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Neuroethics: Ethical Considerations When Using Neuroscience Techniques

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Safety and ethics are global concerns in the age of neuroscience.

Through genetics, brain imaging, and other neuroscience procedures, it is now possible to know not only about one's behaviors but also about one's internal processes. For example, predictions can be made from genetics about certain types of medical and psychological disorders that are more likely to develop in one's future. This raises ethical questions concerning who should have access to this information and how it may be used by a society.

In the first half of the twentieth century, certain Western societies attempted to make changes in future populations. This was referred to as *eugenics*. The basic idea was that it was possible to improve the human race by discouraging reproduction among those considered to be inferior and encouraging reproduction among those who were considered to be healthy or otherwise preferable. Individuals with mental disorders and mental retardation were among those sterilized. The eugenics movement impacted policies in the United States, Britain, and elsewhere, then reached its extreme in Nazi Germany during World War II.

Although today eugenics is thought of as a disreputable crusade of the past, ethical issues

in terms of one's own genetic information raise important questions. Should people who want to have children be told about the possible characteristics, including potential disorders such as autism, of their future child? Should an insurance company know whether you might have the potential to experience schizophrenia or depression in your lifetime? Should companies be able to patent human genes that could prevent disease? Should people be told early in their life which disorders they might develop 40 or 50 years in the future? These are just a few of the complex questions to be considered.

There are also a number of questions related to brain imaging techniques. For example, with millions of MRI scans being performed for research, scientists may discover what are referred to as *incidental findings*. Should an individual be told that he or she has a non-normal brain if a neurologist does not consider the findings related to the person's physical health?

At this point in time, brain imaging techniques cannot absolutely determine if one individual has a mental disorder or not. What neuroscientists *can* say is that a group of individuals with a particular disorder will show different patterns of brain activity than another group of individuals who do not have the disorder.

Neuroethics takes us beyond the questions of traditional research ethics and focuses on the ethical, legal, and social policy implications of neuroscience (Illes & Bird, 2006). Because of this, a number of scientific neuroscience groups and governmental agencies have sought to understand the ethical problems that neuroscience will bring our society.

Thought Question: Neuroethics focuses on the ethical, legal, and social policy implications of neuroscience and asks complex questions. Choose a position on one of the questions presented in this *LENS*, and present evidence to support your position.