

Running head: STRENGTH OF BELIEF

The biological etiology of mental health disorders: Social influences and change potential
of practitioners' beliefs.

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ABSTRACT

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This study was designed to examine mental health professionals' strength of belief in biological causation of several syndromes including ADHD, unipolar depression, anxiety disorders, and schizophrenia and whether a three-hour educational program will alter their thinking. Findings suggest that pre-training, mental health professionals' reported strength of belief regarding the etiology of many mental health disorders tends toward the biologically based. Also, this study demonstrated that attendance at a three hour training program is able to reduce the expressed acceptance of biological causation of such disorders. The social influences of pharmaceutical direct to consumer advertising and medical guild dominance, as well as empiricism, contributed significantly to prediction of strength of belief in biological causation. Of the three variables, empirical data had the greatest influence. These findings suggest that as mental health professionals' are exposed to social influences that may be contributing to belief systems supporting biological causation, it is critical examination of empirical data said to support biological causation that contributes the most robust change in expressed belief.

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Chapter 1

Introduction

Worldview

When considering the causes of behavior, especially abnormal behavior, including behaviors that define diagnostic syndromes, the discussion usually takes one of three directions – biology, environment (learning), or some combination of the two. Individuals in the mental health and behavioral health fields frequently become devoted to one of these three worldviews. Data show an ebb and flow of the strength of each worldview within the professional community over the years (Durand & Barlow, 2003; Davidson & Neal, 1994). The biological causation model has gained substantial influence over the past 30 years, but the validity of empirical support for it remains a topic of ongoing debate (Wyatt, 2003).

The extent to which professionals in the mental health field come to subscribe to one of these worldviews is of interest, as are the variables that influence those processes. That is because once a worldview of abnormal behavior is in place, one tends to interpret instances of behavior (hallucination, delusions, irrational fears, feelings of depression, and “normal” behavior etc) in light of that worldview. Those interpretations then influence the practitioner’s efforts at prevention and treatment, as well as the consumer’s acceptance of specific forms of prevention or treatment (Langer & Ableson, 1974). Yet, at times the data supporting a particular view of causation and treatment of a given behavioral disorder are not as powerful or convincing as one might suppose (Seligman, 1998).

The strength and influence of a worldview is evident in the story of Wilhelm Reich. Reich was a physician-scientist, born in 1897 in the Austrian province of Galicia. Reich

graduated from the Medical School of the University of Vienna in 1922. He was a student of Sigmund Freud, and a psychoanalyst before his clinical studies led him into the laboratory and into investigations of the energy processes in nature. Reich ultimately came to the United States where he went on to claim that he had discovered a universal cosmic and biological energy present everywhere and detectable through specified experiments. He called this energy orgone. He built a box-like apparatus with organic material on the outside and metal on the inside that he called an “orgone accumulator”, which he believed collected and accumulated orgone energy that existed in the atmosphere. He claimed that exposure to orgone, particularly through sitting in the accumulator, promoted health and vitality, and was an effective treatment for cancer. He also claimed to detect another energy, oranur or deadly orgone radiation (DOR), which produced negative health effects and reacted to orgone. He also built a device he called a “cloud buster”, with which he claimed he could manipulate the weather by manipulating the orgone in the atmosphere. Thousands of people came to accept his worldview as evidenced by their purchases of the “accumulator” and other of his devices, yet they failed to be helped. Reich was taken to court for shipment of fraudulent devices by the Food and Drug Administration (FDA). The court ordered his books and research burned and his equipment destroyed. Reich was given a prison sentence, and he died in federal prison in 1957 (Swalley, 1997).

A more recent example in which a theoretical model of causation influenced clinical practice with negative effects was frontal lobotomies (Stuss & Alexandar, 2005). The frontal lobe is thought to be the control center in the brain, specifically affecting the planning, initiation and regulation of goal-directed behavior (Mahurin, Velligan, & Miller, 1998). In the mid 1930's scientists began experimenting with frontal lobe cutting in chimpanzees. In these experiments aggressive animals became much calmer. The docile chimps looked to be much better off than

prior to the experiment. These experiments transitioned into accepted medical treatment interventions for the mentally unstable (Stuss, et al., 2005). However, psychiatric patients who underwent frontal lobotomies experienced significant neurological deficits as a result. Patients were noted to exhibit little spontaneous facial expression, they had difficulty interpreting environmental cues, and experienced problems with speaking, also known as Broca's Aphasia (Kolb & Miller, 1981; Brown, 1972). These patients had trouble responding to questions, and their associative learning skills were impaired (Kucharski, 1984). This treatment was an accepted alternative in many hospitals. Patients on whom the operation was performed had a variety of diagnoses, including schizophrenia, obsessive-compulsive disorder, and affective illnesses. People did not begin to realize the ramifications of the operation until it became clear, through observation, that lobotomized individuals were far from normal or happy, and that in actuality, the appearance of a less crazed nature had simply been mistaken for (what was in some cases) a total loss of the individual's personality (Burgler, 2005).

Given the evident ease with which conceptualizations of causality arise in the professional communities, and given the impact of those conceptualizations upon treatment, it is important to understand the extent of support for any claim of causation. It is equally important to understand the variables that contribute to the rise of any given worldview of causation because those variables may well be unrelated to research evidence that would confirm or disconfirm the model. This study will explore the social and environmental influences upon the professional's worldview development regarding the etiology of abnormal behaviors and how these variables influence treatment practices.

Chapter 2

“Chemical Imbalance” – The Biological Model

Models

We attempt to make sense of the puzzle of psychopathology by creating models of its development. This process often begins serendipitously and contributes to the evolution of understanding the etiology of mental disorders. These models then lead us to efforts at treatment (Wilson, Nathan, O’Leary, & Clark, 1997). One such example is the treatment of schizophrenia. Scientists observed patients with Parkinson’s disease who exhibited delusional and hallucinatory behaviors when exposed to excessive levels of dopamine (Carver, 2000; Woodruff, 2005). Antipsychotic medications such as Risperdal, Zyprexa, Haldol, and Thorazine, thought to block dopamine receptor sites, are now primary forms of treatment for positive and negative symptoms of schizophrenia (Bank, 2005; Hertzman, 1992). Another example, behavioral in nature, occurred when Ivan Pavlov discovered fundamental conditioning processes by way of trying to unveil the secrets of the digestive system (Fredholm, 2001). Today, these conditioning processes provide a basis for perspectives on the etiology and maintenance of anxiety disorders and are utilized as effective behavioral treatment interventions for a variety of anxiety disorders (Mineka & Zimbarg, 2006; Mackillop, 2005; Machulda, 1998).

It follows, that once the etiology of a disorder is thought to be understood, the most effective treatment for such disorder is suggested by that theorized cause. What does not follow is a global generalization and rigid application of this logic. There is good evidence to show that biological interventions can be helpful in dealing with mental health problems associated with environmental influences just as there are cognitive behavioral interventions that are demonstrably helpful in dealing with symptoms of disorders that are biological in origin. For

example, it is evident that anxiolytics such as Zanax, Ativan, or Valium, are proven effective biological treatments of symptoms associated with PTSD (e.g. anxiety, increased heart rate, hyper vigilance, etc.), an environmentally rooted disorder, while cognitive behavioral therapy techniques are helpful in managing delusional and reclusive behaviors in the schizophrenic patient (Butler, Chapman, Forman, & Beck, 2006; Hammer, Robert, Frueh, 2004; Maryasti & Pascal, 2004; Andreas, Verena, Dirk, Michael, Elmar, Birgit, Julia, Michael, & Joachim, 2005). Nevertheless, there is clear and convincing evidence that chemical treatment of mental health disorders has escalated exponentially in recent years (Pincas et al, 1998; Angell, 2000; Glenmullin, 2000; Korcok, 2002; Good, 2003; Edwards, 2003; Vaczek, 2004; Bloice, 2005). This gives rise to a credible postulate that an increasingly popular belief system within the mental health community is that many mental health disorders have a large biological/chemical basis for existence.

Biological Causation

The contemporary biological model of abnormal behavior assumes that the principal causes of, and the most likely effective treatments for, abnormal behaviors are biological (Wilson et. al, 1997; Carver, 2000; NAMI, 2005). Biological theorists view abnormal behavior as caused by a physical illness or injury. Most often, they point to a malfunctioning brain as the cause of abnormal behavior, focusing particularly on problems in brain structure, brain chemistry, or genetic makeup (Mesulam, Human, Hobson, & Silvestri, 1999; Schwartz, 1999).

The diagnostic task of defining an organic contribution to the etiology of abnormal behavior involves two basic steps: 1) identifying a specific organic factor based on evidence from history, physical examination, and/or laboratory tests; and 2) judging the factor to be etiologically related to the behavioral disturbance (Reid, Balis; Sutton, 1997).

Structural brain imaging techniques, such as Computed Axial Tomography (CT Scan – a form of advanced X-ray technology) and Magnetic Resonance Imaging (MRI - a spectroscopic technique used by scientists to obtain microscopic chemical and physical information about molecules), are at times touted as preferred methods in psychiatric diagnosis (Sadock & Sadock, 2000). However, when unusual brain structures or activity are observed in a person who exhibits overt abnormal behavior, it is unclear whether the brain abnormalities cause, are caused by, or are unrelated to the overt behavior. It is also possible that some third factor, or set of factors, caused both the overt abnormal behavior and the unusual brain structure noted on testing. Yet, such correlational data, when reported by researchers, may be misinterpreted as evidence of causation.

It is important to point out that biological abnormalities are known to cause *some* abnormal behaviors. For example, structure changes to the cerebrum may result in dementia. Dementias are typically classified according to the general brain areas involved and include cortical changes [Alzheimer's disease, Pick's disease], subcortical [Huntington's disease, Parkinson's disease], and axial [Wernicke-Korsakoff syndrome] (Heilman & Valenstein, 1979). There is universal agreement that other disorders such as Down's syndrome and Autism are the result of biological abnormalities. The same is true for other disorders such as those attributable to brain tumors, intracranial infection, and toxins (e.g., lead exposure). However, many other disorders (e.g., depression, anxiety, ADHD, schizophrenia) are typically of unknown origin. In such cases, it is tempting to make unwarranted attribution to unobserved structures or functions of the central nervous system. Skinner (1974) labeled this phenomenon the "conceptual nervous system" as if to point out its illegitimacy. Skinner termed the CNS a "dumping ground" where the cause of any unexplained abnormal behavior is hypothesized to lie.

