

informationliberation

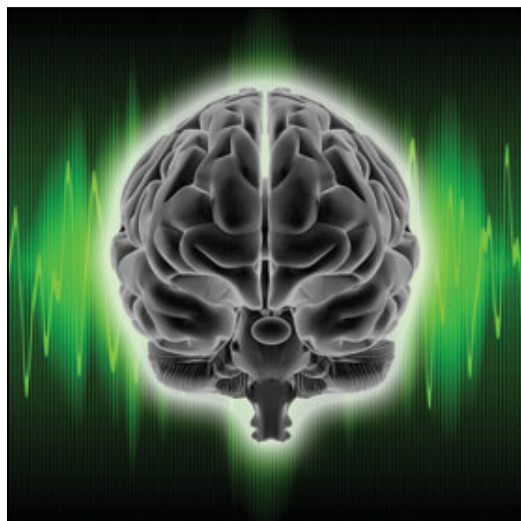
The news you're not supposed to know...

Breaking News
Browse by Category
Analysis
Highlights
Multimedia
Latest Comments
Info Portal
Archives
About
Link To Us
Contact

Article posted Jan 03 2009, 2:50 AM Category: [Big Brother/Orwellian](#) Source: [Willie D. Jones](#)  [Print](#)

Researchers use ultrasonic pulses to control the brain

Sound Waves For Brain Waves
By Willie D. Jones



When most people hear the word ultrasound, they think of the diagnostic tool used to look inside the womb and steal glimpses at a fetus. But researchers at Arizona State University at Tempe have developed a new use for it: to control brain activity from outside the skull.

William J. Tyler, one of the technique's developers and an assistant professor at ASU, says ultrasound will someday allow physicians to substitute neural implants with external devices. "We're trying to develop the technology to the point where we can do away with the electrodes that are used in vagus nerve stimulation and deep brain stimulation," says Tyler.

Vagus nerve stimulation is used to treat epilepsy and severe depression; deep brain stimulation treats Parkinson's disease and, experimentally, other neural and psychiatric ailments. Both rely on pacemaker-like systems surgically implanted in a patient's chest, with electrodes running either to nerves or the brain. Eliminating the risks of surgery could make neurostimulation more widely available.

In October, Tyler and his colleagues reported that they had used low-power, low-frequency ultrasound to stimulate activity in thin slices of brain tissue preserved on slides; by early November, the team had performed an experiment on a live mouse in which they induced involuntary movement by stimulating certain regions of the mouse's brain from outside its head. In both cases, they used bursts of ultrasound at frequencies between 0.44 and 0.67 megahertz—much lower than the frequencies used in imaging. The device delivers 23 milliwatts per square centimeter of brain—a fraction of the roughly 180 mW/cm² upper limit established by the U.S. Food and Drug Administration (FDA) for womb-scanning sonograms.

Search

[Advanced Search](#)

Login

Username:

Password:

Remember Me

[Forgot Password?](#)
[Register](#)

- Most Popular
- The New American Century - 03/03
 - Top 25 Censored Stories for 2009 - 02/21
 - Digital TV: Mind Control by the Sound of Silence - 02/13
 - Endgame - 02/26
 - Clinton, Quigley, and the New World Order - 03/02
 - The Great "Global Crisis of Maturity" and the New World Order - 03/02
 - The Age of Transitions - 02/27
 - Deputy Caught On Tape Viciously Attacking 15-Year-Old Girl In Jail Cell (VIDEO) - 03/02

Multimedia

The Age of Transitions: The Dystopia Planned For Our Future

The Disappearing Male: From Virility to Sterility

The Century of the Self: The Untold History of Controlling the Masses Through the Manipulation of Unconscious Desires

Zeitgeist: All the World is a Stage

Operation Gladio: "One of the most secret programs that ever"

Highlights

existed"



Endgame: Blueprint for Global Enslavement



The Money Masters: How International Bankers Gained Control of America

(more)

This combination of low frequencies and low power represents a sweet spot where the sound readily penetrates the skull and affects brain cells. The sound waves temporarily knock open the cells' voltage-gated sodium channels, special proteins that allow sodium ions to pass through the cells' membranes. The result is a localized change in a cell's polarity from negative to positive. The polarity change can be strong enough to cause the cell to release chemical neurotransmitters and thereby induce similar voltage changes in other neurons to which they are linked, resulting in movement or other behaviors.

Expectant mothers needn't worry that ultrasound imaging would harm fetal brains, says Tyler. His group has shown that at the higher frequencies and power ratings used for imaging, ultrasound's bone-penetrating and brain-modulating potential is greatly diminished.

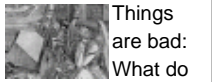
Tyler reports that he and his colleagues are also investigating low-power, low-frequency ultrasound's use in another device: instead of triggering precisely controlled brain activity in a focused area, it would lower the metabolic rate across the entire brain. One application for this is the prevention of secondary damage that occurs in the minutes or hours after a head injury—when a trauma-induced slowdown of blood flow and a cascade of biochemical reactions result in cell death.

"Imagine an infantryman rocked by an explosion or a football player knocked to the ground by a helmet-to-helmet hit," says Tyler. "Some sensor would detect that there was enough force generated for it to be a concussive event. Then an array of ultrasound transducers mounted in the helmet would automatically turn on, modulating neuroprotective pathways in the brain that would slow the brain's metabolic rate, [limit the destructive chemical cascade], and prevent cell death."

The low frequencies used can travel some distance through the air. So could you be zapped with a mood-altering blast from across a room? Probably not, Tyler says. In theory, the ultrasound technique could work from up to about a meter away, he says. "The farthest we've tried so far has been roughly 50 millimeters."

It will take at least five years for any version of remote ultrasound brain control to make it through development, clinical trials, and FDA approval, Tyler estimates. He says he is establishing a spin-off company that will do the further research required to get a device to market. "I feel like I have the social responsibility to try to develop this as much as possible," he says.

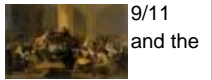
PHOTO: max delson/istockphoto (brain), clearviewstock (sound waves)



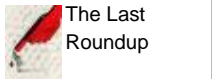
Things are bad: What do we do about it?



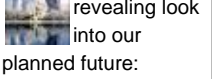
Web spies monitor activists online for police, attorney-general - report



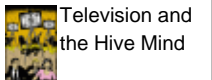
9/11 and the American Inquisition



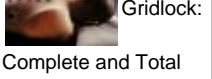
The Last Roundup



A very revealing look into our planned future: Washington's Future, a History



Television and the Hive Mind



Global Gridlock: Complete and Total Control



Death of the Bees: GMO Crops and the Decline of Bee Colonies in North America

(more)

Spread the word Stumble It! - Digg it! - reddit

Latest Articles in: [Big Brother/Orwellian](#)

- [Fight against terror must mean the end of ordinary people's privacy, says ex-security chief](#)
- [A rare peek at Homeland Security's files on travelers](#)
- [Colleges on extremist signs watch](#)
- [Internet firms set to track and cash in on surfing habits of 11million customers](#)
- [Where you've been on Net not private, judge rules](#)

- [Bill proposes ISPs, Wi-Fi keep logs for police](#)
- [Government Wants School Children To "Think Like 7/7 Terrorists"](#)
- [Secret police unit set up to spy on British 'domestic extremists'](#)

Email this article:
 To:
 From:

Comments 1 - 2 of 2		Add Comment	Page 1 of 1
TimAng	Posted: Jan 04 2009, 8:39 PM	Link	
	<p>"So could you be zapped with a mood-altering blast from across a room? Probably not"</p> <p>"In theory, the ultrasound technique could work from up to about a meter away"</p> <p>"It will take at least five years for any version of remote ultrasound brain control to make it through development, clinical trials, and FDA approval"</p> <p>so i guess this means it works from well over one meter away and a remote version already exists.</p>		
Anonymous	Posted: Jan 05 2009, 2:32 PM	Link	
72.158.XXX.XXX	If there is talk about it now...it already exists...		

BEFORE YOU POST

Before posting please read our [About Page](#), our [Disclaimer](#), and our [Comments Policy](#).

Please note: InformationLiberation is neither liberal or conservative. When one takes the time to research the "liberal elite," whom the conservatives oppose, and the "conservative elite," whom the liberals oppose, one finds both "elite" are one and the same. "Liberal" or "Conservative" is not a substantive choice, it is only the carefully crafted illusion of a choice, for both parties come together when they are instructed to.


"The real truth of the matter is, as you and I know, that a financial element in the larger centers has owned the Government ever since the days of Andrew Jackson."
 A letter written by FDR to Colonel House, November 21st, 1933

"Fifty men have run America, and that's a high figure."
 Joseph Kennedy, father of JFK, in the July 26th, 1936 issue of The New York Times.

If you care to know who runs the world you live in, view [these films](#). If you care not then I leave you with this quote to ponder:

"There will be, in the next generation or so, a pharmacological method of making people love their servitude, and producing dictatorship without tears, so to speak, producing a kind of painless concentration camp for entire societies, so that people will in fact have their liberties taken away from them, but will rather enjoy it, because they will be distracted from any desire to rebel by propaganda or brainwashing, or brainwashing enhanced by pharmacological methods. And this seems to be the final revolution."
 Aldous Huxley, Tavistock Group, California Medical School, 1961 [Audio](#) - [Transcript](#)

Add Comment	
Name	

Comment	
* No HTML	
Verification *	Please Enter the Verification Code Seen Below 

FAIR USE NOTICE

This site contains copyrighted material the use of which in some cases has not been specifically authorized by the copyright owner. Such material is made available for the purposes of news reporting, education, research, comment, and criticism, which constitutes a 'fair use' of such copyrighted material in accordance with Title 17 U.S.C. Section 107. If you wish to use copyrighted material from this site for purposes of your own that go beyond 'fair use', you must obtain permission from the copyright owner.

[About Us](#) - [Disclaimer](#)

"Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing ever happened..." -
Winston Churchill

[Top](#)