use by multiple stakeholders and has been termed a revolution or transformation in psychiatry.

In 1987 the *DSM-III-R* was published as a revision of *DSM-III*, under the direction of Spitzer. Categories were renamed, reorganized, and significant changes in criteria were made. Six categories were deleted, while others were added. The *DSM-III-R* contained 292 diagnoses and was 70 pages longer than the *DSM-III*.

In 1994, the *DSM-IV* was published, listing almost 300 disorders in just under 900 pages. The task force was chaired by Allen Frances. A steering committee was introduced, including a small number of psychologists. The steering committee created 13 work groups of 5–16 members. Each work group had approximately 20 advisers. The work groups conducted a three-step process. First, each group conducted literature reviews of their diagnoses. Then they requested data from researchers, conducting analyses to determine which criteria required change, with instructions to be conservative. Finally, they conducted field trials relating diagnoses to clinical practice. A change from previous versions was the inclusion of a clinical significance criterion to about half of the categories.

A "text revision" of the *DSM-IV*, known as the *DSM-IV-TR*, was published in 2000. The diagnostic categories and the vast majority of the specific criteria for diagnosis were unchanged. The text sections giving extra information on each diagnosis were updated, as were some of the diagnostic codes in order to maintain consistency with the ICD.

The *DSM-V*, under the chairmanship of David Kupfer, is currently expected to be published in 2013, months before the envisaged publication of the ICD-11 (Kupfer D and Sartorius N, Personal communication about DSM-V and ICD-11). Several of the personality disorder categories will be gone and a few new categories of psychiatric disorder will be included. It is expected that autism will be one category (not referred to as pervasive developmental disorder) and that subgrouping will be done on the basis of a number of "non-autism" demographics such as level of IQ, language competence, and severity.

The Categorical Nature of the DSM System

The categories in DSM are prototypes, and a patient with a close approximation to the prototype is said to have that disorder. Each category of disorder has a numeric code taken from the ICD coding system, used for administrative purposes (including insurance). One problem with this approach to diagnosis is that it does not properly deal with all those instances when a patient is severely impaired but does not meet *all* the criteria for a given discrete disorder. Everyday in clinical practice (and in research), this is illustrated by diagnosis in the field of autism and related disorders. Many Western societies now have legislation specifically for autism. This means that having a "correct" diagnosis (i.e., one that fits with federal legislation) is extremely important. In needy clinical patients and in research prevalence studies, the categorical nature of the DSM system can be the arbiter between help and no help in terms of service provision, and between case and non-case in epidemiological studies.

Why Do We Need a Cross-cultural Diagnostic Manual – Such as the DSM – for Autism and Related Disorders?

Clinical work – not least assessment, diagnosis, and clinical research – with children and adolescents suffering from mental health problems or psychiatric disorder is challenging and complex. Medical doctors must take into account children's vulnerabilities and respect their rights, regardless of legal barriers or developmental limitations.

Despite the fact that during the last 65 years a number of diagnostic systems and clinical models of autism have been proposed, defining this psychiatric/developmental disorder in a manner acceptable in both clinical and research settings remains one of the most difficult tasks in psychiatry and developmental medicine. While the description of symptoms and signs of autism has remained largely unchanged over the years, the way in which authors have articulated the multiple manifestations of autism has differed over time. Progress has been made in recent years, and this has brought about a convergence on a shared definition of autism, including methods of assessment that are acceptable to workers from clinical and research centers across the world. Structured interviews (e.g., the DISCO-11, the ADI-R, and the ASDI) and observation schedules (including the ADOS-G) have brought organizational focus to the traditional psychiatric interview and developmental assessment. Such methods have provided a stricter format and directions to the interviewer, which, in turn, have enabled systematic assessment of *all* the criteria necessary for a diagnosis according to the given diagnostic (e.g., DSM) system. Having a consensually shared set of diagnostic criteria as well as structured assessment devices has helped ensure a more common unit of analysis in clinical practice and research across the globe. Though most workers would consider the operationalization of diagnostic criteria as an advance in psychiatry and developmental medicine, there remain concerns about the impact that the quest for increased diagnostic reliability might have on validity. Given that the ultimate goal of any diagnostic system is to provide insights into the causes and treatment of a disorder, examining various alternative diagnostic constructs and their validity is still an important area of autism research.

Comorbidity and the DSM System

The term “comorbidity” was introduced in medicine by Feinstein (1970) to denote those cases in which a “distinct additional clinical entity” occurred during the clinical course of a patient having an index disease. This term has recently become very fashionable in psychiatry and developmental medicine to indicate not only those cases in which a patient receives both a psychiatric and a general medical diagnosis

(e.g., autism and tuberous sclerosis) but also those cases in which a patient receives two or more psychiatric diagnoses (e.g., autism and Tourette syndrome). This co-occurrence of two or more psychiatric diagnoses (“psychiatric comorbidity”) has been reported to be very frequent. For instance, in a general population study, 85% of young children with ADHD had at least one additional DSM diagnosis leading to impairment (Kadesjo & Gillberg, 2001). In the case of severe autism, I would be surprised to find one single case in which there was no other mental or physical disorder. If a diagnosis of autistic disorder is made, you would have to be on the lookout for mental retardation/learning disability, epilepsy, a medical disorder such as tuberous sclerosis or 22q11 deletion syndrome, a neuropsychiatric disorder such as Tourette syndrome or ADHD, a mood disorder, an anxiety disorder, an eating disorder, a sleep disorder, or a specific developmental disorder such as developmental coordination disorder.

This use of the term “comorbidity” to indicate the co-occurrence of two or more psychiatric diagnoses appears to be logically incorrect because in most cases it is unclear whether the concomitant diagnoses actually reflect the presence of distinct clinical entities or refer to multiple manifestations of a single clinical entity. Because “the use of imprecise language may lead to correspondingly imprecise thinking” (Lilienfeld, Waldman, & Israel, 1994), this usage of the term “comorbidity” should probably best be avoided.

Nevertheless, the co-occurrence of multiple psychiatric diagnoses is now much more frequent than just 10 years ago. This is to some extent due to the use of standardized diagnostic interviews, which help to identify several clinical aspects that in the past remained unnoticed after the principal diagnosis had been made. Fragmenting a complex clinical condition into several pieces may prevent a holistic approach to the individual.

An obvious determinant of the emergence of the phenomenon of “psychiatric comorbidity” (see below) has been the proliferation of diagnostic categories in recent classifications. If demarcations are made where they do not “really” exist, the probability that several diagnoses have to be made in an individual case will obviously increase.

A coveted tradition in psychiatry and developmental medicine has been to establish a hierarchy of diagnostic categories so that, for example, if autism were present, the possibly concomitant anxiety, depression, or ADHD would not be diagnosed because they would be regarded as part of the clinical picture of autism.

Because we now use operationalized diagnostic criteria, diagnoses such as autistic disorder are regarded as more reliable than traditional clinical diagnoses. The old clinical descriptions provided a gestalt of each diagnostic entity. Different emphasis was put on the various clinical aspects, whereas current operational definitions usually give equal weight to a variety of clinical manifestations, *counting*

symptoms rather than *weighing* them. Traditional clinical assessment demanded arbiter differential diagnosis, whereas current operational definitions encourage multiple diagnoses, possibly in part because they are less able to convey the “essence” of each diagnostic entity.

The frequent co-occurrence of the mental disorders included in current diagnostic systems has been taken as evidence against the idea that these disorders represent discrete disease entities (Cloninger, 2002). The point has been made that psychopathology is usually complex and variable and that what is currently conceptualized as the co-occurrence of multiple disorders could be better reformulated as the complexity of many psychiatric conditions (with increasing complexity being a predictor of greater severity, disability, and service utilization). Even Kraepelin in one of his later works dismissed the model of discrete disease entities even for dementia praecox and manic–depressive disorder (Kraepelin, 1920).

However, an alternative possibility is that psychopathology does consist of discrete entities but that these entities are not well delineated by current diagnostic categories. If this is the case, then current clinical research on “psychiatric comorbidity” may be helpful in the search for “true” disease entities, contributing in the long term to a rearrangement of present classifications.

There is, of course, a third possibility, viz. that the nature of psychopathology is intrinsically heterogeneous, consisting partly of disease entities and categorical disorders, and partly of maladaptive response patterns or of exaggeration of traits that are more or less normally distributed in the general population.

The DSM as Used in Clinical Practice and Research

The DSM is much the most widely distributed diagnostic manual in psychiatry, both in research and clinical practice. In clinical work, it is used to determine and help doctors communicate a patient’s diagnosis after an evaluation.

The DSM is primarily concerned with the symptoms and behavioral manifestation of mental disorders. With the exception of a small number of disorders (including “reactive attachment disorder”), it does not generally attempt to analyze or explain the conditions included in the manual.

The DSM-IV organizes each psychiatric diagnosis into five levels (axes) relating to different aspects of disorder or disability:

- * *Axis I*: Clinical disorders, including major mental disorders, and learning disorders (very often the only axis that is thoroughly checked in clinical work and research). Axis I disorders include autistic disorder, Asperger’s disorder, ADHD, oppositional defiant disorder, depression, anxiety

disorders, Tourette’s disorder, selective mutism bipolar disorder, phobias, schizophrenia, anorexia nervosa, and a whole host of other named disorders.

- * *Axis II*: “Underlying” personality disorders and mental retardation (“learning disability” in European parlance).
- * *Axis III*: Acute medical conditions and physical disorders, including brain injury syndromes, cerebral palsy, epilepsy, and other medical/physical disorders which may aggravate existing diseases or present symptoms similar to Axis I or Axis II disorders.
- * *Axis IV*: psychosocial and environmental factors contributing to the Axis I disorder.
- * *Axis V*: Global Assessment of Functioning (GAF) or Children’s Global Assessment Scale (CGAS) for children and teenagers under the age of 18 years.

Appropriate use of the DSM diagnostic criteria requires extensive clinical training, and its contents cannot be applied in a cookbook fashion. There is a clear risk that patients and non-medical professionals may use the DSM in a checklist fashion and make “diagnosis” according to the number of checked symptoms. It needs to be stressed that the DSM is a manual for medical psychiatric diagnosis. In practice this should be taken to mean that the diagnostic criteria can be used only for making a definitive clinical diagnosis by highly skilled professionals (medical doctors with specialist training in psychiatry and for some disorders, including autism, ADHD and DCD, those with training in neurology and developmental medicine).

In clinical research, the manual is often used by other highly skilled professionals, including psychologists and speech language therapists with specialist training. However, research diagnoses should not uncritically be equated with clinical diagnoses, and if a psychiatrist or other specifically trained medical doctor has not been involved in the diagnostic process, the “DSM diagnosis” (which, in such cases, is not a DSM diagnosis in the intended sense of the word) should not be considered a psychiatric or a medical diagnosis.

The *DSM-V* published proposed diagnostic criteria in 2010. There was opportunity for specialists and the general public to react to these, and criteria were revised in the process. Once this was accomplished, the criteria were then tested in field trials. The results of these trials are not at hand at the publication of this volume. The process of work groups proposing criteria and the research community and general public reacting before final revision and field trials has been adhered to in the development of the DSM over the past 30 years. Even though this is in no way a guarantee that the criteria, once published, are “right,” it is possibly the best that can be achieved at a time when there is still no litmus test for psychiatric disorder. In the future, when genetics and proteomics and neuropsychology and personal account will have helped define psychiatric disorder in a more rational fashion,

this DSM approach to diagnosis will possibly be looked upon as undistinguished.

It has been argued that the DSM (and the ICD) is a system of classification that makes unjustified categorical distinctions between disorders, and between normal and abnormal. Although the *DSM-V* may move away from this categorical approach in some limited areas, some argue that a fully dimensional spectrum or complaint-oriented approach would better reflect the evidence (Krueger, Watson, & Barlow, 2005). Also, the level of impairment is sometimes not correlated with symptom counts and can stem from a variety of individual and psychosocial factors, increasing risk of producing “false-positive” cases. Nevertheless, it is very difficult to envisage an overall change, leading to fully dimensional diagnostics in psychiatry, given that it would not only be very difficult in practice but also entail a break with the tradition of categorical medical diagnosis that has a history of thousands of years.

Both the DSM and the ICD have been criticized as having a US slant. However, in the case of autism (and the more common symptom cluster referred to as ADHD), studies in many different countries and cross-cultural comparison across the US and Europe have shown that the phenotype of both autism and ADHD looks the same and has the same comorbidity and effects regardless of the cultural context in which it is studied.

Autism in the DSM-IV and the DSM-V

The *DSM-IV* comprised five different autism spectrum disorder categories: autistic disorder, Asperger’s disorder, childhood disintegrative disorder (CDD), pervasive developmental disorder, not otherwise specified (PDD-NOS), and Rett syndrome. Rett syndrome was felt by most authorities to be misplaced from the start and it is now not even specifically mentioned in the *DSM-V*. The *DSM-V* contains only one autism category, incorporating autistic disorder, Asperger’s disorder, CDD, and PDD-NOS into one common coded condition, referred to as “ASD” (see Box 2.1).

Box 2.1 Proposed DSM-V Criteria for Autism

Must meet criteria 1, 2, and 3:

1. Clinically significant, persistent deficits in social communication and interactions, as manifested by *all* of the following:
 - a. Marked deficits in nonverbal and verbal communication used for social interaction;
 - b. Lack of social reciprocity;
 - c. Failure to develop and maintain peer relationships appropriate to developmental level.

2. Restricted, repetitive patterns of behavior, interests, and activities, as manifested by at least *two* of the following:
 - a. Stereotyped motor or verbal behaviors, or unusual sensory behaviors;
 - b. Excessive adherence to routines and ritualized patterns of behavior;
 - c. Restricted, fixated interests.
3. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities).

The change reflects increasing awareness that much of the *DSM-IV* subgrouping of autism was based on attitudes and personal stance rather than empirical evidence. For instance, most systematic studies have not found support for a clear distinction between autistic disorder and Asperger’s disorder. It is also unclear to what extent CDD should be seen as different from autistic disorder with regression and whether or not “mild” or highly atypical cases of PDD-NOS are really related to autistic disorder at all.

Table 2.1 compares the *DSM-IV* and *DSM-V* criteria for autistic disorder/ASD. There are only six symptoms in the *DSM-V* as compared with twelve in the *DSM-IV*. There are only two subgroups of symptoms rather than three. The change to just half the number of symptoms superficially gives the impression of a major reconceptualization of the whole category. However, on closer inspection, what has been achieved is a pruning of four symptoms (that were felt by many to be vague and relatively unimportant or to be hallmarks of other conditions, such as severe learning disability or severe expressive language disorder) and a collapsing of four of the remaining eight into two. Also, the social and

Table 2.1 Comparison of DSM-IV and proposed DSM-V criteria for autism

| DSM-IV criterion | Corresponding criterion in DSM-V |
|------------------|----------------------------------|
| 1a | 1a |
| 1b | 1c |
| 1c | — |
| 1d | 1b |
| 2a | — |
| 2b | 1a |
| 2c | 2a |
| 2d | — |
| 3a | 2c |
| 3b | 2b |
| 3c | 2a |
| 3d | — |

communication categories have been collapsed into one. This mirrors the now generally accepted notion that at the root of both the social and communication problems in autism is a shared deficit in intuitive understanding of the meaning of reciprocity. Finally, the three specific social–communication symptoms in the *DSM-V* must all be met for a diagnosis to be considered (compared to only two out of four in the *DSM-IV*), and there must be at least five of the six total number of symptoms met (compared to “only” six of the twelve autistic disorder criteria in the *DSM-IV*). Interestingly, there is also again referral to the unusual sensory behaviors that are almost universally encountered in autism but that were not specifically mentioned under the *DSM-IV*. The age criterion has been changed from delay or abnormal functioning being evident before age 3 years (*DSM-IV*) to symptoms having been present from early childhood (*DSM-V*).

Taken together, it would seem that the *DSM-V* might actually restrict somewhat the number of cases of autistic disorder meeting full criteria for autism spectrum disorder compared to the *DSM-IV*. Also, many of the cases meeting Asperger’s disorder symptom criteria (only three symptoms in total needed in the *DSM-IV*) and PDD-NOS “criteria” (that are really extremely vague) would probably fall short of diagnostic status under the *DSM-V*. The Gillberg’s Asperger syndrome category would, on the other hand, at least at a glance, usually meet criteria for ASD under the *DSM-V*. However, all of this is, of course, pure speculation at the present time. Changing the diagnostic criteria, as will happen with the introduction of the *DSM-V* (ICD-11), will definitely lead to changes in numbers of cases diagnosed. This, in the case of autism, will, almost certainly, lead to claims of “autism epidemics” or “autism disappearing?” in the headlines of many major newspapers from about 2015 onwards. This is the extent of what can be reasonably predicted as a result of the introduction of the new diagnostic manuals.

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International Handbook of Autism and Pervasive
Developmental Disorders

Matson, J.L.; Sturmey, P. (Eds.)

2011, XXV, 555 p. 7 illus., Hardcover

ISBN: 978-1-4419-8064-9