

## US experts urge focus on ethics in brain research (Update)

May 14 2014, by Kerry Sheridan



Credit: Rice University



Ethics must be considered early and often as the field of modern neuroscience forges ahead, to avoid repeating a dark period in history when lobotomies were common, experts said Wednesday.

President Barack Obama sought the recommendations of the Presidential Commission for the Study of Bioethical Issues, as part of his \$100 million Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative announced last year.

It is "absolutely critical... to integrate ethics from the get-go into neuroscience research," and not "for the first time after something has gone wrong," said Amy Gutmann, Bioethics Commission Chair.

However, the first of two reports due from the commission stopped short of establishing guidelines for research, saying that ethical issues "will not be extensively analyzed or resolved in this report."

Instead, it called for institutions and individuals engaged in neuroscience research, as well as government agencies and other funders, to integrate ethics early in research.

It also urged innovative approaches to integrating ethics, making sure ethics is introduced at all levels of education, and explicitly including ethical perspectives on advisory and review bodies.

## **Dark history**

Gutmann said it was important to learn from the practices of the 1940s and 50s, when thousands of lobotomies were performed in the United States as enthusiasm swept the media and the medical field and the dangers were largely ignored.

The surgery involved poking holes in the skull and brain in an effort to



alleviate symptoms of mental illness. The procedure often left patients incapacitated, and lobotomy was eventually discredited in the 1950s.

"In the case of the history of lobotomy, there was great hype and great damage done, so it is very important that we learn from this history," Gutmann told reporters.

Contemporary neuroscience is a relatively new field that includes research on Alzheimer's, traumatic brain injury, depression, Parkinson's disease and more.

All told, neurological conditions affect more than one billion people globally, the commission said in its report.

Science is moving fast on improvements in brain imaging, dementia research, deep brain stimulation to alleviate symptoms of Parkinson's disease, as well as electrical implants that could boost memory and brain function.

But each of these areas raises ethical concerns, including at what point people with dementia can truly give informed consent to researchers, and whether cognitive enhancements could be unfairly distributed in society, Gutmann said.

Advances in brain imaging could also lead to questions about privacy, amid fears that doctors and researchers could garner more information than intended about a patient.

The use of deep brain stimulation, a risky and sometimes controversial procedure that aims to cut back on tremors associated with Parkison's and is being explored for use in depression and obsessive compulsive disorder, should be rigorously studied "to separate hope from hype," Gutmann said.



## **Technology outpaces ethics**

Commission member and neuroimmunologist Stephen Hauser said the field is poised to accelerate rapidly in the coming years, and that means all neuroscientists must be aware of the ethical questions involved.

"Not all neuroscientists are equally attuned," Hauser said.

Miguel Faria, a neurosurgeon and author who has written extensively on the history of brain research, agreed.

"Technology has outpaced ethical considerations and many young medical scientists have not been properly introduced to medical ethics," said Faria, who was not involved in the commission's work.

Faria said any ethics approach must be based upon respect for the individual, as doctors pledge according to the Hippocratic oath which includes vows be humble, respect privacy, and avoid harm.

On the other hand, pursuing a path based on population ethics is just as dangerous as having no medical ethics at all, he said.

"Why? Because it is centered on utilitarianism and monetary considerations rather than committed to placing the interest of the individual patient or experimental subject above all other considerations," he told AFP in an email.

Gutmann said the next phase of the commission's work is to examine more deeply the ethical implications of neuroscience research and its effects on society.

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Citation: US experts urge focus on ethics in brain research (Update) (2014, May 14) retrieved 28 April 2024 from <u>https://medicalxpress.com/news/2014-05-experts-urge-focus-ethics-brain.html</u>

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