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## **Shadow Syndromes: People with Mild Forms Of Serious Disorders By John J. Ratey, M.D.**

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Neuropsychiatry has undergone a major conceptual shift since the 1960s. In those days everyone was speculating about neurotransmitter levels in mental illness. (Neurotransmitters are the chemicals, like dopamine and serotonin that carry messages between the brain's nerve cells). Researchers focused upon neurotransmitters---or, rather, the breakdown products of neuro- transmitters that can be found in blood and urine---because, given the technology of the day that was what they could study. Blood, urine, spinal fluid: these were the substances researchers could actually collect and measure. We could not look inside the skull.

The advent of the brain scan changed everything. Brain scans allow neurologists to move inside the skull: to look at the brain's structure and watch the brain in action as it processes thoughts and emotions. We now have available anew echo-planar magnetic resonance imaging technique that can capture an image of the brain changing every twenty-five milliseconds. In the words of Dr. Joel Yager of UCLA's Neuropsychiatric Institute, soon we will actually be able to watch the "mind boggle."

Thus far, this approach has been enormously fruitful. Alan Zametkin of the National Institute of Mental Health has discovered certain areas of the brain involved in attention deficit disorder, areas that appear to be metabolizing glucose too slowly compared to normal brains; others have found the areas affected in obsessive compulsive disorder---areas which, in this case, appear to be metabolizing glucose too quickly.

Now that we can actually look at the brain in action, we have begun, inevitably, to think in terms of brain geography as well as chemistry. In the future we will speak of certain areas of the brain, areas we call microenvironments, and we will think of medication in terms of its ability to target those locations. We will also be adding the elements of time and recursivity to the mix: the way in which a change in one location of the brain, over time: filters out to cause changes in other locations. These downstream changes feed back, in turn, into the original site of alteration, affecting it once again. This does not mean that all talk of chemical imbalances will fade away, but instead that the notion of a chemical imbalance will become more precise as neuroscience advances

Prozac, for instance, is known to raise serotonin levels in the brain, so naturally psychiatrists concluded that it is the rise in serotonin that relieves the depression. But in fact this rise takes place the first day a patient takes the pill, yet the depression does not lift until three to six weeks later. Obviously, something else is going on---something that has to do with the brain's geography and timing, with the particular areas of the brain in which Prozac does or does not find docking sites, and with feedback loops between and among these areas.

Thus, in the future we will see the language of "brain chemicals," "imbalances," and "levels" joined, and sometimes replaced, by the language of microenvironments, timing, and recursivity. Already, psychiatrists talk about "frontal-lobe types": these are the sticky people we can't get off the telephone. Such people often have problems involving differences in the frontal lobe, hence the nickname. It is a population that has become known by the place in their brain that is not working properly--not by the neurotransmitter that is "out of balance."



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## **Normal People and Their Problems**

When you think about life in terms of the brain's geography, you quickly develop a real appreciation for Freud's dictum that normal people are not all that normal. The brain is infinitely complex, and a difference in just one tiny area can produce major differences in behavior and emotion---either for good or for ill. Because everyone's brain is different, it is easy to see why all of us may end up with our own particular brain-based emotional difficulties, as well as with our own unique talents and strengths.

The biology of the brain's development in early life also points to the possibility that all of us may end up with our own unique mental issues. At the moment of conception tiny differences in genetic endowment from one child to the next will result in major differences in their fully developed brains. Then, as the fetal brain grows, small differences in the biology of the mother's womb (due to hormones, nutrition, viruses, drugs, cigarettes, etc.) will also produce significant differences in the finished brain. In short, the very-complexity of the brain's development makes it likely that all of us end up with parts of our brain that "grew well" and parts that did not grow so well. Every brain is unique, and every brain is going to have its talents and its problems. From the outside those problems are going to look like emotional issues, or cognitive deficits, or both.

Even if you were lucky enough to come into this world with a brain that processes information and deflects stress with the best of them, there is No guarantee of making it to middle age with those capacities intact. One of the important truths in life---a truth that is sometimes lost in the rush to the new biology---is that the biology of our brains is not fixed at birth. The brain develops in response to its environment, which means that painful life experiences leave their mark. We now- possess a fair amount of evidence indicating that psychological trauma actually alters the physical makeup of the brain, that a single episode of major depression in response to a devastating life event scars not only our souls but our gray matter as well. Moreover, some psychiatrists now speculate that, like the long-distance runner's knees, the brain's capacity to handle stress may decline with age. In short, even the golden baby who begins life with a happy face and bright eyes is likely to acquire a few dents and scrapes along the way.

Thus, whether for reasons of inborn genetics or reasons of the inevitable wear and tear of life, we may all have our mental "weaknesses." And until recently, these weaknesses were seen simply as personality flaws that we, typically, blamed on our parents. The man who can't talk about his feelings, the mother who screams at her children one moment and smothers them in kisses the next, the wallflower, the loner, the needy neighbor you can't get off the telephone: the absent-minded professor, the confirmed bachelor, the overprotective mom who won't take her children to the park for fear they might catch a bug, the husband who tantrums like a four-year old while his children cower before him, the gifted person who cannot seem to live up to his or her potential---all of these "types" have always seemed to be just that: types. The thought that such ordinary, everyday phenomena as a bad temper or an "inferiority complex" (a popular problem back in the 1950s) might have a biological basis has, until recently, not crossed our minds.

But neuropsychiatry is now discovering that a great deal of what we thought was due to (poor) upbringing in fact is heavily influenced by the genetics, structure, and neurochemistry of the brain. Every one of the troublesome personalities made famous by our popular press likely has its roots in an unsuspected brain difference: the "Peter Pan syndrome," the "Cinderella complex," the "women who love too much," the "men who can't love," the "codependent"---the list goes on. All of these people are doubtless going to turn out to have brain differences that contribute to their Peter Panness or their Cinderellanness or their co-dependentsness ---differences that may also contribute to higher levels of creativity or energy or personal magnetism in their lives as well.

Of course, differences in the brain cut both ways: as studies of artists with manic- depressive illness have shown, a brain difference that handicaps us in one realm may also endow us with greater capacities in another. Our purpose in writing our recent book, *Shadow Syndromes*: was not to pathologize every nook and cranny of everyday life, but to offer help for those areas in which our brain differences do hurt more than help. Until now there has been no biologically based help for the difficult personalities among us because no one has suspected that their problems might have biological facets.



## **Shadow Syndromes**

In order to take a closer look at normal "craziness," we can learn from the kinds of "craziness" that are not so normal. When we speak of schizophrenia or severe manic-depression, there is no question in anyone's mind that the person is ill. And it is easy enough for us to believe that these illnesses are biological in origin (though it was not so long ago that these illnesses, too, were blamed upon bad parents.)

The confusion begins when you see patients who do not fit the classic categories, but who nevertheless have very real difficulties in life. Are these difficulties due entirely to upbringing and environment, or do they, too, have some basis in the brain's biology? Modern psychiatry has been struggling to make sense of these people for fifty years. Doctors diagnose their patients according to the syndromes described in the DSM-IV, the Diagnostic and Statistical Manual, Fourth Edition. A syndrome is a set of behaviors that consistently appear together: a set of behaviors the patient, the doctor, or the patient's friends and family can observe and describe.

A syndrome is not at this point, a physical marker like the positive result on a test for HIV antibodies that establishes a diagnosis of HIV-positive. When a psychiatrist diagnoses the syndrome of panic disorder, for example, he cannot---yet---perform an MRI magnetic resonance imaging) that tells him whether the patient does or does not qualify for the diagnosis (although we may be closest to such a test for this particular disorder). Instead, he looks for symptoms: a pounding chest, rapid heartbeat, shortness of breath or hyper-ventilation, sweating or coldness and changes in temperature regulation, the fear that one is having a heart attack, sometimes a feeling that the person is going to pass out, sometimes a feeling that he or she is going to go crazy. This is the set of symptoms that make up the syndrome.

The problem is, every patient is different---including every patient with the same diagnosis. As a result, the number of syndromes recognized by practicing psychiatrists has leapt in the 40 years since the first edition of the DSM appeared in 1952. That volume described 80 categories of abnormal behavior. DSM-II, published in 1968, more than doubled this number to 145 syndromes, and DSM-III raised the total to 230. DSM-IV, which appeared in 1994, lists 410 in all. What the ever-increasing number of possible diagnoses means is that a person who comes into a psychiatrist's office complaining of being "depressed," for example, could be categorized as belonging to one of four major categories ---bipolar disorder, major depression, "other specific affective disorders," or "atypical affective disorder"---with several subcategories included within each of these main categories. A patient diagnosed as bipolar could then be further characterized as mixed, manic, or depressed, for instance.) It is a complex business.

As time goes by, we find that the art of diagnosis grows ever more fragmented; seemingly sound diagnostic categories keep breaking down. Emotional problems do not fit the "concrete blocks" of the DSM-I, -II, or -III; real people come into the office with bits of this and pieces of that. A patient might show signs of panic disorder, signs of major depressive disorder, and signs of a narcissistic personality disorder all in the same package. He or she may have parts of a whole array of syndromes, and yet not suffer from all of the symptoms of any one syndrome. Or he may fit every aspect of a syndrome down to the smallest detail and yet be so mildly affected compared to either people suffering from that problem that even a good therapist might miss the diagnosis. Finally, a patient may exhibit only one or two symptoms from a particular syndrome, a condition long known as a *forme fruste* in conventional medicine.

A patient with a *forme fruste* of Graves disease, for instance, might have the bulging eyes without the sweaty hands, rapid heartbeat, irritability, and weight loss that accompany a full-fledged case of the illness. A *forme fruste* is an incomplete expression of an illness, though the term is little used today. The phrase "shadow syndrome" is substituted because the meanings of the word "shadow," both literal and metaphorical, capture the nature of a mild mental disorder. In the literal sense, a shadow is an indistinct form of something all too vivid and real, just as a shadow syndrome is an indistinct and seldom obvious form of a severe disorder. And metaphorical shadows cast a pall (cast a shadow) across a day that might otherwise be sunny and clear. This is what shadow syndromes do in the realms of work and love: they cast a shadow.



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As the diagnostic categories splinter, inevitably the line between normal and abnormal begins to blur. Sooner or later the classically trained psychiatrist begins to notice that not only are there a number of very troubled people who do not fully fit the DSM categories: there are also many, many not-so-troubled people who do fit these categories, to some degree. When you look at everyday people wending their way through everyday life you notice that most people seem to have minor bits of this syndrome, small pieces of that. In a way, the very mildness of his illness adds to his problems because it is likely to go undiagnosed. The "subsyndromal" person, the person who is only a "little bit" manic-depressive, or a "little bit" clinically depressed, is likely to struggle on alone, wondering what is the matter with him---or, all too often, what is the matter with everyone else.

The new neurology can affect our sense of who we are. Where once we thought of ourselves as the victims of dysfunctional families, some of us are beginning to see ourselves, instead, as the "victims" of dysfunctional brain chemistry---and our parents as, perhaps, victims of the same chemistry themselves. We are beginning to understand ourselves in new ways, not just as a collection of personality traits, but as a collection of biological traits as well. In this new under- standing we can begin the journey out from the shadows and into the clear light of day.

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