

Hacking the Brain

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Editor's Note: Ever since Gibson's Neuromancer we've been speculating on the brain/computer interface. An interesting book on this kind of stuff, the novel [Cyberchild](#) [1] deals with computers implanted in the brain, and some of various related issues. We will be dealing with brain interface technology more and more as we move forward, and our tools and science improve.

([Wired](#) [2]) - Hackers who commandeer your computer are bad enough. Now scientists worry that someday, they'll try to take over your brain.

In the past year, researchers have developed technology that makes it possible to use thoughts to operate a computer, maneuver a wheelchair or even use Twitter — all without lifting a finger. But as neural devices become more complicated — and go wireless — some scientists say the risks of “brain hacking” should be taken seriously.

“Neural devices are innovating at an extremely rapid rate and hold tremendous promise for the future,” said computer security expert Tadayoshi Kohno of the University of Washington. “But if we don't start paying attention to security, we're worried that we might find ourselves in five or 10 years saying we've made a big mistake.”

Hackers tap into personal computers all the time — but what would happen if they focused their nefarious energy on neural devices, such as the deep-brain stimulators currently used to treat Parkinson's and depression, or electrode systems for controlling prosthetic limbs? According to Kohno and his colleagues, who published their concerns July 1 in *Neurosurgical Focus*, most current devices carry few security risks. But as neural engineering becomes more complex and more widespread, the potential for security breaches will mushroom.

For example, the next generation of implantable devices to control prosthetic limbs will likely include wireless controls that allow physicians to remotely adjust settings on the machine. If neural engineers don't build in security features such as encryption and access control, an attacker could hijack the device and take over the robotic limb.

[Click Here](#) [3] for the rest of the story.

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[1] <http://www.amazon.com/dp/1411626613?tag=smartalixcom-20&camp=14573&creative=327641&linkCode=as1&creativeASIN=1411626613&adid=1JWG83BBH64FBN3NDKP4>

[2] <http://www.wired.com/>

[3] <http://www.wired.com/wiredscience/2009/07/neurosecurity/>