

# Evolving Views of Mental Disorders and Their Treatment

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**D**uring the past three decades, research advances in the biomedical and behavioral sciences have converged to revolutionize—or rather “evolutionize”—public and professional views of the etiology and treatment of mental disorders. As Sabshin<sup>1</sup> has observed, at long last science has replaced ideology as the foundation for understanding and designing treatments for these disorders. One might also add that, at long last, science is providing solid support for the biopsychosocial approach long espoused by family physicians and many mental health clinicians and researchers. *(Arch Fam Med. 1993;2:787-790)*

Several disciplines have contributed to this transformation. The most dramatic evolutionary thrust in the post-Freudian modern mental health field came from psychopharmacology, which not only armed clinicians with effective medications but also gave researchers enormously powerful tools for studying nervous system function and behavior. The often striking effectiveness and behavioral consequences of psychotherapeutic medications combined with the growing understanding of their mechanisms of action gave added impetus to the belief in and search for the biological foundations of mental illnesses.

A second important impetus stems from advances in the behavioral sciences that, based on rigorous human and animal observation and experimentation, have called into question many of the prevailing assumptions of clinicians and theorists and have offered new, nonpharmacologic approaches to treating certain mental disorders. A particularly important case in point is the impact of modern developmental psychology on views of the nature and long-term impact of early childhood experiences. Ideologically based and often judgmental views of the effects of parent-

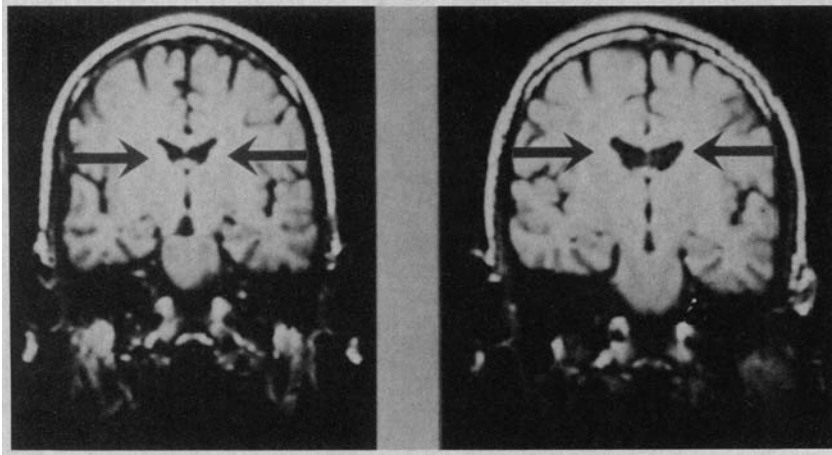
ing on the development of severe mental illnesses such as schizophrenia have been virtually cast aside in the face of new understanding about the nature and development of these illnesses and the role of multiple factors—biological as well as behavioral and environmental—in their development.

A third and important evolutionary force has been the growing sophistication of research that assesses the effectiveness of treatment. In addition to allowing the rigorous evaluation of biological and behavioral treatments for specific mental disorders, this body of research contributed to the growing credibility of the mental health field. As these forces combined with the increasing power of mental health research to probe and alter systematically both brain function and behavior, explanations of mental illness not readily supported by research data were increasingly challenged and eclipsed by scientific explanations.

The newest phase in the scientific evolution of the mental health field is now being driven by the same technological developments that are transforming the rest of biomedicine and biomedical research: molecular genetic technologies, computer and information technologies, and imaging technologies. To illustrate the impact of these advances, some examples are drawn from the field of imaging technologies.

From the National Institute of Mental Health, Rockville, Md.

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**Figure 1.** Loss of brain volume with schizophrenia is shown by magnetic resonance imaging comparing the size of ventricles (inward-pointing arrows) of monozygotic 44-year-old male twins discordant for schizophrenia. The ventricles of the affected twin (right) are enlarged. Unaffected twin at left.

### IMAGING TECHNOLOGIES

Imaging technologies are providing invaluable insights into the relationship between the brain and mental disorders. One example of such findings comes from laboratories of the National Institute of Mental Health, Rockville, Md, where researchers have been comparing monozygotic twin pairs in which only one twin developed schizophrenia.<sup>2</sup> Magnetic resonance imaging studies show that the cerebral ventricles of the affected twin are substantially larger than those of the unaffected twin (**Figure 1**). What is of interest, of course, is not that the ventricles are larger but that the surrounding tissue appears to be smaller. This finding, now replicated in many studies of singletons and in more than 30 pairs of twins, adds to the growing body of evidence suggesting that schizophrenia is a brain disease that involves structural abnormalities.

Functional brain scans also show a major difference between persons with and without schizophrenia. As Buchsbaum<sup>3</sup> and workers in other clinics have demonstrated, positron emission tomographic scans reveal reduced activity in the basal ganglia, frontal lobes, and temporal lobes of patients with schizophrenia when compared with normal controls.

In other functional scanning

studies, National Institute of Mental Health researchers have found no differences in regional cerebral blood flow between normal and schizophrenic twin pairs at rest or engaged in a relatively simple number-counting task.<sup>4</sup> (In the latter instance, both siblings showed heightened activity in the prefrontal area.) However, when subjects were given the Wisconsin Card Sorting Test, a cognitive task that patients with schizophrenia find difficult to perform, the prefrontal area was activated only in the normal subjects. Studies such as these, showing a brain dysfunction directly associated with a behavioral dysfunction, support the argument that major brain abnormalities are associated with schizophrenia.

Functional brain abnormalities have been observed in association with other mental disorders as well. For example, when comparing positron emission tomographic scans of normal and clinically depressed subjects, Drevets et al<sup>5</sup> found that persons with unipolar major depression had extensive hyperactivation in the frontal pole. Interestingly, normal subjects asked to contemplate sad thoughts or memories also showed heightened, although relatively less intense, activity in the same brain area.<sup>6</sup> In conjunction with many others, findings such as these suggest that brain abnormalities are linked to af-

fective as well as schizophrenic disorders.

In addition to shedding new light on structural and functional brain abnormalities in mental disorders, imaging technology is providing pathbreaking information on the relationship of brain and behavior in normal persons. For example, researchers at Washington University in St Louis, Mo, have demonstrated that different areas of the brain are activated as one hears, sees, and speaks words and generates associated words (**Figure 2**).<sup>7</sup> These findings contradict the earlier, simpler belief that all language activities are located in a single brain area.

### CHANGING VIEWS ON MIND-BODY INTERACTION

The imaging revolution and its sister technological revolutions are fundamentally changing long-held views of mind-body interactions. The emerging data argue that *behavioral* and *biological* are no longer separate concepts and that the long-standing notion of mind-body dualism can be retired. As the philosopher John Searle<sup>8</sup> recently observed, "All our mental life is caused by brain processes." (It is still unclear, of course, just how the brain generates the mind.)

The often dramatic effects of psychopharmacologic treatments, coupled with major advances in neuroscience research, have contributed to the adoption in some quarters of a purely biological approach to understanding and treating mental disorders. In essence, for some researchers and clinicians, a focus on the cell has replaced a focus on the self. This exclusively biological approach, however, largely ignores psychological and social factors, just as earlier psychosocial explanations ignored biological factors.

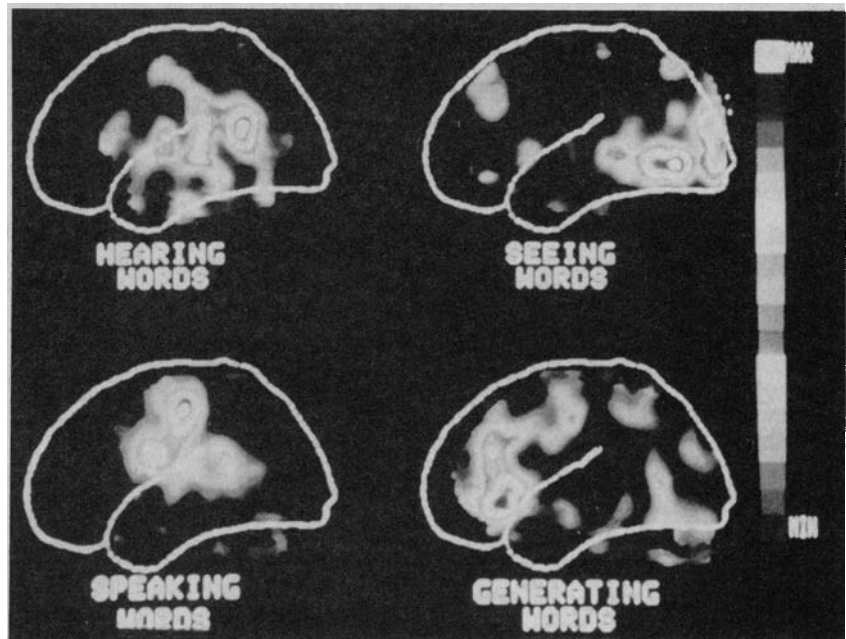
However, this trend is increasingly counterbalanced by the growing recognition, based on scientific evidence, of the truly interactive effects of biological and psychosocial factors in behavior. The mental

health field, I believe, is at last moving toward a new stage that might best be characterized as *biopsychosocial*. In this stage, severe mental disorders are no longer seen as failures of will or of parenting or as the inevitable sequelae of childhood trauma, but neither are they regarded as the simple and direct result of purely biological factors alone. Rather, they are viewed as brain dysfunctions displayed as behavioral dysfunctions. Those brain dysfunctions reflect the interplay, not yet well delineated, of three factors: biological (genetic heritage, brain structure and function, and bodily health), environmental (social, cultural, and physical milieu), and psychological (learning and individual temperament and personality).

### TRENDS IN TREATMENT

This broader and more realistic view of mental disorders is developing in part from advances in mental health treatment. Clinical research attests to the growing effectiveness and specificity of a large array of pharmacologic treatments for severe mental disorders, such as schizophrenia, unipolar and bipolar depression, and obsessive-compulsive disorder. What is less well known, however, is that similar evidence is accumulating for psychosocial treatments as well. Luborsky<sup>9</sup> recently asked colleagues in treatment research to rate, based on their familiarity with relevant research literature, the most promising psychosocial treatments (psychotherapies and other nonpharmacologic therapies) of the last 15 years. This group identified a wide variety of examples, of which the highest-rated treatments included cognitive-behavioral therapy for panic disorder, family therapy and social skills training for patients with schizophrenia and their families, psychosocial therapies for suicidal patients, exposure and social skills training for phobias, and cognitive-behavioral and interpersonal therapies for depression.

The growing capacity for sys-



**Figure 2.** Computed positron emission tomographic images as a normal subject hears a word, sees a word, speaks a word, and says an associated word. White areas are the most active.

tematic evaluation of the effects of pharmacologic and nonpharmacologic treatments has demonstrated the relative strengths and the limitations of both these approaches. It has also suggested new ways to exploit their complementarity and synergy. The recognition that even the most effective currently available treatments often cannot totally restore functioning for persons with severe mental disorders has required the adoption of a more encompassing approach, one that combines pharmacologic and psychosocial approaches and rehabilitation. Indeed, the combination of these approaches has often proved to be more powerful than either of them alone.

### COMBINED TREATMENT

One of the best documented examples is a combined treatment used to avert relapse in patients with schizophrenia who are living with their families in the community. Hogarty and colleagues<sup>10</sup> have found in a controlled study that supplementing maintenance drug therapy with either family management or social skills training can lower by one half the normally high rate of relapse (nearly

40%) seen within a year of hospital release when drug therapy is used alone. The combination of drug therapy, family management, and social skills training results in no relapse within a year. A recent follow-up study by the same team indicates that the effect of ongoing family intervention on prevention is sustained through 2 years, but social skills training affords no additive effect (**Figure 3**).<sup>11</sup>

These findings, like many others, suggest that medication is often necessary but not sufficient as a treatment for mental disorders. Especially in the community care of persons with severe and long-term mental disorders such as major depression, effective treatment usually requires both pharmacologic treatment to reduce symptoms and psychosocial treatment to help patients adjust to community living and become more effective, productive members of society. Such an approach, based on empirical findings and clinical experience, represents the next evolutionary step beyond the psychopharmacologic dominance of treatment for mental disorders.

Viewing these disorders in a multifaceted, psychobiological context has

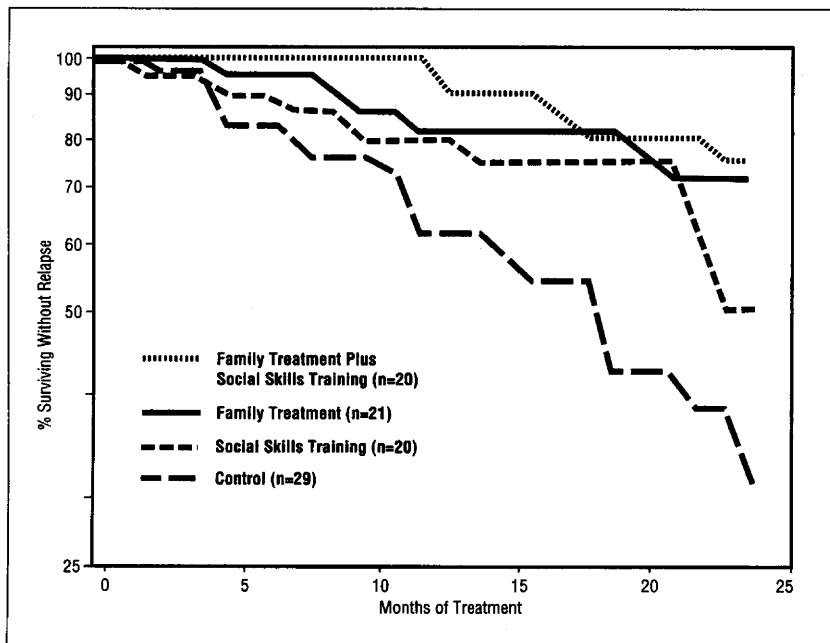


Figure 3. Two-year survival without relapse among treatment takers (N=90) (adapted from Hogarty et al<sup>11</sup>).

also encouraged a more comprehensive, integrated approach to the provision of treatment and rehabilitation services, especially for people with severe mental disorders. As one example, the recent report of the Federal Task Force on Homelessness and Severe Mental Illness (Washington, DC) entitled *Outcasts on Main Street*<sup>12</sup> reflects this emergent perspective, and its recommendations are directed toward implementing an integrative approach to the homeless, severely mentally ill population. In addition to the treatment of mental disorders per se, the task force identified the following as essential elements of a community-based system of care for these persons: assertive outreach, integrated care (case) management, appropriate housing, substance-abuse treatment, health care, income support and benefits, rehabilitation, vocational training, and employment assistance. Thus, the emerging view of the appropriate service system for persons with severe mental disorders, like the evolving views of the etiology and treatment of such disorders, accepts these disorders as truly bio-

psychosocial phenomena with biological, environmental, social, and behavioral components.

### CONCLUSION

In summary, after many extreme positions stressing either the somatic or psychosocial pole at the expense of the other, both scientific and technological (treatment) advances are driving the mental health field to embrace a truly biopsychosocial approach that, in turn, is now driving both research and practice. Spurred by the exigencies of treatment and rehabilitation and by an expanding scientific understanding of causes, these changes are yielding a richer understanding of the complex underpinnings of normal and abnormal human behavior, more effective treatments for mental disorders, and help for a wider range of mentally ill persons. They are also laying the groundwork for progress toward the next evolutionary frontier: the development of effective biopsychosocial prevention techniques.

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Figure 1 was adapted from Daniel R. Weinberger, MD, and E. Fuller Tor-

rey, MD, National Institute of Mental Health. Figure 2 was adapted from Marcus E. Raichle, MD, Washington University School of Medicine.

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