Cyborgs

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What is a cyborg?

- Cyborg = ‘Cybernetic Organism’

- Term coined by Manfred E. Clynès and Nathan S. Kline in 1960.

- In real life, "cyborg" can be applied to anyone with a body-enhancing add-on.
History of Cyborg

- The idea of the cyborg has been with us for decades, but in reality the claim to being the first cyborg probably belongs to a lab rat.
The evolution of the Cyborg

The replacement and integration of parts of the human body with machines has been simplified and schematized in a model of four stages, as follows:

- **Stage I Cyborg:** Replacement or augmentation of the human skeleton.

- **Stage II Cyborg:** Replacement or augmentation of muscle.
The evolution of the Cyborg

- **Stage III Cyborg**: Replacement or augmentation of parts of the peripheral nervous system, autonomic nervous system.

- **Stage IV Cyborg**: Replacement or augmentation of parts of the central nervous system.
Who are cyborgs?

Everyday human/machine cyborgs
- do you wear a prosthesis
- do you take any medications
- do you depend upon any form of technology for transportation
- in short, how intimately tied are you to technology
Bio-medical Cyborgs

- Pacemakers
- Artificial hips and other joints
- Prosthetic limbs
- Artificial skin and other organs
- Cosmetic surgery

- ‘The elderly in society are becoming the first cyborgs’
I Cyborg

- Professor Kevin Warwick, the world's leading expert in Cybernetics.
What happens when a man is merged with a computer?

- This is the question that Professor Kevin Warwick and his team at the the department of Cybernetics, University of Reading intend to answer with 'Project Cyborg'.

- On Monday 24th August 1998, at 4:00pm, Professor Kevin Warwick underwent an operation to surgically implant a silicon chip transponder in his forearm.
What happens when a man is merged with a computer?

- This experiment allowed a computer to monitor Kevin Warwick as he moved through halls and offices of the Department of Cybernetics at the University of Reading.

- Using a unique identifying signal emitted by the implanted chip. He could operate doors, lights, heaters and other computers without lifting a finger.
Examples of Cyborgs

THE THIRD HAND:

- Performance artist Stelarc has used technology in a variety of ways to amplify and extend his physical body.
EXTRA EAR:

- Extra Ear would be a soft augmentation, mimicking the actual ear in shape and structure
EXOSKELETON

- It is a 600 kgm pneumatically powered 6-legged walking machine with a tripod and ripple gait.

- It can move forwards, backwards, sideways (left and right), sway, squat, stand-up and turn.

- The walking modes can be selected and activated by arm gestures.
Cyborgs in art
Kevin Warwick

- Kevin Warwick, Professor of Cybernetics at the University of Reading, UK, has implanted computer chips into his arm allowing him to communicate with a computer.
Pros & Cons of Cyborg

Pros

- Prolongs life.
- Enables one to lead a normal life
- Gives a part of the body back
- Improve the quality of life
Pros & Cons of Cyborg

Cons

- Training is needed for doctors.
- They are expensive.
- Psychological problems.
- Feeling different to everyone else.
- The risk of infection.
Conclusion

- 'Cyborg' is actually a science fiction shortening of 'cybernetic organism'. The idea is that, in the future, we may have more and more artificial body parts—arms, legs, hearts, eyes and so on—till one might end up finally as a brain in a wholly artificial body.

- In the years ahead we will witness machines with an intelligence more powerful than that of humans.
Reference sites

- Principia Cybernetica Web- http://pespmc1.vub.ac.be/CYBERN.html
- Hyperdictionary - http://www.hyperdictionary.com
- Steve Mann - http://wearcam.org/index.html
- Patricia Piccinini - http://www.patriciapiccinini.net/
- Kevin Warwick - http://www.kevinwarwick.com
Thank You!