

From Cyborgs to Androids: Where have all the humans gone?

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Imagine having a chip implant which allowed you to communicate with a computer, or a bionic arm that provided you with super-human strength. Sound a bit too strange for you? If self enhancement isn't your cup of tea, picture meeting a new colleague at work, so attractive that you failed to notice it wasn't human.

Eerily enough – you don't need an over-active imagination or an affinity for science fiction to conjure up these scenarios. Each of them is already a reality. So what do you choose? – to join in or to be overruled?

These are our only options, claims Kevin Warwick, a crazed cybernetics professor at the University of Reading notorious for having two chips implanted in his body; enabling his movements and nerve impulses to be tracked and manipulated by a computer, essentially allowing him to interact with it.

So where do cyborgs and androids come in? Well, increasingly – everywhere. But before thinking about how we will be overrun by these evil beings, let us start with the basics.

A cyborg is a Cybernetic Organism; a life form that crosses the boundaries between human and machine. Numerous cyborg theorists argue that almost all of us that live in a modern society are cyborgs, due to our reliance on artificial enhancements, such as mobile phones to extend our capacity for communication. However, a more interesting situation is where machine and human exist physically as one.

Implantable technology has been around for years, and the common cyborgs are those fitted with pacemakers and similar devices. There's no problem with medical innovation, one may rightly point out. However the use of such technology is moving towards enhancement rather than rectification. What was once

an obsession of mad scientists is making its way into mainstream humanity.

In 2003, Jesse Sullivan, an amputee, was transformed into a cyborg, being able to carry out routine tasks with a bionic arm which responded to the firing of nerve impulses created when he thought about the task.

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But that is history, and the Cyberhand Project goes a step further, not only reacting to brain signals, but also providing natural sensory feedback in response to touch by stimulating specific nerves. So it's becoming a reality – a fully functional bionic hand capable of both movement and feeling. Only much stronger than the more traditional soft flesh and brittle bone; I for one would never get into a fight with the likes of Jesse Sullivan.

But as I said, cyborgs are no longer the creation of a medical disability. A US surveillance company known as City-Watcher.com recently implanted its employees with VeriChip: an FDA-cleared Radio frequency Identification (RFID) microchip. This freakish device allows for GPRS tracking and high level security clearance. Those concerned with the privacy issues of this application do so rightly, as Verichip has already been hacked. So much for security!

Differing from cyborgs, an android is what (at present) is a far less complex and intelligent structure: an automaton

that resembles a human being; be it in physical appearance, behaviour or both.

But we can tell the difference between robots and computers, right? Professor Ishiguro from Osaka University's Intelligent Robotics Laboratory begs to differ. Last year he unveiled 'Repliee Q1Expo' – a 'female' robot that looks incredibly human. This android has silicone human-like skin, appears to breathe, blink, and even displays the constant subtle shifting exhibited by human beings. He believes that in certain contexts he can make people believe that androids are human.

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With the overlap of the organic and the artificial it is becoming increasingly difficult to differentiate between human and computer. As we leap to new technological bounds we can only wonder what the real implications of such 'progress' will be. For those like Kevin Warwick, becoming a cyborg is the only way to stay ahead in the game of life, which he claims will soon be run by a superior intelligence.

As for me—I'm off to go and buy myself a copy of *Artificial Intelligence for Dummies*. If it is going to happen, I might as well be prepared.