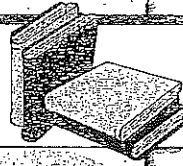


READING



16

The Hunt for Mood Genes

Directions: Read the following selection, then answer the questions that follow.

Manic depression, commonly called bipolar disorder, is one of many psychological disorders that are thought to have a genetic basis. Researchers have documented family histories of these disorders and hypothesize that heredity plays a part in the development of the disorder. Until recently, however, researchers have not had the tools to test and confirm their hypotheses. New technologies are beginning to allow psychobiologists to zero in on the specific genes that contribute to the development of bipolar disorder. Although some controversies surround this sort of research, many psychologists and physicians hope that such research will lead to effective treatments for bipolar disorder.

Researchers are hunting for "mood-disorder" genes that lead to manic-depression. If such mood genes are found, they should help scientists devise better drugs to control the disease, predicts neurobiologist Samuel H. Barondes, author of *Mood Genes*.

Manic-depression affects one out of every 100 people, and it runs in families. Therefore, the illness is likely to have a genetic basis. However, Barondes says that a combination of genes working together is probably at the root of manic-depression, rather than simply one gene, as with sickle cell anemia. Environment and life experiences also play a role.

The process of finding the specific genes responsible for manic-depression out of the 100,000 or so human genes is like tracking down an enemy spy with a secret radio transmitter by gradually homing in on the source of the radio waves.

The mood-gene hunter first finds a family or isolated population that is prone to manic-depression, then analyzes the DNA from this population to see if the people who have the disorder also have certain genetic markers (the few thousand genes or segments of DNA whose locations are known). If it happens that manic-depression is "linked" to any of these markers, the hunter knows a mood gene lies close to that marker on a particular chromosome, thus narrowing the search.

The results so far are tantalizing but inconclusive. According to one study, the "long arm" of chromosome 18 appears to be a hot spot for mood genes, but other studies have pointed to areas on chromosomes 4, 6, 13, and 15 as well.

Finding mood genes will allow testing to determine whether individuals from affected families are likely to

get the disease. Mood-gene tests would also verify the diagnoses of manic-depression in people who show symptoms.


Controversy for mood-gene testing seems likely: It may eventually be performed on fetuses, and some parents might choose abortion rather than bear children with the disease. People will object to mood-gene research for this reason, but Barondes argues that the benefits for disease sufferers will be too enormous to forgo.

New drugs made possible by mood-gene research may be effective enough to render the disease harmless, so the issue of eugenics could become moot. New drugs would result from a better understanding of the proteins, enzymes, or hormones that mood genes make and the jobs that these specialized molecules perform in the emotional circuitry of the brain.

"Knowing the identity and function of mood genes will provide the opportunity to develop whole new categories of drugs with completely different molecular targets. Such a change of direction is sorely needed," Barondes writes. Current antidepressant drugs, such as Prozac, were discovered by accident. Scientists aren't sure exactly why they work, and they don't work well in all cases.

"In the long run a major benefit of mood-gene discovery may be the prevention of all symptoms of manic-depression—even initial attacks," Barondes posits, concluding that such knowledge "may not just be used to foretell our destinies, but also to forestall them."

Source: Miner, J. (1999). The hunt for mood genes. *Futurist*, 33 (5), 11.

 **Understanding the Reading**

Directions: Answer the following questions in the space provided.

1. How common is manic depression (bipolar disorder)?

2. How could identifying the specific gene or genes involved be used to help people with a genetic tendency for the disorder?

3. What potential controversies does the author raise about the gene research?

4. Why does Samuel Barondes think that knowing the identity and function of mood genes could aid in the development of drugs to treat the disorders?

 **Thinking Critically**

Directions: Answer the following questions in the space provided.

5. Take one of the following positions and write a defense of the position:

Gene research to find the exact source of psychological disorders should be funded by tax dollars.

Gene research has too much potential for misuse. No tax dollars should be used to fund such research.

6. What do you think Samuel Barondes means when he says that the knowledge gained from the research “may not just be used to foretell our destinies, but also to forestall them”?
