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Genetics and Mental Health

Jay Joseph

Government leaders frequently argue that the social, political, and material conditions found in the United States provide the potential for the happiness and well-being of its citizens. Nevertheless, the mental health status of Americans is not good. As a case in point, Ronald Kessler and his colleagues published a 2005 study in a leading psychiatry journal, where they found that "about half of Americans will meet the criteria for a *DSM-IV* [mental] disorder sometime in their life, with first onset usually in childhood or early adolescence" (Kessler et al. 2005, 593; *DSM-IV* is the fourth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*). Moreover, owing to several potential biases in their research design, Kessler and colleagues emphasized that their findings "are likely to be conservative" (2005, 599). Indeed, a 12-month prevalence study suggests that the United States is the world leader in diagnosed mental disorders and that, for example, Americans are diagnosed with a psychiatric disorder twice as often as residents of Mexico (26% vs. 12%), three times as often as residents of Italy (26% vs. 8%), and five times as often as residents of Nigeria (26% vs. 5%; WHO World Mental Health Survey Consortium 2004).

Some observers have criticized the *DSM*'s tendency to label a wide range of subjective states, socially disapproved behavior, and even normal behavior as "mental disorders," and have questioned the validity and reliability of psychiatric disorders (see Kirk & Kutchins 1992). Furthermore, the "mental illness" concept itself has been questioned (Szasz 1987).

These issues aside, additional statistics illustrate the current level of psychological distress in the United States. According to Robert Whitaker, author of *Anatomy of an Epidemic*, by 2007 approximately 4 million Americans under the age of 65 received Social Security benefits for a mental disability. Americans spend \$25 billion annually on antidepressant and antipsychotic drugs, and spend over \$40 billion annually on all psychotropic drugs. All told, \$170 billion is spent annually on mental health services in the United States, and one in every eight Americans takes a psychiatric drug on a regular basis (see Whitaker 2010).

Given these findings and statistics, it is clear that a sizable portion of Americans will experience some level of chronic or acute psychological dysfunction or distress during their lifetimes. Having established this, the question remains open whether the causes are due mainly to hereditary factors or whether they reflect the impact of a wide range of psychologically harmful environmental influences that people experience in American society.

The current consensus position in the field of psychiatry (and related fields) is that genetic factors play an important role in the overall mental health of Americans. The leaders of the field argue that the evidence shows conclusively that conditions such as depression, schizophrenia, bipolar disorder, autism, and attention-deficit hyperactivity disorder (ADHD) have an important genetic basis. These are often called "multifactorial complex disorders," which means that they are viewed as being caused by the effects of multiple genes in combination with multiple environmental factors. This idea is based on the earlier *predisposition-stress* theory of psychiatric disorders. Although they recognize a role for environmental factors, psychiatric genetic researchers and popularizers of their work tend to emphasize the centrality of perceived genetic factors, and focus their research in this area.

An alternative to currently ascendant biological/genetic explanations of psychiatric disorders is the perspective of psychological theories that emphasize the major role of childhood family environments in establishing a person's potential for healthy psychological functioning. Indeed, a team of psychiatric researchers, in a study spanning 21 countries, found that "childhood adversities have strong associations with all classes of [psychiatric] disorders at all life-course stages in all groups of" the countries under study (Kessler et al. 2010, 378).

There is also the larger sociological context, which impacts family environments both directly and indirectly. Researchers in this area emphasize the psychologically harmful effects of social conditions such as racism, chronic stress, living

in poverty, sexism, social class status, discrimination against sexual minorities, diminished social networks (which may be a product of the culture and economic system), social inequality, divorce, unemployment, and the consumer-driven individualist culture promoted in advanced industrial societies. As the psychologist Philip Cushman puts it, the quest for corporate profit in the post-World War II era transformed the predominant American self into an “empty self,” one that strives for “self-liberation through the compulsive purchase and consumption of goods, experiences, and celebrities” (Cushman 1995, 211). Clearly, an “empty” self is not a healthy self.

The Genetic Perspective

As one sociologist has stated, “Diagnostic psychiatry minimizes the importance of social causes of mental disorder. This orientation naturally results from its emphasis on internal, genetic causes of disorder” (Horwitz 2002, 158). Psychiatry does indeed emphasize genetics, but we will see that there are problems with the evidence supporting this position.

Genetic theories in psychiatry are based on the results of family, twin, and adoption studies, in addition to some claims that genes have been discovered at the molecular level. As a group of researchers looking for schizophrenia and bipolar disorder genes have written, “Twin and adoption studies during the 20th century firmly established a genetic basis for the major mental illnesses and numerous other common diseases” (Gershon, Alliey-Rodriguez, & Liu 2011, 253). However, there are problem areas in twin and adoption research that cast doubt on researchers’ ability to provide evidence in favor of genetic influences on mental disorders. In addition, it can be argued that we are witnessing an ongoing failure to identify the genes that researchers believe underlie these disorders (Gershon, Alliey-Rodriguez, & Liu 2011; Joseph 2010, 2011; Wade 2010).

The main problems with family, twin, adoption, and molecular genetic research will be briefly summarized here (see also Joseph 2004, 2006, 2010). First, family studies are clearly unable to disentangle the potential role of genetic and environmental factors, because family members share a common environment as well as common genes. Most genetic researchers now agree that a trait or disorder identified as “running in the family” can be explained on the grounds of *either* genetic *or* environmental factors, and that family studies therefore prove nothing about genetics alone (Joseph 2010). This in itself is a significant point.

Moving on to twin research, which forms the basis of current arguments in support of genetics, the main technique (called the “twin method”) compares the trait resemblance of reared-together monozygotic (MZ, i.e., identical) twin pairs to reared-together same-sex dizygotic (DZ, i.e., fraternal) twin pairs. (MZs show 100% genetic similarity, whereas DZs show on average 50% genetic similarity.) Because members of MZ pairs usually resemble each other more with respect to

psychiatric disorders than do members of DZ pairs, twin researchers conclude that such disorders must have a genetic component.

In order to reach this conclusion, however, researchers must rely on several theoretical assumptions about twins. The most controversial is the assumption that MZ and same-sex DZ twin pairs experience roughly equal environments. This is known as the “equal environment assumption” or “EEA.” The problem here is that despite twin researchers’ claims to the contrary, the equal environment assumption of the twin method appears to be faulty. This is because most research finds that MZ twins experience much more similar environments than do DZ twins (Joseph 2004, 2010). Thus the greater resemblance of MZ versus DZ twin pairs with respect to psychiatric disorders can be explained by MZ pairs’ more similar environment and closer psychological bond. This means that the twin method is confounded by environmental factors, and that researchers in this area seem no more able to disentangle the potential roles of genes and environment than those employing family studies. Even in studies of *reared-apart* twins, which usually focus on psychological traits such as IQ and personality, there are additional environmental confounds and methodological problems that arguably make researchers’ results explainable on nongenetic grounds. (Moreover, few of these pairs qualify as being truly “reared apart”; see Joseph 2004, 2010.)

Some researchers have turned to adoption studies, which they view as being less vulnerable to environmental confounds than are twin and family studies. Adoption studies investigate people who have received the genes of their birth parents but are reared in the family environment of people with whom they share no genetic relationship. These studies are frequently cited in support of genetic influences on disorders such as schizophrenia, ADHD, and bipolar disorder. In particular, studies conducted in Denmark, which maintains an extensive genetics database, are widely cited as having established schizophrenia as a genetic disorder.

Like family and twin studies, however, adoption studies appear to contain their own unique set of environmental confounds and biases. Among these biases are the late separation of adoptees who have been studied, the nonrepresentativeness of adoptive families (versus the general population), and issues involving the way adoption agencies “selective place” adoptees according to the socioeconomic and perceived genetic status of their biological parent(s). All of these factors, along with others, would seem to seriously hinder the utility of psychiatric adoption studies (Joseph 2004, 2006, 2010).

The pervasive existence of environmental confounds means that, although the siblings and relatives in family, twin, and adoption studies are frequently diagnosed with psychiatric disorders in patterns predicted by genetic theories, these same findings can be said to follow, as well, the patterns of *nongenetic causation*. It therefore is possible to conclude that these studies have been largely unable to disentangle the potential roles of genetic and environmental influences on mental

disorders. Critics thus believe that the foundations of genetic theories in psychiatry and psychology rest, in fact, on rather shaky ground.

The Search for Genes

Given that psychiatric genetic researchers believe that the genetic basis of psychiatric disorders has already been established, the search for the genes (genetic variants) presumed to cause these disorders has been under way since the 1970s. Although researchers and their financial backers recognize that environmental factors play a role in the development of psychiatric disorders, their emphasis on genetics and on costly gene identification efforts are based on the principle of *genetic determinism*. As the evolutionary biologist Richard Lewontin describes it, genetic determinism is the “assumption that all-important variations in basic physiological and developmental processes are the direct result of genetic variation” (Lewontin 2009).

Despite well-funded international efforts carried out over the past few decades, however, and despite the completion of the Human Genome Project, the genes believed to underlie the major psychiatric disorders have not been found (Gershon, Alliey-Rodriguez, & Liu 2011; Wade 2010). Although most researchers in the field continue to believe that such genes exist and simply await discovery, one pair of (nonpsychiatric) researchers who have reviewed the data have concluded that “genetic predispositions as significant factors in the prevalence of [most] common diseases are refuted,” and that “the dearth of disease-causing genes is without question a scientific discovery of tremendous significance” (Latham & Wilson 2010).

Such investigations continue, however. Instead of recognizing the possibility that decades of failed gene identification efforts show that the genes may not exist—a recognition that would necessitate a thorough reexamination of family, twin, and adoption research (as well as genetic determinism itself)—most investigators choose instead to assume an attitude of *optimism* and downplay the prospect of *failure*. As Latham and Wilson (2010) observe, “The history of scientific refutation . . . is that adherents of established theories construct ever more elaborate or unlikely explanations to fend off their critics.” This can be seen in recent attempts by researchers to explain failed gene identification efforts on the basis of “missing heritability” (e.g., Gershon et al. 2011; Manolio et al. 2009) rather than concluding that such genes likely do not exist.

But even if researchers were to discover genes that predispose some people to developing mental disorders, many observers believe it would do little to help us understand, treat, or prevent these disorders. Genetic determinist ideas, that is, tend to divert society’s attention from psychologically damaging environments, shifting causes onto the brains and bodies of those who suffer the effects of living in those environments. Critics of this type of genetic research note that it is heavily funded and promoted by political and corporate entities that have an interest in

promoting their own policies and products, not addressing environmental conditions. Even for medical disorders such as type 2 diabetes, where environmental conditions such as poverty and malnutrition are well-known causes, supporters of genetic determinism continue to press for research dollars to be directed toward genetic research as opposed to improvements in social conditions and human health (Chaufan 2007).

It could be argued that the time has come to institute a moratorium on psychiatric molecular genetic research and to redirect scientific attention toward a thorough reassessment of the family, twin, and adoption studies that inspired the search for genes in the first place. Upon the completion of this reassessment, it would conceivably become apparent that the genes currently believed to be “missing” may well not exist. Other research avenues could be developed instead.

If Kessler and colleagues’ (2005) finding is correct and 50 percent of Americans indeed will develop a (presumably genetically based) mental disorder, then, according to current genetic theories, a sizable percentage of the *other* 50 percent—i.e., those who *do not* develop a mental disorder but are related to those who do so—must nevertheless carry pathological genes (Joseph 2006). That is, based on the logic of the *DSM*, and on currently ascendant theories of genetic causation, most Americans carry genes predisposing them to developing mental disorders. Critics of this view, on the other hand, believe that the environmental/psychological/sociological perspective offers a more realistic and beneficial approach to reducing mental suffering and dysfunction. According to the psychologist David Jacobs, for example, an alternative approach to currently popular genetic theories would “examine changes in the social-cultural environment, and not our relatively unchanging and permanent genetic heritage, for clues regarding widespread psychopathology” (Jacobs 1994, 9). In sum, while mainstream supporters of genetic determinism worry about the “societal burden of mental disorders” (Kessler et al. 2005, 601), from an environmental/sociological perspective it might be better to characterize the problem as that of the *mental burden of societal disorders*.

See also Autism Spectrum Disorders; Creativity and Mental Health; *Diagnostic and Statistical Manual of Mental Disorders (DSM)*; Drug Companies; Family and Mental Illness; Medical Model of Mental Illness; Neurodiversity; Psychiatry; Schizophrenia

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Group Therapy

Jerrold Lee Shapiro

Group psychotherapy, group therapy, and group counseling are forms of mental health treatment in which one or two professionals provide services simultaneously to a small group (characteristically 5-14) of clients. Generally, the prime notion is that group members gain therapeutic help both from the expert leaders and from each other. The group process (development of a trajectory and interpersonal interactions) is considered to be the central mechanism producing change both during the group and subsequently in the clients' back-home lives.

Types of Groups

There are many types of groups, and the identifying labels for them are used inconsistently. In order of increasing focus on group process and intensity of interpersonal interaction, there are task groups, psychoeducational groups, counseling groups, growth (training, encounter) groups, and psychotherapy groups.

Task groups are generally focused on completing a project, organizational need, or activity that could promote healthier functioning. There is far less focus on the process—i.e., what is occurring between the members—than on the outcome of the task or problem solving per se.

Psychoeducational groups are often used with people whose needs fall within a particular theme or category. These groups pair substantial information giving with individuals' reactions to these data. Often, people with similar skill-building needs and a lack of important information are best candidates for such groups. These groups tend to be structured heavily or "manualized," with a topic or agenda for each meeting. Assertiveness training, where one is encouraged to state one's point of view, is one successful form of psychoeducation.

In *counseling groups*, members deal with usual, often difficult problems in living. They tend to focus primarily on conscious processes and resolution of short-term problems. Counseling groups do have an interpersonal focus and encourage members to explore in the present the personal impact of each other's interactions. The group is seen as a social microcosm in which problems may be safely discussed and resolved. Counseling groups often have specific behavioral goals in mind. University counseling centers often run these groups regularly.

Therapy groups focus more in depth on intrapsychic issues and more debilitating symptoms (i.e., depression, anxiety, etc.). The leaders of therapy groups foster