Neuroethics
by Michael Gazzaniga, Ph.D.

Ethics is the field of moral philosophy. What behavior is good and bad, right and wrong, just and unjust? For millennia, philosophers have grappled with these questions and searched for principles on which to base definitions of ethical behavior. Neuroscience has now stepped into the field of ethics, presenting an interesting question: Are ethical behaviors and ethical reasoning itself based in the way our brains work?

Neuroethics is an emerging field with its scope still being defined. It considers how the ramifications of research and findings in neuroscience intersect with both the personal and social aspects of being human. It encompasses such concepts as personhood, personal responsibility, personality, individual autonomy, belief systems, law, justice, punishment, and personal and societal protection. As I see it, neuroethics is the examination of how we want to deal with the social issues of disease, normality, mortality, lifestyle, and the philosophy of living, informed by our understanding of underlying brain mechanisms. Its goal is a brain-based philosophy of life.

Currently, topics in neuroethics fall into two categories that often intertwine: those stemming from what we have learned about brain function, and those stemming from what we can do to shape or change brain function.

Every day, neuroscience is making advances in understanding the human mind. As we move toward a closer understanding of how the brain enables action (everything from a simple movement to a thought), we seem to be closing in on the idea that human beings are a closed system. If behavior is caused by brain processing, and the brain is a physical entity that follows biophysical laws, then to what extent can we claim to have free will? Are we responsible for our behavior and actions, or are they the result of a predictable set of physical laws?

Answers to these questions have implications not just for individuals, but for societies. Think about the criminal justice system, for example. Does understanding the brain state that may cause criminal behavior matter to society, and should it be a factor in determining punishment for criminals? If punishment or treatment has no effect on certain types of malignant behavior, what do we do with such individuals? If effective treatment is available, but the person refuses it, should they be forced to receive it?

Neuroscience has given us pharmacological treatments for many disorders, but the drugs often affect more than just the symptoms of the disorder. For instance, antidepressants can essentially change people’s personalities. More controversial is the use of drugs to improve cognition, attention, memory, and mood in normal, healthy individuals. Does an individual have the right to freely use neuro-enhancing drugs? Will the use of such drugs force others to take medication to remain competitive? Will employers be able to require their workers to use them?

The use of neuro-pharmaceuticals may have long-term and far-reaching effects. If people are selecting mates on the basis of pharmacologically produced traits and personality, how will that affect the future gene pool? The human genome has been honed by thousands of years of selection for traits that have allowed humans to survive and reproduce. Will it be adversely affected and produce less capable humans that require medication to survive?

As you can see, your generation has many questions to ask that have never been asked before by human society. You will be challenged to think through each of these issues in a way most adults have not. Neuroscientific discoveries are happening rapidly, and the time to think about their impacts is now.