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News Viepoint Controversies:

New research finds that the common arguments against the development of cognitive enhancers are misguided

Society for Neuroscience

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ABSTRACT ▲

As the development of cognitive enhancers gains momentum, questions have arisen about the ethics of issues such as the making or taking of a pill that could boost brain power. New research, however, finds that the common arguments against their development are misguided and should be replaced by an understanding that takes into account the subtle differences of the ethics of enhancement. "Our findings may help steer us toward more fruitful discussions regarding cognitive enhancement," says Thomas H. Murray, PhD, of The Hastings Center in Garrison, NY (2), "and may aid us in answering questions like: What if we could think better?"

ARTICLE TEXT ▲

As the development of cognitive enhancers gains momentum, questions have arisen about the ethics of issues such as the making or taking of a pill that could boost brain power. New research, however, finds that the common arguments against their development are misguided and should be replaced by an understanding that takes into account the subtle differences of the ethics of enhancement.

"Our findings may help steer us toward more fruitful discussions regarding cognitive enhancement," says Thomas H. Murray, PhD, of The Hastings Center in Garrison, NY (2), "and may aid us in answering questions

like: What if we could think better? What would it mean to have biomedical technologies that could enhance our cognitive functioning? What would be the pros and cons of having these technologies widely available to the public? Can we learn anything about cognitive enhancement from the experience of performance-enhancing drugs in sport?"

Murray and his colleagues' research includes neuroethics, a relatively new field born out of bioethics, that examines the benefits and dangers of modern research on the brain and the social, legal, and ethical implications of the clinical applications of that research. They have been exploring the ethical implications of enhancement in sport and in other realms of life, leading them to a number of insights about the nature and ethics of cognitive enhancement. Murray delivered the David Knopf Memorial Lecture on Neuroethics at this meeting.

"As responsible researchers, we must fully consider the ethics of cognitive enhancement by weighing possible harms as well as likely benefits," says Murray. "Who is affected by enhancements? And what values and ends do the enhancements serve?"

The appeal of cognitive enhancers is apparent to anyone who has wrestled with a difficult intellectual problem or tried to stave off mental fatigue. Drugs that affect mental alertness, such as caffeine, already exist. New drugs that may have more precisely targeted effects on memory or executive cognitive functions are appearing. "They are likely to be developed in the first place to treat cognitive disorders such as dementia, but their enhancement applications are likely to be noticed immediately, just as biosynthetic erythropoietin (EPO)—the endurance-boosting drug—was rapidly taken up by some competitive cyclists and other athletes," says Murray.

Recently, Murray and his colleagues at the Hastings Center have conducted an ethical and philosophical analysis of cognitive enhancement. A working group of experts—including athletes, scientists, physicians, and scholars in law, philosophy, and history—helped to identify key arguments regarding forms of enhancement, including cognitive enhancement.

Three particular findings from their study stand out. First, any effort to base the ethics of cognitive enhancement on the distinction between therapy and enhancement is doomed to fail, according to Murray. "In a sense, all therapy can be understood as enhancement, as it is building upon the intrinsic healing processes of the body and mind with the aim to restore the body to a natural, balanced state," says Murray. "Cognitive enhancers may be a way to improve the mind's ability to think and remember, especially in the case of dementias, just as antibiotics are a means to enhance the body's capacity to fight off infection."

In addition, a set of biomedical interventions already exist that aim at improving health, yet are just as clearly a form of enhancement: vaccines. Classical vaccines work by enhancing the immune system's capacity to mount a response against infection. The capacity to produce such antibodies is latent in the immune system to begin with, according to Murray. The vaccine enhances the body's resistance to infection and therefore pursues an approved aim of medicine—preserving health and preventing disease.

Furthermore, the same goal may be reached by a variety of means—and not all of those means are biomedical, according to Murray. Many people, for example, take a class of drugs known as selective serotonin reuptake inhibitors (SSRIs). A lack of serotonin in the brain is related to a variety of unpleasant psychological states such as depression, low self-confidence, and anxiety. A drug that relieves the suffering of people with clinical depression is a valuable therapy. But for at least some of these desired states, there may be other paths to the same end. Someone who lacks self-confidence might enhance their psyche by doing things that build self-confidence. Someone uneasy in mind might find that meditation, prayer, or some other spiritual discipline leads to the inner peace they seek. "As we think about biomedical interventions as enhancements, we must bear in mind that similar ends may be reached by quite dissimilar means," notes Murray.

A second finding of the working group is that the distinction between natural and unnatural enhancements is as equally unhelpful as basing the ethics of cognitive enhancement on the distinction between therapy and enhancement. Not all that is natural is good, and not all unnatural enhancements are bad.

"For example, plagues or hurricanes are natural, but not good," says Murray. "Eyeglasses and anabolic steroids are certainly unnatural, yet who objects to eyeglasses as an aid to reading or driving on the basis that they are unnatural?" The goal of reading or driving is a valued one, and if eyeglasses make it easier or safer, then that is beneficial. "Anabolic steroids used by an Olympic weightlifter are no more unnatural than eyeglasses, yet they are almost universally abhorred," says Murray.

The difference lies in the meaning of the activity and the place the idea of the natural plays in it, according to Murray. Excellence in sport is meant to be the product of natural talents and their perfection by hard work and other virtuous activities. The idea of the natural here is essential to the shared social meaning of the practice itself. This is why performance-enhancing drugs in sport are disapproved of. Further, because sport is a rule-governed activity and because fairness is highly prized in competition, athletes who use banned performance-enhancing technologies are condemned as cheaters and as people who compete unfairly and therefore behave unjustly toward their fellow athletes.

It also is a mistake to assume that there can be *an* ethics of enhancement, according to Murray's work. "Instead, the ethical wisdom of cognitive enhancement will depend on many things including the broad social context, the impact on justice, and the meanings embedded in the social practice in question," says Murray.

Mankind's possibilities for enhancement do not occur in isolation within each of us as single, free human beings, but collectively within all of us as embodied creatures whose lives and flourishing are deeply intertwined with one another, according to Murray. "A thoughtful understanding of the ethics of enhancement must take into account the meaning and purpose of the activities being enhanced, their social context, and the other persons and institutions affected by them," says Murray. "There will be no single ethics of biomedical enhancement."

Other questions related to cognitive enhancement, especially for more widespread use, may be prudent to ask, according to Murray. Cognitive enhancers may first be used to treat disorders like dementia, but they could also benefit all of mankind by increasing everyone's cognitive abilities. What would be so bad about that? Is taking cognitive enhancers just another practice of good educational or mental health, like providing a positive learning environment and practicing good study habits? Or, is popping a pill a "quick fix" or way of avoiding a real issue, instead of working toward improving cognitive ability through reading or increased practice? Should we take accessibility of the drugs in to consideration? Will people of lower incomes be able to afford such cognitive enhancers, and if not, what consequences will unbalanced availability of the drugs have?

Part of the answers to these neuroethical questions may lie in contrasting likely scenarios of cognitive enhancement with the use of performance-enhancing drugs in Olympic sport, according to Murray. This also will highlight the differences between the ethics of enhancement in sport and the ethics of cognitive enhancement in a variety of different settings, for a range of different purposes.

PROSPECT

As research on cognitive enhancement progresses, excitement grows about its potential benefits for treating specific cognitive disorders and for improving general cognition. "However, we must continue to use neuroethics as a platform to weigh the benefits and potential harms of cognitive enhancement, and contrasting and comparing it to performance-enhancing drugs in sport may be one way to do this," says Murray.

REFERENCES

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1. Society for Neuroscience. New research finds that the common arguments against the development of cognitive enhancers are misguided. *Society for Neuroscience News Releases*. NR-11-05 (14 November 2005) [[FullText](#)] [[Back2Text](#)].
2. Thomas H. Murray, President. *The Hastings Center Web site* (last viewed 30 November 2005) [[FullText](#)] [[Back2Text](#)].



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