

Massive new brain projects, secret science and emerging Cold War weapons: The threats are real

by Cheryl Welsh

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In January 2013, the EU officially announced a decade long multi-billion dollar project to build a silicon brain—now the world's largest program on brain research. The project utilizes computers to process existing brain research in order to reconstruct and simulate the brain. In his State of the Union address, President Obama proposed the Brain Activity Map project to understand how the brain works. Dr. Francis Collins is director of the US National Institutes of Health (NIH), a coordinating agency of the Brain Activity Map project. He was the former head of the Human Genome Project which sequenced the human genome. Collins compared the Genome Project to the new project:

[T]his could build a foundation for the future of our understanding of neuroscience that would be going forward for decades to come. . . . This is the natural place for the government to invest, just like the Genome Project, where all of that effort was basically funded by the taxpayer, but then resulted in this enormous proliferation of private sector activity that's transforming medicine.^[1]

Not without controversy, the US scientists proposing the project warned of potential ethical concerns including mind control. Ethicist Dr. Paul Wolpe agreed that the massive projects signal a turning point in neuroscience. Mind control is no longer science fiction and the threat of new technologies and weapons is real.^[2] The public has long held a general fear that the government will someday read a person's thoughts remotely and take over his or her brain. In the US, the science of mental and physical torture began with the Russian brainwashing scare in the 1950s and the CIA reacted by launching its mind control programs. Since then, brain research for national security purposes, as well as public fears have continued. In 1976, the U.S. Defense Advanced Research Project Agency (DARPA) reported to Congress that mind-reading machines are beginning to decipher a person's brain waves or EEG. When asked if the machines could surreptitiously scan the brains of prisoners of war and unwitting victims, the Agency scientists stated that current technologies require electrodes placed on the scalp. However, they described magnetic brain waves that could be detected a few feet away and greater distances could be achieved in the 1980s.^[3] Today, it is not known if the scientists were successful.

Public fears of government scientists conducting secret mind control research are continuing. Since the 1960s, victim petitions for help to stop government mind control targeting worldwide have been unrelenting. In the 1960s and 70s, US Congress called them "wavies" while today the news media mockingly refer to them as "the tin foil hat crowd." Wolpe explained that he gets hundreds of letters but the claims are not real. The conventional wisdom is that unclassified science research develops at a slower but similar rate as in classified research. Neuroscience is rudimentary largely due to the lack of technologies to access the brain. Brain implants are invasive and can only interface with small groups of brain cells while magnetic resonance imaging machines (MRIs) and other technologies can only imprecisely scan the whole brain.

Both mind control allegations and solving how the brain works require new technologies that can access the brain remotely and a general theory of how the brain works. The brain projects represent a major shift in neuroscience progress and a second look at the allegations is warranted. It sounds absolutely impossible but emerging evidence presented below supports the following. Similar to the US Manhattan Project that led to the successful engineering of the atomic bomb, a secret 1950s "Manhattan mind control Project" may have taken place. In the 1950s, the basis of a generally accepted theory for how the brain works was available. The US government kept the science of remote mind control weapons secret from most experts for decades. The evidence is new and compelling and supports that the mind control allegations are true.

Atomic physics and a 1950s brain theory

Although considered more complex than atomic physics, today neuroscience is at a similar stage as atomic physics of the 1940s. In the early 1930s, physics experiments supported "the generally accepted idea that slow neutrons would be taken up by the atomic nucleus and increase its mass, the new nucleus might be unstable, and lose beta particles with the formation of a new element." [4] But some physicists discovered that this hypothesis was wrong and in 1939, the process of fission was established. Notably, fission was considered impossible by some leading physicists at the time. Nevertheless, the concept of the atomic bomb could be discerned from unclassified physics literature and a group of physicists warned President Roosevelt to build the weapon before Germany did. Likewise, the concept of advanced mind control weapons is evident in today's neuroscience literature; there is a consensus by the EU and US that the government brain projects are scientifically feasible and significant progress is likely.

Furthermore, a prominent neuroscientist recently wrote that a general theory of how the human brain works could be based on the neuroscience breakthroughs that occurred in the 1950s. Neuroscience breakthroughs after the 1950s paled in comparison. [5] A theory for how the brain works was possible, based on the 1950s breakthroughs coupled with research after the 1950s establishing that the "microstructure of cognition" is the synapse of the neuron which is the basic computational unit of the nervous system. The book received favorable reviews; it has not been contested by neuroscientists; and it is the basis of two Yale University courses on neuroscience. The book won a 2010 International Society for the History of Neurosciences award. Thus, a strong case can be made that in the 1950s, the fundamental research required to develop a brain theory was available in the unclassified neuroscience literature.

Twentieth century physics and twenty-first century molecular biology

A fascinating history supports that the US government kept the science of some mind control weapons secret from most experts for decades. It turns out that classified and unclassified neuroscience research utilized different approaches to the study of the brain, as shown below in a brief history of the development of technologies to access the brain.

Physics dominated the first half of the twentieth century and much has been written about physicists who left atomic research for biophysics research of life, including brain research. This contributed to a biophysics boom of the 1950s which included multidisciplinary research by physicists and biologist on the study of nerve and brain function. A.V. Hill, D.W. Bronk and F.O. Schmitt were all prominent neurophysiologists, scientific administrators and military advisors who believed in and promoted the importance of biophysics. But for several reasons beyond the scope of this paper, the great interest in biophysics did not last through the 1960s. [6] Instead it was absorbed by molecular biology which culminated in the Human Genome Project, as well as by biochemistry and modern neuroscience. Molecular biology is one major area of science that has dominated neuroscience research. [7]

So it is not surprising that the US brain project was conceived at a meeting arranged by Miyoung

Chun, a molecular biologist and included George Church, a molecular geneticist among others. They agreed on a plan to study the brain that embraced a focus on molecular biology--by developing technologies to access the brain such as nanoprobes and wireless microcircuits to float freely in the brain. The proposed technologies to access the brain involved physical contact, invasive procedures or bulky machines and cannot be done remotely. By contrast, classified government research developed different technologies to access the brain remotely.

Secret US government mind control research utilized a physics and electrical engineering approach for remote access to the brain. In the 1940s and 50s, physics, computer science and electrical engineering were dominant areas of research in the classified realm. This led to the development of U.S. radar and satellite surveillance and signals intelligence which proliferated in nearly complete secrecy. To some extent, the different approaches found in classified and unclassified neuroscience research can be traced to basic science facts about the brain.

For progress in neuroscience and mind control weapons to take place, technologies for direct access to the brain are required and the preference is for noninvasive remote methods. For example, invasive surgeries performed on healthy human subjects in experiments is unethical. There is no dispute that the electrochemical brain communicates with electrical, electromagnetic and magnetic signals as well as chemical signals; both are essential to understanding brain function. However, the brain can only be accessed remotely by electrical, electromagnetic and magnetic signals which can mimic, interfere with or directly communicate with brain cells. The brain cannot be accessed remotely by chemical signaling. While unclassified neuroscience research has focused on developing an electronic technology such as nanoprobes or implants to interface with the brain, classified research such as the DARPA EEG research is based on the concept that the brain itself is an electrical system. As shown below, this difference would have far reaching results.

Bioelectronics, the application of electronics science to biology

More than a brief introduction to the concept of the brain itself as an electrical system is beyond the scope of this paper. During the Cold War, unclassified research demonstrated that the brain is like a radio receiver that can transmit and receive electromagnetic signals,^[8] and the brain has similarities to a hybrid analog and digital computer.^[9] The brain also resembles a computer's integrated circuits^[10] with direct current (dc)^[11] and semi-conduction^[12]. This research is considered promising although nearly all of it remains unproven.^[13] In the 1950s, government scientists would have realized the tremendous national security implications of this research—it is a likely scientific basis for some remote mind control weapons. Nevertheless, since the 1950s, the concept of the brain as an electrical system received little or no government funding for unclassified research and today, scientists conducting unclassified mainstream neuroscience research reject this concept as scientifically impossible, science fiction or worse.^[14]

One example illustrates the point. John von Neuman, the mathematician and computer pioneer who conducted secret research on the atomic bomb wrote the 1957 book *The Computer and the Brain*. He predicted on logical and mathematical grounds that a hybridization of data transmission and control functions must exist in the biological world. Von Neuman and several prominent scientists hypothesized or conducted unclassified research that extended von Neuman's prediction: There were two major brain signaling systems in the brain and the brain worked by a combination of analog and digital coding by means of the interaction of two types of brain cells, neurons and glia.^[15] This research has never been proven; for decades, it has faced lack of interest or scientific dogma and some of research is known to be classified.

There are many reasons that the mainstream science establishment opposes conflicting concepts and ideas, including entrenched scientific turf and theories, perceived limitations in tools and methodology, and differential institutional power.^[16] For over 60 years, the US government has had the tremendous advantage of a secret physics and electrical engineering approach to neuroscience research--called bioelectronics--while for the most part researchers conducting unclassified research were limited to a molecular biology and biochemistry approach. For example, without exposure to bioelectronics, researchers in the unclassified realm could not fathom how electromagnetic radiation

could interact with the brain. Consequently, mind control allegations are considered science fiction.

In reality, two different approaches--both essential to solving how the brain works--have been available to researchers conducting classified neuroscience research while at the same time only one approach has been available to researchers conducting unclassified mainstream neuroscience research. Accordingly, the US government almost certainly has made great advances in neuroscience research while at the same time unclassified neuroscience research has remained rudimentary. In this way, a vital national security has been maintained for decades.

Conclusions

Contrary to the consensus, the emerging evidence supports that remote mind control weapons have been scientifically feasible for decades. The risk of already developed secret mind control weapons is significant and a thorough impartial investigation is called for.

(Cheryl Welsh is director of a small non-profit human rights group located in Davis, California, USA.)

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[5] Gordon Shepherd, *Creating modern neuroscience, The revolutionary 1950s*, (Oxford University Press, 2010) 232.

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[7] Larry Squire, ed. *Fundamental Neuroscience* (Academic Press, 2008) p. 9, 10

[8] William Ross Adey, 1989 Recipient of the d'Arsonval Medal, *Bioelectromagnetics* 11:1-11 (1990). See also Ivan Oransky, Obituary William Ross Adey, *Lancet* 364:232 (July 17, 2004).

[9] Theodore Bullock, Neural integration at the mesoscopic level: the advent of some ideas in the last half century, *J. Hist. Neurosci.* 4 No.3-4: 231.

[10] Obituary: Dr. Ichiji Tasaki, *Neuroscience Research*, 64 (2009) 1, 2. For brain with transistor characteristics, see John Lear, A primitive human guidance system?, *273 New Scientist* 316 (February 8, 1962).

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[13] For brain/electromagnetic radiation (EMR) interactions, see R.H.W. Funk et al., Electromagnetic effects, from cell biology to medicine, *Progress in Histochemistry and Cytochemistry* 43:185,189 (2009).

For dc brain currents, see Robert Becker, Electromagnetic forces and life processes, *Technology Review* 38 (December, 1972). For advances in dc brain research, see Michael Nitsche et al., *Transcranial direct current stimulation: State of the art*, (Elsevier, 2008) 206.

For semi-conduction, see Janos Ladik, Solid state physics of biological macromolecules: The legacy of Albert Szent-Györgyi, *Theochem*, 666-667:1 (December 2003).

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[14] For one example of scientific dogma, see Douglas Martin, Robert Galambos, neuroscientist who showed how bats navigate, dies at 96, *New York Times*, (July 15, 2010). Available at: nytimes.com/2010/07/16/science/16galambos.html.

For criticism on classified directed energy research for antipersonnel purposes, see Editorial, Secret Weapons, *Nature*, 489:177,178 (September 13, 2012).

[15] Robert Becker, *Body Electric*, (Harper, 1985) 88,89. See also Fn.9 Bullock at 219,223, 228,231. See also Yousheng Shu, Andrea Hasenstaub et al., Brain communicates in analog and digital modes simultaneously, *Science Daily*, (April 13, 2006). See <http://www.sciencedaily.com/releases/2006/04/060412223937.htm>.

[16] Stanley Finger, *Minds behind the brain, a history of the pioneers and their discoveries*, (Oxford University Press, 2000) 306

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