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# Cyborgs are coming

By Anand Parthasarathy

**BANGALORE, OCT. 18.** Can ideas be transferred directly from one person's brain to another? Can memory be changed or improved? Can dreams be recorded and replayed on your video recorder? Kevin Warwick doesn't hedge his answers with the academician's conventional, ifs buts and maybe. He asks: "Why not" — and he should know. He can give a talk about cyborgs — short for cybernetic organisms, a fusion of man and machine — and illustrate the concept by simply pointing at himself and saying: "You are looking at one".

The first man in the world to have a silicon chip surgically implanted within him, directly linking it to his nervous system, Dr. Warwick, held a packed auditorium at the National Institute of Advanced Studies (NIAS) here enthralled today with his vision of the not-so-distant future when only the timid will like to remain merely human — when the bold will enhance their human abilities by giving themselves a machine-assisted "sixth sense".

In 1998, Dr. Warwick, Professor of Cybernetics at Reading University in the UK, had a chip — a radio frequency identity device — implanted un-

der the skin of his arm, with which he could operate doors, turn light bulbs on and off — and switch on a coffemaker. And in March this year, Dr. Warwick took another step towards machine-enhanced intelligence, when he underwent another surgical operation to embed a tiny connector into his other arm that used hair-like silicon electrodes to directly link with 100 nerve ends linked to brain.

He described subsequent experiments where by a movement of his wrist he could control a robotic arm — on another continent, via the Internet. In a first-ever experiment that reversed the sequence, he also fed tiny currents into his silicon electrodes and achieved artificially-created sensations in the body. "My wife Irena, had some microelectrodes implanted into her own system — and we could establish communication between our two nervous systems," he said.

The lecture also marked the release of the book Dr. Warwick has written documenting his experiences, entitled "I, Cyborg". The cover features him, made up to look like that well-known screen cyborg, "The Terminator" — and true to character he promised the Bangalore audience, in his best imitation of Arnold Schwarzenegger "I'll be back!"