THE FALSE DICHOTOMY BETWEEN PSYCHOLOGY AND BIOLOGY

By

Albert O. Galves, Ph.D.

There's a false dichotomy alive in the land and it's going to hurt a lot of people. I'm referring to the split between psychology and biology that we read about every day in the paper. "New gene for manic depression discovered." Anger may be hereditary." "Alcoholism linked to a gene." "Schizophrenia may be caused by a chemical deficiency." It raises it's head when you're depressed friend tells you she is suffering from a chemical imbalance and another explains that bipolar disorder runs in her family as if whether or not they get it is a matter of fate or some other random force.

In professional parlance, the dichotomy is reflected in phases such as "biologically based mental disorders", "brain disorder" and "organic brain syndrome" - as if a brain syndrome could be anything but organic.

The appeal of the dichotomy is reflected in the following statement by Edward Shorter, arguably the world's foremost authority on psychosomatic disease: Speaking of the discovery that the drug chlorpromazine alleviated some of the symptoms of schizophrenia, Shorter says:

> "A new chapter in the history of psychiatry had been opened: If a drug affected mental illness so dramatically, the seat of the illness must be in the brain itself rather than merely in the distressed mind."

But where is the “distressed mind” if not in the brain? And what evidence is there that the “distressed mind” didn’t cause the biochemical changes in the brain that are being impacted by the drug?

All of this would give one the impression that scientists are finding that the stuff of the psyche - thoughts, perceptions, emotions, will - are results of random biochemical forces that are somehow pre-ordained by the genetic material we inherit. One would get the impression that mental disorders are unfortunate accidents that somehow happen to befall certain unfortunate people who have fallen prey to biochemical accidents - perhaps accidents that have been caused by pesticides, lead in the air, high voltage electricity lines, toxins in foods or genetic predisposition. And one would get the further impression that there is a lot of scientific evidence supporting these findings.

But there is no such evidence. Certainly, there is lots of evidence that thoughts, feelings and perceptions are associated with biochemical changes, neurological dynamics and molecular events. But one of the first things aspiring scientists learn is that association and correlation are not evidence of causation. For example, there is plenty of evidence that the brains of depressed people are chemically different from the brains of non-depressed people. But that doesn’t mean that the depressive symptoms are caused by the chemical changes. It’s just as likely that both the depressive symptoms and the biochemical imbalance are caused by a third factor -- extreme anxiety and anger resulting from the loss of a spouse, job, or physical health, for example. Thinking that the depression is caused by the chemical imbalance is like thinking that a home run is caused

by a bat. That is one of the fundamental errors of scientific reasoning - confusing a mediating variable with a causative one.

In fact, psychology and biology are so inextricably intertwined that teasing out the causal relationships between them will be a long time coming.

Item:

Jeffrey Schwartz of UCLA found that a group of people suffering from obsessive-compulsive disorder had abnormalities in their brains. Half of the group received drug (read biological) therapy; the other half received cognitive behavioral talk (read psychological) therapy. All of the patients improved and, when Schwartz checked their brains, he found that their brains had changed in the same ways. Presumably, the psychological therapy had the same impact on the physiology of the brain as did the biological therapy.

Item:

Jack Rozensweig found that the brains of monkeys raised in rich environments (psychological) had a greater number of neurons and more complex interneuronal connections (biological) than the brains of monkeys raised in more impoverished environments.

Item:

Franz Alexander found the people who had been deprived of support, affirmation and ample time while growing up (psychological) were much

more likely to suffer from overactive thyroids (biological) than people who were brought up in more nourishing environments.

Item:

James Pennebaker found that students who were assigned the task of writing about traumas they had suffered and about their fears, relationships and desires (psychological) had stronger immune systems and were healthier (biological) than students who were assigned to write about impersonal topics such as the national debt, environmental policy and international affairs.

Item:

Numerous studies have demonstrated a relationship between vulnerability to depression (biological) and the following psychological variables: having suffered trauma at an early age; having a high need for relationship and losing an important one; being perfectionistic; attributing failure to traits rather than states; denying, avoiding and stuffing feelings, and: holding a stable rather than flexible attributional style.

This and other research suggests that psychological and biological variables are so bound together and so complicated that the present state-of-the-art is unable to produce evidence that clearly establishes causality. Under such a circumstance, we might invoke

the scientific principle of parsimony - the notion that, in making scientific inferences, we should be guided by what we already know and we should search for the most simple and tidy explanations. Were we to do that in this case, we would turn to the psychobiological phenomenon about which we know the most: the stress response.

The stress response is among the most widely studied of psychobiological phenomena. In the stress response it is clear that the profound biochemical and physiological events (the secretion of ACTH, norepinephrine and noradernaline that quickens the reflexes, increases blood flow and enhances physical strength; the constriction of blood vessels in the extremities that reduces bleeding; the increase in the pain threshold; the directing of blood to the heart, brain and muscles) all occur subsequent to the perception and cognitive interpretation of threat by the organism. Thus, in the case of the psychobiological phenomenon with which we are most familiar, the biological changes are clearly caused by the psychological events.

Why is it then that we are so enamored of this idea that psychological variables are caused by biological events? And why is it that so many scientists are feverishly engaged in efforts to demonstrate that mental disorders are results of genetic dynamics and biochemical abnormalities? Why is parsimony being avoided? Why is this false dichotomy so alive and well?

Here are some speculations on possible explanations. One possibility is that human beings are drawn to causal explanations in which primary causes can be touched, seen, measured and clearly perceived by the senses. Thus, we know what chemicals are; we have seen, touched, and smelled them. We can clearly imagine how a deficiency of chemicals in the gap between the brain cells would slow us down and make us feel bad.

But we still know very little about how ideas, feelings, intentions and memory - these phenomena which seem to be ethereal - are mediated in the brain. We can be fairly certain that there are physiological correlates of these psychological events; but we don't yet understand how they work. So it is difficult to imagine how such ephemera could be the cause of biochemical and neurological changes. Most of us are, after all, fairly concrete and sensory in our approach to the world. On the Myers-Briggs Type Indicator, one of the dimensions that is measured is how people take in information. About 65 percent of us depend mainly on our senses; only 35 percent depend mainly on our minds.

Another possibility is that people are drawn to the idea that mental disorders are purely biological phenomena because it makes them more easily curable. It is comforting to think that such disorders can be treated with medicine and surgery rather than through a difficult and painful process of changing the way in which one thinks, manages feelings or relates to oneself and others. As Edward Shorter puts it:

> "Patients have always tended to reject psychological interpretations of physical symptoms. They find this kind of attribution unsettling because it seems to make inaccessible to them the remedies of medicine, conferring upon their symptoms a kind of hopelessness"

A third possibility is that people are drawn to the idea of mental illness as a biological phenomenon because it takes some of the blame and stigma out of the disease. If these mental disorders are results of genetic inheritance or random biochemical events, then people obviously don't have any control over them and can't be blamed for being mentally ill. They aren't responsible for their illness.

But this assumes that anyone is responsible for how they behave or who they are or what they think or how they manage their feelings. How could that possibly be? People are the way they are for two reasons, neither of which they have any control over: their genetic inheritance and how they were raised by their parents. How can anyone be held responsible for how they behave if their behavior is a result of forces over which they had no control? Even if I am able to escape from the influence of those two factors, my behavior has been a response to them and has been, in some sense, controlled by them.

If this is true, why do we persist in believing that people are responsible for how they behave? There seem to be two good reasons. First, if individuals are going to improve their behavior and mental health, they have to be the primary movers behind the changes. Second, we can't run a society in which individuals are not held responsible for their actions.

So this is the fundamental paradox of human existence. Nobody is to blame for their behavior. But everyone is responsible for their behavior. This is a paradox with which we are struggling as a species and as a society. Learning how to manage it is a sine qua non of human progress. But that is a topic for another time and place. Suffice it to say that, since people believe they have more control over the psychological variables than the biological ones, it makes sense that they would easily become enamored with the idea that mental illness is caused by random biological forces.

Finally, it is possible that this affinity for the notion of mental illness as a biological phenomenon is a result of our desire for simple, easy answers -- our preference for "either or" over "both and". If the relationship between psychology and biology,

between thoughts and feelings and the biochemistry and neurology of the brain is a reciprocal and iterative one in which both affect each other in a cascade of intertwined complexity, it is very unlikely that we will be coming up with any easy answers or ready-made formulae that will facilitate our understanding of mental illness or our ability to treat it in the foreseeable future. Never underestimate the ability of human beings to distort the truth in order to find comfort and certainty.

This article began with a statement that this false dichotomy would hurt a lot of people. Why is that? It is because the false dichotomy encourages physicians and other medical providers to treat the biology and ignore the psychology, thereby treating half of the problem at best and addressing the symptoms rather than the cause of the illness. That will be costly and will prevent people from learning how to manage themselves. Already, for instance, many patients who are diagnosed with clinical depression are prescribed antidepressant drugs but not referred to psychotherapy. This, even though a mass of research clearly demonstrates that psychotherapy is just as effective and is associated with less relapse. One of the reasons for this deficient treatment is that the U.S. Department of Health and Human Services distributed to physicians a "best practices" recommendation that patients diagnosed with clinical depression be given medicine and, if that didn't work, that they be referred for psychotherapy. Understandably outraged, the American Psychological Association complained that the recommendation was contrary to the research that was used to develop it.

Giving depressed patients a drug instead of psychotherapy is like giving a hungry man a fish instead of teaching him how to fish. They may begin to feel somewhat better (largely because of the placebo effect) but they won't learn anything about why they are

depressed and will fail to learn the important lessons that depression can teach: what is causing the anxiety that is driving this depression; what are the strong feelings that are being repressed; what is it about my life and how I am living it that is concerning me; what is it about the way I think that contributes to this depression.

Psychotherapy helps patients learn important things about themselves: what has brought on the depression; what can be learned from it; how can the patient's thinking, beliefs, assumptions, self-concepts and feelings be changed to enable him or her to more effectively manage the depression. And what can the patient do in the future when the symptoms reappear.

Psychotropic medicines may help patients feel somewhat better (research demonstrates that this is largely due to the placebo affect) and may have a place as a last resort. But there are big problems associated with psychotropic medicines. First, there are the side effects which include dizziness, irritability, nausea and sexual dysfunction. Second, people who take psychotropic medicine are at higher risk of violence and suicide. Third, some patients experience significant withdrawal effects. Fourth, patients who use medicine relapse at a higher rate. Finally, there is reason to believe that the medication gets in the way of effective psychotherapy. Research on psychotherapy has found that patients who improve the most are those who experience their emotions during the therapy sessions. Psychotropic medicine impedes the processing of emotions. In fact, one of the dangers of psychotropic medicine is that it impedes the ability of the patient to care; it dampens the conscience, a result that would impede effective psychotherapy.

Using psychotropic medicine as the first and major treatment for depression and other mental disorders is not only bad science; it is a form of malpractice which misleads patients about the nature of the disorder, exposes them to greater risk of relapse, makes them overdependent on a drug and robs them of the ability to manage themselves in the future. It will also result in billions of dollars spent unnecessarily on medicine that has been shown to be harmful to patients.