Riding the Wave of Change

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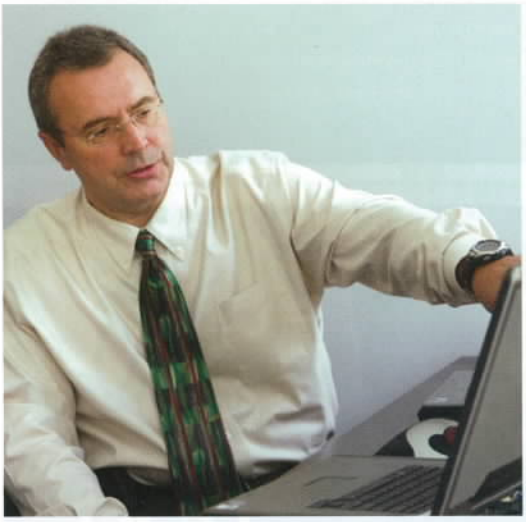
A wave of change is surging through the field of behavioral science, expanding our understanding of brain function and its relationship to mental illness. Where we once relied on our carefully honed observation skills to identify and define psychological disorders, we now have available to us a variety of advanced technologies that can be used to explain brain functions long considered mysteries. The use of neuroimaging—including tools such as EEGs—represents a prime example of how far we have come in understanding behavior.



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In the early days, we found it impossible to define functional brain networks and their role in the expression of behavior. Only now can we relate brain function to normal and pathological states. As a result, we enter a new era where behavioral correlates can be defined by our understanding of normal and abnormal brain function. It is an approach that requires us to look at each patient and to design highly individualized treatment plans, rather than using a one-size-fits-all therapy plan.

I offer the example of two patients with clinical depression and identical depression measure scores. Although they appear clinically similar, we still may find they have different biological abnormalities that produce distinct responses to the same therapeutic interventions. Without knowing the biological underpinning of a disorder, we cannot know what we are treating: our therapeutic approaches become no more precise than a shot in the dark or the flip of a coin. It is not surprising then that for a number of clinically defined populations, published data reports significant pharmacological treatment failures and placebo responses.

Consider the issue of Post-Traumatic Stress Disorder, which was long conceptualized as a behavioral-psychological disorder without biological underpinnings. True, the work of a few researchers, such as Douglas Bremner, shed some light on the physiological manifestations of PTSD. Bremner used MRIs to identify changes that occurred in the region of the brain that plays a central role in memory, PTSD patients. However, the changes that he noted—specifically, a shrinking of the brain tissue, which could be correlated with a loss of memory—bear similarities to those noted in patients diagnosed with depression, making it impossible to use this single physiological factor as a basis for PTSD diagnosis. While the use of imaging has helped us take great strides in diagnosis and treatment, more research is needed to use these technologies to their greatest advantage.

During the years I spent as director of clinical neuroscience at Hines VA Hospital, my colleagues and I learned a great deal about PTSD using neuroimaging technologies. We learned, for example, that patients on the PTSD spectrum have unique electrophysiological measures (EEGs) that can be helpful in deciding on a course of treatment that will be effective. Another imaging technology—Single Photon Emission Computed Tomography (SPECT)—was used to identify blood flow patterns. SPECT data provided us with a wealth of new information; we could use the patterns to predict the success of electroconvulsive therapy in patients whose depression had thus far been resistant to treatment and, in another study, we used the information to identify patient subpopulations with cocaine abuse histories. These findings open a number of new pathways for us; by becoming increasingly aware of various patient subpopulations, we will be able to design more precise treatments for them.

With some frustration, one might view these new technologies as the more accurate way to define and treat specific psychological problems;

they may ask why we cannot just rely on biology instead of the more traditional observation methods. I believe the fundamental issue is that the development of the diagnostic classifications that are widely used today came about long before the availability of brain imaging, and well before discoveries in the fields of behavioral neurology, biological psychiatry, neuropsychiatry, and clinical neuroscience. By their very nature, these classifications lack the precision necessary to describe exactly what is happening the brain. So the brain-to-behavior approach that is driving my work—and the work of other neuropsychologists—is far more complicated than simply reversing the process. We have a long way to go in bringing the fields of biology and psychology together, but the potential is great.

We must be prepared to ride the wave of change that is redefining behavioral science. I strongly believe we must shift our thinking and train clinician-scholars in the field of psychology by exposing them to sound scientific inquiry and brain-related sciences. We should also expose students to objective clinical research that relies on the scientific approach and struggles with data that relate brain function to behavior. To this end, I am very excited by our new Applied Behavior Analysis (ABA) program with its rigorous assessments and precisely measured outcomes; I see tremendous opportunities for research collaboration among imaging, biomarker-based approaches, and ABA. ABA trains careful observers with a keen eye for behavior quantification and outcome measurement. One can imagine how well clinicians could develop patient-specific therapies when using careful therapeutic evaluation, imaging, and acute behavioral interventions. With this approach, we could design interventions that target dysfunctional networks while using the patient's existing strengths.

FACULTY IN THE NEWS

Dr. Jaleel Abdul-Adil, associate professor of clinical psychology, was quoted in a *Daily Journal* story about the influence of hip-hop music on children (6/24).

Dr. Ellis Copeland, chair of the Department of School Psychology, was quoted in a *Chicago Parent* magazine story titled "Taking the Stress Out of School" (7/25).

Dr. Nancy Davis, associate vice president of academic affairs, offered commentary for a Forbes.com story about people who embellish on their resumes. The story also ran in the *Sydney Morning Herald* (6/11).

Dr. Todd Dubose, assistant professor of clinical psychology, appeared on the National Geographic Channel program "The Final Report." Dr. Dubose discussed the psychology of cults, particularly the story behind the Heaven's Gate cult from the late '90s (9/29).

Dr. Michael Fogel, chair of the Forensic Psychology Department, was quoted in *The Daily Journal* about a criminal case in Will County (5/24).

Dr. Evan Harrington, associate professor of clinical psychology, contributed to an *EDGE Boston* story titled "Gay Panic Defense Fading in Murder Cases" (7/17).

Dr. Christoph Leonhard, professor of clinical psychology, was quoted in a *Chicago Tribune* story about people who compulsively collect recipes (6/4). The story also appeared in the Lincoln (Neb.) *Journal Star* (7/16).

The Chicago School received mention on the WBEZ Chicago Public Radio program Worldview in a segment featuring Fr. Paul Satkunanayagam, S.J. Fr. Paul talked about his work to deliver counseling services to people in Sri Lanka and about his work with **Dr. Michael McNulty,** a Chicago School faculty member.

Dr. Daniela Schreier, assistant professor of clinical counseling, discussed stress and economic anxiety for a Medill News Service story (10/7). She also was quoted in a *Dallas Morning News* story about people losing weight after a painful divorce (10/6).

Dr. Hector Torres, Center for Latino Mental Health coordinator, appeared on WBEW FM-89.5 to discuss the center and The Chicago School's Latino mental health initiative (9/11). The center was profiled in the *Columbia Chronicle*, a South Loop weekly (9/15).

Dr. Debra Warner, assistant professor of forensic psychology, contributed to an article about negative self talk that appeared on moodletter.com, a website dedicated to mental health (10/8). She also was quoted in a *Therapy Times* article about political correctness and the patient-therapist bond (9/15).

Dr. Nancy Zarse, associate professor of forensic psychology, was interviewed by ABC7's Kevin Roy for a feature story about campus shootings (8/17).