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Advances in Psychotherapy –
Evidence-Based Practice

The Schizophrenia Spectrum

2nd edition



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The Schizophrenia Spectrum

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From W. D. Spaulding, S. M. Silverstein, & A. A. Menditto: *The Schizophrenia Spectrum* (2nd ed.) (ISBN 9781616765040) © 2017 Hogrefe Publishing

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Advances in Psychotherapy – Evidence-Based Practice

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The basic objective of this series is to provide therapists with practical, evidence-based treatment guidance for the most common disorders seen in clinical practice – and to do so in a reader-friendly manner. Each book in the series is both a compact “how-to” reference on a particular disorder for use by professional clinicians in their daily work and an ideal educational resource for students as well as for practice-oriented continuing education.

The most important feature of the books is that they are practical and easy to use: All are structured similarly and all provide a compact and easy-to-follow guide to all aspects that are relevant in real-life practice. Tables, boxed clinical “pearls,” marginal notes, and summary boxes assist orientation, while checklists provide tools for use in daily practice.

The Schizophrenia Spectrum

2nd edition

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Preface to the Second Edition

The intent of this book is to provide an overview of current conceptualizations of, and treatments for, schizophrenia spectrum disorders. There is an emphasis on psychological treatments. These interventions are usually neglected in graduate and medical training about schizophrenia, even though the evidence for their effectiveness is comparable to that of pharmacologic treatment, with the combination of the two typically producing the best treatment outcomes. However, schizophrenia spectrum disorders are complex conditions with expressions at all levels of a person's biological, psychological, and social functioning. Modern treatment incorporates, integrates, and coordinates modalities that operate at all those levels. Pharmacological treatment addresses the neurophysiological level of the disorders and some of the direct cognitive and behavioral consequences, but this is just one part of the picture. We hope to provide the reader a reasonably complete overall picture of assessment, treatment, and rehabilitation.

Since the first edition, the major developments that required the most attention for the second are:

1. Publication of the fifth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). The fifth edition introduces the *schizophrenia spectrum* and *neurodevelopmental disorders*, reflecting advances in our scientific understanding of mental illness in general and schizophrenia in particular;
2. Evolution of the idea of *recovery* as central to treatment and rehabilitation, and to the subjective experience of the person affected;
3. Advances in the psychopathology of schizophrenia and other disorders that transform our basic understanding of mental illness as non-categorical, multidimensional processes with indistinct boundaries and multiple interacting etiological factors that are inseparable from the process of human development;
4. A proliferation of psychological and psychosocial modalities for treatment and rehabilitation and their subsequent consolidation into the integrated multimodal arrays and organizational models that characterize modern psychiatric rehabilitation;
5. The continuing failure to disseminate, implement, and effectively regulate modern treatment and rehabilitation methods in our mental health service systems, despite overwhelming evidence for improving outcomes.

We hope this book is useful to a wide range of people, from students first learning about the schizophrenia spectrum to advanced clinicians and researchers looking for a compact review of current conceptualizations and clinical tools. The schizophrenia spectrum represents one of the greatest scientific challenges of our time and also one of the most disenfranchised, undertreated populations in our society. Our hope is that this book will inspire all readers to address the social, political, and humanitarian issues as well as the scientific ones.

Acknowledgments

The authors would like to thank Danny Wedding for providing the opportunity to write this book and for his guidance during the writing process. Will Spaulding would like to thank Rue Cromwell and the late Gordon Paul for guiding his early work in schizophrenia and all the teachers and mentors named by this volume's co-authors, and Mary Sullivan for ongoing love, support, and teamwork. Steve Silverstein would like to thank his mentors and teachers who taught him about schizophrenia and its treatment, including Ray Knight, Michael Raulin, Frank Miller, Jim Bowman, Robert Liberman, Chuck Wallace, and Rich Hunter. He would also like to thank his parents and Judy Thompson for their love and support. Anthony Menditto adds his thanks to Gordon Paul for his pioneering work that laid the groundwork for applying rigorous standards of practice to developing services and properly evaluating them for individuals with severe mental disorders, and for the personal support and guidance he has provided to each of us over the years. He would also like to thank Lynn Geeson and Theresa Menditto for their love and support. All the authors wish to thank all the students from whom we have learned, and, most especially, the people we've been privileged to accompany on their journeys of recovery. We also thank the Hogrefe editorial and production staff for their helpful and professional collaboration and assistance.

Contents

Preface to the Second Edition	v
Acknowledgments	vi
1 Description	1
1.1 Terminology	1
1.1.1 Schizophrenia as a Mental Health Policy Construct	1
1.1.2 Schizophrenia as a Psychiatric Diagnosis	3
1.1.3 Dimensions of the Schizophrenia Spectrum	6
1.1.4 The Medical Model	9
1.1.5 Psychiatric Rehabilitation	10
1.1.6 Recovery	11
1.1.7 Evidence-Based Practice	13
1.2 Definition	14
1.3 Epidemiology	15
1.4 Course and Prognosis	16
1.4.1 Short-Term Outcomes	16
1.4.2 Long-Term Outcomes	18
1.5 Differential Diagnosis	20
1.6 Co-Occurring Conditions	20
1.6.1 Psychiatric Conditions	21
1.6.2 Medical Conditions	25
1.7 Diagnostic and Other Assessment Procedures	26
2 Theories and Models of the Schizophrenia Spectrum	28
2.1 The Concept of Vulnerability	28
2.2 Genetics	29
2.3 Theories Involving Viruses or Immunopathology	31
2.4 Birth Complications	32
2.5 Neuroanatomy	32
2.6 Neurophysiology	33
2.7 Neurodevelopmental Factors	35
2.8 Cognitive Factors	35
2.9 Social Learning Theory	38
2.10 Environmental Factors	39
3 Diagnosis and Treatment Indications	41
3.1 Assessment	41
3.1.1 Neurophysiological and Symptom Assessment	41
3.1.2 Cognitive Assessment	41
3.1.3 Dynamic Assessment	42
3.1.4 Functional Assessment	43
3.2 Treatment Planning	45
3.2.1 Problem-Oriented Treatment Planning	46
3.2.2 The Multimodal Functional Model	47

4	Treatment	49
4.1	Descriptions of Treatment Modalities	49
4.1.1	Rehabilitation Counseling and Related Modalities	49
4.1.2	Collaborative Psychopharmacotherapy	51
4.1.3	Neurocognitive Therapy	52
4.1.4	Contingency Management	53
4.1.5	Individual Psychotherapy	54
4.1.6	Social Skills Training	56
4.1.7	Problem Solving Skills Training	58
4.1.8	Illness/Wellness Management Skills Training	58
4.1.9	Independent Living Skills Training	59
4.1.10	Specialized Integrated Treatment for Co-Occurring Substance Abuse	60
4.1.11	Supported Employment and Occupational Skills Training	60
4.1.12	Family Therapy	62
4.1.13	Peer Support and Self-Help Groups	63
4.1.14	Acute Treatment, Crisis Intervention, and Related Services	63
4.1.15	Specialized Models for Service Integration and Provision	64
4.1.16	Supported Housing	67
4.2	Mechanisms of Action	68
4.2.1	Recovery-Oriented Perspectives	70
4.3	Efficacy and Effectiveness	70
4.4	Variations and Combinations of Methods	72
4.5	Problems in Carrying Out the Treatment	72
4.5.1	The Domain of Research Review and Meta-Analysis	72
4.5.2	Mental Health Policy, Funding, and Regulation	73
4.5.3	Education and Training of Practitioners	74
4.5.4	The Economics of the Mental Health Provider Industry	74
4.6	Multicultural Issues	75
5	Case Vignettes	77
6	Further Reading	79
7	References	81
8	Appendix: Tools and Resources	91

1

Description

1.1 Terminology

1.1.1 Schizophrenia as a Mental Health Policy Construct

Schizophrenia refers to a type of severe and disabling mental illness that affects between .5% and 1.5% of the population worldwide, with a current global prevalence calculated at over 20 million people. It is typically first recognized in late adolescence or early adulthood, and is often associated with lifelong disability, especially when appropriate services are not provided. It has been estimated that as many as ten percent of all disabled persons in the US are diagnosed with schizophrenia.

Schizophrenia affects over 20 million people around the world

Schizophrenia is a specific psychiatric diagnosis, but for the purposes of social policy and healthcare administration it is often grouped together with schizoaffective disorder, bipolar disorder, severe chronic depression, and sometimes other conditions. Such grouping is convenient because treatment and service needs are similar within the group. The diagnoses usually grouped with schizophrenia have in common an onset in late adolescence or adulthood, an *episodic course* (periods of better and poorer functioning), a high risk of severe disability, and in most cases (traditionally) a lifelong need for treatment and support services.

Psychiatric Disability

Psychiatric disability resulting from schizophrenia extends to multiple domains of personal and social functioning. People with the diagnosis are vulnerable to institutionalization, to being found legally incompetent and requiring a guardian, and to needing assisted living situations. As a group they have very high unemployment and poor quality of life. The economic costs of schizophrenia, including direct treatment costs and lost productivity, are enormous (Insel, 2008), among the highest of all health conditions, ranking with cancer and heart disease. The diagnosis accounts for 75% of all mental health expenditures and approximately 40% of all Medicaid reimbursements, although the greatest part of the economic burden comes not from treatment but from the *disability*, i.e., from the lost productivity of those affected (Insel, 2008).

Serious Mental Illness

The term *serious mental illness* (SMI) has been in use for several decades, especially in federal mental health policy, to refer to schizophrenia and the other diagnoses with which it is usually grouped. However, in recent years the

meaning of SMI has generalized to include less disabling conditions, sometimes virtually any psychiatric diagnosis (Satel & Torrey, 2016). This would not be a problem if the criteria were sensitive to the actual, measurable degree of *disability*, but in practice expansion of the meaning of SMI directs resources away from those in most need. This issue is related to the so-called practice of “cherry picking,” strategically selecting healthcare clients to optimize corporate or individual profits. It is a matter of ongoing concern and debate in the healthcare industry and the mental health policy communities.

The Schizophrenia Spectrum

Schizophrenia spectrum is also used as a group term, although its specific meaning is variable. In the recently issued fifth edition of the American Psychiatric Association’s *Diagnostic and Statistical Manual* (American Psychiatric Association, 2013), “Schizophrenia Spectrum,” is a sub-family that includes schizophrenia and related diagnoses under the major heading “Schizophrenia Spectrum and Other Psychotic Disorders.” DSM-5 also includes *schizotypal personality disorder* in its definition of the schizophrenia spectrum, even though it is placed under the major heading “Personality Disorders.” In the scientific literature, “schizophrenia spectrum” is used more broadly, in recognition of the indistinct boundaries of “schizophrenia” as a diagnostic category, the multiple causes and expressions of psychopathology related by common genes, symptoms and other features, and commonalities in treatment. *Schizotypal traits* and other developmental vulnerabilities are considered part of the schizophrenia spectrum whether or not they meet diagnostic criteria for any disorder. For the purposes of this book, the scientific usage of “schizophrenia spectrum” provides a better reflection of its meaning than the DSM usage.

The DSM-5
now classifies
schizophrenia as a
spectrum disorder

Psychosis

Psychosis is a clinical term that has significant policy implications as well. It is not a diagnosis, but is closely associated with schizophrenia and related diagnoses, sometimes collectively termed *psychotic disorders*. Psychosis is a state often loosely described as detachment from reality, expressed as specific psychiatric symptoms including hallucinations, delusions (expression of unrealistic or bizarre beliefs), disruption of coherent thought and language, and affect inappropriate to the situation (e.g., euphoria in the face of deteriorating personal circumstances, extreme anger without a discernable cause). Sometimes affective symptoms may have associated *psychotic features*, e.g., if depressed mood is accompanied by delusions of guilt. In such cases the psychotic features are said to be *mood-congruent*. Psychosis may be continuous or episodic and is highly variable in quality and severity across individuals and within individuals over time. The presence of psychosis in any clinical picture is indicative of increased morbidity, risk, and disability. Even in the general population, the presence of psychotic symptoms is associated with greater social disability (Rossler et al., 2015) and an increased risk for violent behavior (Silverstein, Del Pozzo, Roché, Boyle, & Miskimen, 2015). Unfortunately, mental health policies, regulations, and practices often fail to recognize and manage the highly variable and episodic nature of psychosis and the individual differences this creates.

Treatment Refractory Schizophrenia

It may seem curious that the term *treatment refractory* appears in a discussion of policy terminology. In fact, the concept behind the term has a pervasive influence on policy and in organization and administration of mental health services. Applied in mental health in the context of severe, disabling disorders, treatment refractory means *refractory to drug treatment*, specifically to treatment with first-generation antipsychotic drugs (see Section 4.1.2). There is no scientific rationale for distinguishing a group based on response to drugs, much less on response to a specific sub-family of drugs. There are, however, commercial and economic reasons to make the distinction, but these are not typically reasons that serve the best interests of consumers. For example, this distinction is often used to support the use of cheaper post-patent medications, to promote prescription of newer, more profitable drugs, or to promote the interests of the medical services industry.

Arguably “treatment refractory schizophrenia” is a terminological relic of the *deinstitutionalization* era, the 1970s and 1980s, when the population of psychiatric institutions was dramatically reduced. Policy during that era showed a naïve (in retrospect) expectation that antipsychotic drugs would enable people discharged from the psychiatric institutions to function normally in their communities. Being “refractory” in this context could render the community inaccessible to the person so labeled.

Most people with schizophrenia spectrum disorders are “refractory” to some degree, in the sense that very few people experience complete remission of all aspects of the disorder from drug treatment alone. Most people who are “refractory” to first-generation antipsychotics are responsive to a range of psychological treatments and social interventions, some to a very extensive degree (Newbill, Paul, Menditto, Springer, & Mehta, 2011; Paul & Lentz, 1977; Silverstein et al., 2006; Spaulding, Johnson, Nolting, & Collins, 2012).

1.1.2 Schizophrenia as a Psychiatric Diagnosis

The modern diagnosis of schizophrenia has its origins in the work of Emil Kraepelin, who named it *dementia praecox*, “early dementia.” In the early 20th century the Swiss psychiatrist Eugen Bleuler introduced the term “schizophrenia” as he challenged the presumptions underlying Kraepelin’s “dementia praecox.” “Dementia” is inappropriate, Bleuler argued, because many people recover in ways inconsistent with an irreversible progressive brain disease. Bleuler also argued that the extensive individual differences between people with the same diagnosis suggest that it is not a single disorder, but a group of similar but distinct disorders. He argued that the most important characteristic of the disorder is not its onset or course, but the nature of its expression, particularly in the domain of human functioning we recognize today as *cognition*. He therefore proposed “schizophrenia,” derived from Greek for “severed mind” (*skhizein*, σχίζειν, “to split,” *phren*, φρήν, “mind”) to reflect a fragmentation of mental functioning, including a split between thinking and feeling. Later, misunderstanding of “schiz-” led to the unfortunate and totally erroneous confusion of schizophrenia with “split personality” in popular culture.

Schizophrenia was originally labeled *dementia praecox*

Schizophrenia does not refer to a split personality, although this is a popular misconception

Later in the 20th century Bleuler's "schizophrenia" became the accepted diagnostic term in psychiatry, but the key clinical features that comprise the criteria for making the diagnosis were mostly those described by Kraepelin. Scientific debate continued throughout the century about which symptoms are most essential and whether there are subcategories of symptoms reflecting subtypes of schizophrenia. Kraepelin's original subgroups of symptoms gradually evolved into the diagnostic subcategories familiar today: paranoid, hebephrenic, catatonic, and undifferentiated. Two of the original subgroups became *schizoaffective disorder* and *catatonia*, today considered separate diagnoses, not subtypes, but still within the schizophrenia spectrum if not caused by other medical conditions or substance abuse.

In the 1970s a group of academic psychiatrists who became known as "neo-Kraepelinians" gained control of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (Kutchins & Kirk, 1997). The neo-Kraepelinian agenda was, among other things, to eliminate the influence of psychoanalysis in psychiatry and replace it with an understanding of mental illness as the expression of distinct medical conditions comparable to infectious diseases. Mental illness was reduced to a "broken brain" (Andreasen, 1984). Treatment was not treatment unless it was medical, i.e., pharmacological (Klein, 1980). In 1980 the neo-Kraepelinians issued the 3rd edition of the DSM, which asserted this perspective. "Correct" diagnosis of specific psychiatric diseases, based on observation and patient report of specific symptoms, became a keystone of both research and clinical practice.

The DSM-III was influenced by Emil Kraepelin's original diagnostic system and biological assumptions

The neo-Kraepelinians dominated two editions of DSM, the third (including a revision in 1987) and the fourth, in 1994. By the turn of the 21st century, however, the flaws in such a reductionist approach were no longer manageable. Psychopharmacology contributed importantly to illumination of the flaws, ironically so, because the neo-Kraepelinians expected that drug effects would play a major role in validating their diagnostic system. In fact, the expected correspondence of drug families to diagnostic groups did not develop. By the 21st century, antipsychotic drugs were being used to treat affective and personality disorders, antidepressants were being used to treat anxiety disorders, and mood stabilizers were being used to treat psychosis. Similarly, as behavioral neuroscience matured, the hypothesis that psychiatric disorders are separate diseases caused by distinct genes or pathogens following simple etiological pathways became untenable. It became clear that the population of "people with schizophrenia," as rigorously diagnosed with neo-Kraepelinian criteria, is immensely heterogeneous, as is their response to drugs. The irony is compounded by recent historical scholarship that indicates that by the end of his life Kraepelin himself had come to doubt the validity of his system, in ways that eerily anticipate developments in psychopathology and neuroscience nearly a century later (Engstrom & Kendler, 2015). Had he lived until 1975, Kraepelin probably would not have been a neo-Kraepelinian.

In 2013 the fifth edition of the DSM (DSM-5) was issued. Overall, the reductionist perspective of the previous editions was significantly moderated. Mental illnesses, including schizophrenia, were recognized to be not specific diseases or even distinct categories, but prototypes, "fuzzy sets" with indistinct boundaries and multiple etiologies. The subtypes of schizophrenia were elimi-

nated, based on lack of scientific validation. These changes bring the diagnosis of schizophrenia into better congruence with science, but after decades of research based on neo-Kraepelinian assumptions there will inevitably need to be further changes in how we understand the relationship between science, diagnosis, and practice. Even the youngest readers of this book will see the lingering effects of the neo-Kraepelinian era and of biological reductionism in general in the foreseeable future. The most unfortunate part of this legacy may be expectations for outcome, because the neo-Kraepelinian perspective does tend to reduce schizophrenia to an incurable neurological disease.

Another significant change in the DSM-5 was introduction of the idea of *neurodevelopmental disorders*. As will be discussed in more detail in Chapter 2, the etiological processes associated with the schizophrenia spectrum have come to be recognized as essentially developmental. The DSM-5 defines a new family, “Neurodevelopmental Disorders,” that includes intellectual disability (formerly mental retardation), autism spectrum disorders, attention deficit hyperactivity disorder, and other congenital conditions. Schizophrenia was not placed in this family, arguably because disorders manifest at birth or in early childhood need their own category (in DSM’s III and IV there was literally a category of *disorders usually diagnosed in infancy, childhood or adolescence*). The schizophrenia spectrum has many *premorbid* manifestations, i.e., abnormalities present before all diagnostic criteria are met, that can be observed as early as infancy in some cases, but the modal window for *onset*, i.e., the point at which *all* diagnostic criteria are met, extends from late adolescence through the early 20s. In recognition of the onset difference, in DSM-5 schizophrenia spectrum disorders are placed just adjacent to the child onset family, in “Schizophrenia Spectrum and Other Psychotic Disorders.” Despite being in a separate DSM family, there is strong consensus across the scientific community that the schizophrenia spectrum has neurodevelopmental etiologies.

Most researchers believe schizophrenia spectrum disorders have neurodevelopmental etiologies

In a sense, identifying the onset of a neurodevelopmental disorder is inevitably arbitrary. Many people have serious impairments in their personal and social functioning long before they meet criteria for a schizophrenia spectrum disorder. For some, there is a sudden change of functioning and appearance of psychosis. For others, there is no distinct point of onset, and changes in functioning occur throughout adolescence. This is historically termed an *insidious onset*. The *prodrome*, or condition preceding the actual meeting of full diagnostic criteria, is sometimes so pronounced and protracted that a separate diagnosis for it has been proposed and included in DSM-5 as “attenuated psychosis syndrome,” not as a diagnosis but as a condition for further study. There is increasing interest in intervening upon detection of the earliest manifestations of abnormality. Waiting until the onset of psychosis to intervene has been likened to waiting until the patient has a heart attack before diagnosing heart disease.

Similarly, the idea of schizotypy has taken on additional meaning. In addition to representing a developmental vulnerability, *schizotypal personality disorder* is considered a separate diagnosis. This reflects recognition that some of the features of schizotypy, e.g., anhedonia (reduced ability to experience pleasure), magical thinking (illogical reasoning, odd beliefs), and social isolation, can have maladaptive impact independent of the vulnerability to psychosis.

1.1.3 Dimensions of the Schizophrenia Spectrum

Symptom Categories

In contrast to the diagnostic subtypes of schizophrenia, some categorizations of specific clinical features have gained scientific validation and practical value. As long as we do not forget that schizophrenia itself is not really a valid category, other categorical and quantitative dimensions of severe psychopathology can have scientific and clinical utility. We can expect that these types of measures will play an important role in both research and practice in the foreseeable future.

An important example, derived from the work of the 19th century British neurologist John Hughlings-Jackson on neurologic disorders, is the distinction between positive, negative, and disorganized symptoms. *Positive symptoms* are behaviors or experiences not present in the normal population, e.g., the familiar psychiatric symptoms, hallucinations, and delusions. *Negative symptoms* are ones that represent an *absence* of a normal behavior or experience, e.g., a reduced ability to experience pleasure, reduced motivation, blunted affect. Negative symptoms are sometimes further classified as primary or secondary. Primary negative symptoms are those that directly reflect a disease process, whereas secondary symptoms are those that are due to other factors, e.g., social withdrawal secondary to paranoia. *Disorganized symptoms* refer to a fragmentation and breakdown of psychological functions needed to organize behavior for specific purposes (e.g., disrupted thought or speech, purposeless motor activity).

Although grouping of symptoms is categorical, the symptoms themselves can be quantitatively measured. This is important because quantitative measures like symptom severity are usually more useful than categorical distinctions in assessing treatment effects and other outcomes. The significance of the categorical distinctions is whether they identify different situations or people who behave in a distinctive way. For example, there is some evidence that persistently high levels of negative symptoms identify a distinct grouping, termed the *deficit syndrome*, with distinct etiology and treatment needs. However, so far there is very little evidence of categorical differences in treatment needs among people with schizophrenia spectrum disorders.

Psychopharmacological as well as psychological treatment approaches have become primarily focused on individual symptoms rather than symptom categories. However, in general, negative symptoms are generally less responsive to medication than are positive symptoms, although psychological interventions (e.g., activity scheduling, behavioral activation) have been shown to be effective. Patients with high levels of *disorganized* symptoms generally respond least well to antipsychotic medication and to psychological treatment (although specific treatments for this symptom dimension have not been developed), and tend to have poorer long-term outcomes.

Alternative Views of Psychiatric Symptoms

In an alternative conceptualization of the symptoms of the schizophrenia spectrum, rooted in phenomenology, symptoms are not seen solely as additions to or deletions from normal functioning (Sass & Parnas, 2003). In contrast to the Hughlings-Jackson view, and consistent with many patient self-reports,

Patients with schizophrenia spectrum disorders can present with positive or negative symptoms

Patients who present with disorganization as a symptom have a poorer prognosis

this perspective recognizes that negative symptoms may not be true deficits, but rather compensatory responses of an individual to *excessive* internal activity. Similarly, positive symptoms such as delusions are not viewed simply as “added on” mental experiences. They are active attempts by a person to make sense of anomalous sensory experiences and to adapt to the many psychological and social implications of being “mentally ill.” A classical idea in experimental psychopathology (e.g., Maher, 1988), this explanation continues to be supported by recent research (e.g., Nordgaard & Parnas, 2014).

In the social learning theory perspective, symptoms are social behavior and as such may be expected to acquire instrumental value and become components of social role performance like any other. They may acquire *functional autonomy* from neurophysiological origins, meaning that behavior originally driven by neurophysiological dysregulation in acute psychosis may come to be controlled by social circumstances over time. The influence of social circumstances on self-report of psychiatric symptoms is generally presumed to be a major cause of low reliability, both inter-rater and repeated measurement, of neo-Kraepelinian diagnoses. Assessment of the contributions of neurophysiological vs. psychosocial factors in a complex clinical presentation is a key challenge in treating schizophrenia spectrum disorders.

The Process-Reactive Continuum

Our modern perspective on the schizophrenia spectrum recognizes that the importance of psychiatric symptoms has been historically overestimated, compared to other dimensions that identify separate groups or subgroups, and also that there are wide individual differences within and across groupings. An important historical example of the nonsymptom dimensions of schizophrenia is the *process-reactive continuum* (Cromwell, 1975), which guided schizophrenia research for decades in the mid-20th century. Originally derived from psychoanalytic hypotheses about subtypes of schizophrenia, the process-reactive distinction came to be understood as a multidimensional continuum, combining developmental measures (e.g., child and adolescent social functioning), genetic information (family history of mental illness), features of the onset (earlier vs. later, sudden vs. gradual), and course of illness features (good vs. poor outcome). At the process end of the continuum are individuals with a family history of the disorder, poor childhood functioning, a gradual onset, predominantly negative symptoms, poor treatment response, poor functioning between episodes, and poor outcome. At the reactive end of the continuum are people with no family history, good functioning up until a sudden onset, predominantly paranoid or affective symptoms, relatively intact functioning between episodes, good treatment response, and good outcome. The people at the two extremes are so different they may appear to represent distinct categories, but the process-reactive dimension is continuous, with many individuals in an intermediate range. Of course, people at different points of the process-reactive continuum tend to have different recovery goals and different treatment and rehabilitation needs.

We are rediscovering the usefulness of the process-reactive continuum as psychopathologists increasingly incorporate evidence from cognitive and behavioral neuroscience. In our contemporary neurodevelopmental understanding of schizophrenia, the process-reactive continuum summarizes the

impact of the myriad causal and moderating factors that operate over the course of development to produce dysfunction and disability. For example, the recent development of *overall genetic risk scales* (discussed in Section 2.2) revives the idea in the form of a continuum of risk or severity reflecting the cumulative contributions of multiple genes. The impact on human development of environmental stress and trauma in childhood broadens the range of contributing risk factors beyond genes.

The process-reactive continuum is also relevant to functional distinctions between bipolar disorder and other schizophrenia spectrum disorders. Bipolar disorder is not under the schizophrenia spectrum rubric in DSM-5, but is often considered part of the schizophrenia spectrum in the scientific sense. There is significant overlap in key features, i.e., recurring psychotic episodes, high risk for chronicity and disability, involvement of and impact on families. Treatment approaches also overlap. However, to the degree that a person with a bipolar diagnosis shows characteristics of the reactive end of the process-reactive continuum, especially good premorbid functioning and return to relatively normal functioning between psychotic episodes, the practitioner should consider perspectives and treatment approaches specialized for that subpopulation (e.g., Reiser, Thompson, Johnson, & Suppe, 2017).

There is significant overlap between the symptoms associated with schizophrenia spectrum disorders and those associated with bipolar disorder

Cognitive and Neuropsychological Dimensions

Cognitive dimensions are also important sources of individual differences within the schizophrenia spectrum. In the late 20th century a convergence of two scientific disciplines, experimental psychopathology and neuropsychology, transformed our understanding of schizophrenia. By the 1990s it was credible to propose that schizophrenia is essentially a *neuropsychological disorder*, in the sense that the cognitive impairments measured by neuropsychological instruments play key roles in etiology and the resulting disability. Currently, it is fashionable to characterize schizophrenia as primarily a *cognitive* or *neurocognitive* disorder. Those with the most severe cognitive impairments tend to have the poorest outcomes, and cognitive impairments generally predict functional outcomes better than symptoms.

By the time the DSM-5 was issued in 2013, developmental neuroscience had begun to show how cognitive impairments come about, consolidating our understanding of schizophrenia as a neurodevelopmental disorder with key expressions in the cognitive domain. Today cognitive psychology and neuropsychology paradigms are central to schizophrenia spectrum research. Modern methodology spans the entire cognitive spectrum, from the processes of memory, attention, and perception measured by traditional neuropsychological instruments, to information processing paradigms used in conjunction with advanced brain imaging and electroencephalography, to sophisticated measures of complex social/interpersonal cognition. Some measures can statistically differentiate diagnostic groups within the schizophrenia spectrum (Van Rheenen et al., 2015), but the overlap of distributions is substantial. As new treatment approaches evolve, they increasingly use cognitive measures to individually tailor therapy and to target the cognitive impairments themselves.

Functional Dimensions

For the most practical purposes, the most important dimensions of the schizophrenia spectrum are measures of *personal and social functioning*, including the ability to perform personal care and hygiene, to maintain a home, to get and keep a job or otherwise maintain financial support, to manage personal finances, to make and keep friends, to have intimate relationships, and to have satisfying hobbies and interests. These are the dimensions that determine the type and degree of disability, both of which vary significantly across the schizophrenia spectrum and within people over time. They are the dimensions most important to the people affected. They are frequently targets of treatment, and improvements on these dimensions are frequently personal recovery goals. Severity of functional impairment is weakly correlated with psychiatric symptoms in clinically stable patients.

1.1.4 The Medical Model

As typically used, the phrase *medical model* refers to a combination of presumptions, including: (1) schizophrenia (and other mental illnesses) is a distinct biological disease (i.e., a condition with known etiology, pathophysiology, and course); (2) the symptoms of schizophrenia are the most important targets of treatment; (3) *pharmacotherapy* (drug treatment) is the primary, if not sole treatment for schizophrenia; and (4) psychiatrists, as physicians specializing in medical treatment of mental illnesses, are or should be the primary practitioners, directors, and supervisors of all treatment.

The neo-Kraepelinian era arguably represented the epitome of the medical model, but it has been described and criticized in the psychological literature at least since the 1960s, e.g., in the Introduction to Ullman and Krasner's classic 1965 text, *Case Studies in Behavior Modification*. In that context, the medical model should not be too closely associated with biological medicine – it was fully functioning in the psychoanalytic era. The enduring feature of the medical model is not biology, but the primary roles of physicians, the typically subordinate roles of “allied healthcare professions,” policies and regulations that support these roles, the ways in which healthcare services are funded and eligible patients identified, and the traditional corporate and management structures of the healthcare industry. Both psychoanalytic and biomedical versions of the medical model have been criticized in the discourse of the recovery movement (further discussed in Section 1.1.6). In recent years investigative journalists and the popular press have joined in criticizing the dubious validity of psychiatric diagnosis, the questionable benefits of psychiatric drugs, and neglect of the psychosocial dimensions of mental illness (e.g., see Robert Whitaker in Further Readings). Modern approaches to treatment and rehabilitation for the schizophrenia spectrum tend to be at best marginally compatible with key features of the medical model, but it persists today as the dominant paradigm in mental health services.

For a period in the 1980s a reductionist medical model was vigorously endorsed by a social movement of parents and family of people diagnosed with schizophrenia. This was in large part a reaction to 1950s-era psychoanalytic theory and practice that identified emotionally aloof parenting as

The medical model assumes that pharmacotherapy is always the treatment of choice and that physicians should direct all treatment

the cause of the disorder. The movement coalesced as the National Alliance for the Mentally Ill (NAMI). To debunk the psychoanalytic theory of the “schizophrenogenic mother,” NAMI undertook an extensive public education campaign promoting a neo-Kraepelinian view of schizophrenia as a “brain disease.” The “broken brain” imagery of the period (Andreasen, 1984) was particularly appealing for this purpose. Unfortunately, having an incurable disabling brain disease is also quite stigmatizing, and neither public opinion nor mental health policy were positively affected. In the following decades, the competing idea of *recovery from disability* (discussed in the next two sections) overtook reductionism in the advocacy community, and public education now emphasizes the importance of a holistic understanding of mental health and illness. Today renamed National Alliance on Mental Illness, NAMI now includes a broader constituency of people with mental illness and their friends, families, scientists, practitioners, policy scholars, and policy makers.

1.1.5 Psychiatric Rehabilitation

Psychiatric rehabilitation is a holistic approach to treating the schizophrenia spectrum. It is a set of principles concerning the nature of mental illness and disability, an organizational framework for treatment and rehabilitation services, a robust clinical research literature, and an array of specific modalities or treatments for achieving goals and objectives pertinent to recovery. The idea of applying rehabilitation to psychiatric disorders first appeared in the 1940s. Its modern form coalesced later in the 20th century, in the wake of deinstitutionalization and its failures, as a result of a convergence of developments in psychopathology, social learning theory, cognitive and behavioral therapy, public opinion, mental health policy, and a vigorous consumer movement (discussed in the next section). At the center of this convergence was a translation of the psychology of *physical* rehabilitation (i.e., for physical injury) into the modern psychiatric context, by psychologist William Anthony (Anthony, Buell, Sharratt, & Althoff, 1972). The schizophrenia spectrum is a central concern of psychiatric rehabilitation because it represents the most disabling forms of mental illness.

Psychiatric rehabilitation views mental illness as a disability rather than a disease

The key principle of psychiatric rehabilitation is viewing mental illness as a disability to be overcome rather than a disease to be cured (or deemed incurable). This leads to a functional pragmatism that embraces any tool, biological, psychological, or social, that effectively solves problems or achieves goals in the course of recovery. As the schizophrenia spectrum became understood as a disorder of both brain development and psychological development, the importance of addressing multiple levels of human functioning became more obvious, and resonated with psychiatric rehabilitation’s multimodal approach. Today psychiatric rehabilitation is considered by its adherents to operate in a *biopsychosocial paradigm*, informed by molecular neuroscience, cognitive neuroscience, systems biology, social learning theory, and the social psychology and sociology of disability. Mercifully, *biosystemic* has become an accepted substitute for naming psychiatric rehabilitation’s scientific paradigm, and that term will be used in this discussion hereafter.

Psychiatric rehabilitation is also an inherently interdisciplinary approach, due in large part to its respect for the distributed value of biological, psycho-

logical, and sociological methods. Clinical psychologists may play any of several professional roles within a program or service array, from individual or group therapist (using modalities specialized for the schizophrenia spectrum and psychiatric disabilities), to behavior management consultant, to consultant for cognitive and neuropsychological issues, to chief strategist and supervising practitioner of a treatment team managing multiple services and navigating complex sets of problems in pursuit of recovery (Spaulding, Sullivan, & Poland, 2003; Spaulding & Sullivan, 2016a).

Due to its origins in clinical behavioral science, psychiatric rehabilitation is very empirically oriented, emphasizing the need for objective and systematic measurement to assess needs, evaluate treatment effects, and monitor progress toward recovery. This creates challenges in real world implementation, where traditional practitioners and administrators are suspicious or fearful of valid measurement of treatment outcomes. The traditional administrative and professional hierarchies of the medical model are not especially friendly to the methods and procedures of psychiatric rehabilitation, but whether they are absolutely incompatible remains unclear. Working psychiatric rehabilitation programs have been developed in the real world (i.e., outside grant-funded academic research sites), complete with multimodal assessment and treatment, fully integrated with conventional medical regulations and records systems, and their effectiveness in conventional healthcare environments and regulatory regimens has been clearly demonstrated (e.g., Newbill et al., 2011; Paul & Lentz, 1977; Silverstein et al., 2006; Spaulding et al., 2003). However, partly because of conflict with vested interests in the healthcare industry, and partly because of public apathy and persistent stigmatization of mental illness, dissemination of psychiatric rehabilitation has been poor. Today there are important university-based research centers advancing services for the schizophrenia spectrum, and psychiatric rehabilitation in particular, including Boston University, Dartmouth University, the University of Maryland, and UCLA. Several comprehensive textbooks of psychiatric rehabilitation have been published since the turn of the 21st century, representing somewhat different perspectives and emphases, but sharing the key principles (Corrigan, Mueser, Bond, Drake, & Solomon, 2008; Liberman, 2008; Pratt, Gill, Barrett, & Roberts, 2014; Spaulding et al., 2003). Nevertheless, application in the real world falls far short of its potential.

1.1.6 Recovery

The familiar meaning of “recovery” is grounded in our understanding of healing after infectious disease or injury. Recovery begins when the disease is cured or the injurious conditions removed and is complete when the body has repaired its damage and regained full functioning. In application to the schizophrenia spectrum, the idea of recovery has taken on a new meaning (Spaulding, Montague, Avila, & Sullivan, 2016). In psychiatric rehabilitation, recovery means overcoming disabilities and achieving the best possible quality of life. This meaning intersects with the values of the *recovery movement*, a consumerist social movement whose roots arguably extend back to the early 20th century, and which became influential in national mental health policy.

The recovery movement views schizophrenia spectrum disorder as a disability that can be – and often is – overcome

William Anthony, a founding figure in psychiatric rehabilitation, pointed out this intersection in the 1990s. In the recovery movement, the concept acquired connotations of a decent quality of life and hope for a better future, beyond overcoming the effects of mental illness. Although current usage is quite diverse, recovery always includes the ideas of overcoming disability and of treatment and recovery goals being defined with or by the person being treated, typically including normalization of role functioning in addition to remission of symptoms. By implication, recovery connotes a rejection of key features of the medical model.

A heuristically useful distinction among definitions of recovery is between *outcome* and *process*. In recovery as an outcome, a person is recovered when symptoms and disabilities are either no longer present, or are reduced to the point of not interfering significantly with daily living and/or quality of life (i.e., with normal role functions). Defined in this way, recovery can be readily operationalized and measured, facilitating studies of groups of individuals and types of treatment. In contrast, recovery as a process means that the recovering person is rediscovering meaning in life apart from the mental illness and its effects. Recovery in this sense may be independent of treatment or other externally provided services. It is a personal journey for each individual. There is a diversity of opinion in the recovery movement about how much treatment or other services can inform, enhance, or facilitate recovery as a process. Many practitioners, including William Anthony, argue that psychiatric rehabilitation is essentially a toolbox for those pursuing recovery, either as an outcome or a process. Others point out that family and community can provide support for recovery beyond what can be provided by mental health services. Everyone agrees about the importance of the recovering person's active involvement in all services, including selection of outcome criteria and recovery goals.

The ideas of rehabilitation and recovery have had a profound impact on national mental health policy, if not practice. This is evident in a series of federal documents, first a report from the US Surgeon General in 1999, then a report from a special commission appointed by the US President in 2003, then a National Consensus Conference on Mental Health Recovery and Mental Health Systems Transformation in 2004 (U.S. Department of Health and Human Services, 2004). The consensus conference defined recovery from mental illness as “a journey of healing and transformation enabling a person with a mental health problem to live a meaningful life in a community of his or her choice while striving to achieve his or her full potential” (p. 1). Ten “fundamental components” of recovery were enumerated: self-direction, person-centered individualization, empowerment, holistic perspective, expectation of non-linear progress, a strengths-based focus, peer support, respect, personal responsibility of the consumer, and hope for a better future.

The concept of recovery is very different in the context of substance abuse

In the context of the schizophrenia spectrum, “recovery” and “rehabilitation” must not be confused with the same terms used in the addictions/substance abuse context. In the latter, “recovery” derives primarily from the quasi-religious 12-step model historically associated with Alcoholics Anonymous. There are superficial overlaps, e.g., the idea of personal responsibility for change, but recovery in the schizophrenia spectrum is profoundly different from recovery from alcoholism or other addictions. In the substance abuse