

Charlie Rose Brain Series: Panel Discussion on Mental Illness

Summarized by Thomas T. Thomas

On June 22, 2010, in Episode 9 of his Brain Series, long-time National Public Radio moderator Charlie Rose assembled a panel of distinguished experts¹ to discuss the personal, medical, research, genetic, and social dimensions of mental illness. At our November 17 speaker meeting we viewed and discussed this episode, which included the thoughts of:

- **Kay Redfield Jamison**, clinical psychologist at Johns Hopkins University, who suffers from bipolar disorder.
- **Elyn Saks**, law professor at the University of Southern California and schizophrenia sufferer.
- **Eric Kandel**, professor of biochemistry and biophysics at Columbia University, Nobel laureate, and co-host of the Brain Series.
- **Jeffrey Lieberman, MD**, psychiatry professor at Columbia University.
- **Helen Mayberg, MD**, professor of psychiatry and behavioral sciences at Emory University.
- **Stephen Warren**, professor of human genetics at Emory University.



KAY REDFIELD JAMISON

The discussion focused on major depression, bipolar disorder, and schizophrenia and attempted to understand the biological nature of these diseases and what we can do about them. “These are devastating disorders,” Kandel said. “They affect the way people think and feel and their motivations. One of the tragic aspects is that they affect people early in their lives, just as they are beginning to reach the peak of their productivity and ability to enjoy themselves. The diseases remain with people for the rest of their lives.”

Hippocrates in ancient Greece recognized that these were medical illnesses. That understanding was lost in the Middle Ages and was only recovered in the 1800s with the advent of modern medicine. Kandel stressed that these disorders are now treatable, and that optimized treatment includes early intervention and a combination of psychotherapy and drug therapy. With effective treatment, people can now lead productive lives.

Kay Jamison described her experience with bipolar disorder and depression, which she said affects not only mood but also energy and sleep. “It’s not a mood of sadness but of hopelessness, deadness, and disinterest in life. Everything that was interesting in life becomes irrelevant.”

¹ www.charlierose.com/view/collection/10702.

“On the other hand, with mania people feel great, a lot of energy. So it’s very difficult to tell them they’re sick. That’s one of the major clinical problems in treating these illnesses.”

Depression is isolating and painful, she said, and it’s very different from grief or the pain of a life-threatening illness. “Depression is a level of arterial agony that is just astonishing. You can’t think. You can’t feel. You want to die.”

Helen Mayberg explained some of the current work on the biology of depression. It was once thought that people were “a quart low” on neurotransmitters like serotonin and dopamine. “But just filling up the tank didn’t keep you well,” she said.

“The advent of neuroimaging like PET scans and functional MRIs have enabled us to map the brain circuits that mediate this disease.” Mayberg discovered an area in the brain, the subcallosal cingulate, that is overactive in depression, while areas in the frontal lobe—the thinking parts of the brain—are underactive. “There’s almost a tug of war, a state of psychic pain, driven by this anatomical defect.”

Elyn Saks described her experience of schizophrenia. “Unlike mania, which is fun, a psychotic episode is enormous pain—a waking nightmare with bizarre images, impossible things happening, and utter terror. But you can’t just wake up and make psychosis go away.” She also described other positive symptoms of her disease such as hallucinations and disorganized thinking.



ELYN SAKS

Saks said that psychotherapy was beneficial for her in improving the negative symptoms. By making connection with her therapist, she could start relating to other people too. She struggled for years with medication, believing that she could prove she wasn’t ill by getting off her medication. Saks has since come to accept medication as “a dimmer switch” for psychosis rather than an on-off switch.

“I used to say, ‘I don’t want to use a crutch.’ Now I say, ‘If my leg were broken, wouldn’t I use a crutch?’ Shouldn’t I treat my neurotransmitters at least as kindly?”

Stephen Warren said we know genetics plays a role in schizophrenia by looking at family histories. One percent of the general population is at risk for the disease. That rises to 6% for people whose parents have schizophrenia and 9% when their siblings have it. For fraternal twins the coincidence is 17% and for identical twins 48%. “What’s important,” said Warren, “is that the risk for identical twins is not 100%, as it is for a simple genetic trait like cystic fibrosis. That says other factors like environment play a role.”

Warren noted that genetic factors in mental illness present a challenge because the brain is “an enormous mutational target.” Brain function expresses proteins from up to 10,000 different genes, compared to about 7,500 for kidneys and 6,000 for the pancreas. “Brain function is complicated, but with new sequencing technologies we may be able to identify these genes in the future.”

Jeffrey Lieberman said that genes confer a degree of risk that environment can either increase or reduce during brain development. Nutrition, infection, or toxic exposure during pregnancy may be factors. These changes seem to be dormant

during childhood, and then the stresses of late adolescence may bring on dopamine dysregulation, leading to psychotic symptoms.

Lieberman outlined the dopamine pathways in the brain that affect emotion, thinking, and motivation—all of which come into play in schizophrenia. Repeated insults to the brain through psychotic episodes, he said, can lead to progressive deterioration of synaptic connections and loss of gray matter.

In discussing the differences between grief and depression, Kay Jamison noted that people experiencing grief still feel alive and that other people will reach out to them. But depression is a deadened, unremitting state; other people tend to avoid, and cannot connect with, the sufferer. Helen Mayberg noted that the brain scans of people who are sad are very different from those of people in depression.

In the context of treatment involving psychotherapy versus medication, Eric Kandel noted that brain scans have indicated physical changes following psychotherapy. “When you and I have a conversation, it changes our brains,” he said. Lieberman further postulated that while medication restores the chemical balance in brain pathways, “the consistent, supportive, and healthy relationship with the individual providing the therapy is a key ingredient to turning around mental illness and enabling people to achieve what Kay and Elyn have, as opposed to a life of despair and inability.”

About psychotherapy, Saks said that, first, stress is bad for any illness, and psychotherapy helps you identify and avoid stressors. Second, it helps you develop a stronger “observing ego,” so you can step back and see what’s going on in your mind. Third, it helps you come to terms with the blow to your self-esteem of having a mental illness. “It’s a place where you can bring your chaotic, scary, and destructive thoughts and say them out loud.”

The panel discussed the current reimbursement system. Insurance, Medicaid, and Medicare do not generally provide for psychotherapeutic services as a means of cost containment. Jamison observed that medication doesn’t do much good unless people will take it, and psychotherapy helps with medication compliance.

Still, some people don’t get better with any combination of medication and therapy. Mayberg noted that electroconvulsive therapy can sometimes help. Deep brain stimulation with electrodes can also “tune” the circuits involved with depression. “In the operating room,” with stimulation of the subcallosal cingulate, “we can watch the patient wake up.” This approach also has potential with the various circuits involved in schizophrenia, although early intervention is necessary to avoid loss of synapses.

Charlie Rose and the panel agreed that, so far, we are discussing treatment, prevention, and remission—but not cure. However, this is so for many diseases like diabetes and hypertension. “Mental illnesses,” said Eric Kandel, “are different from diseases like Parkinson’s or amyotrophic lateral sclerosis. These involve the highest, most complex functions of the brain.”