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Cybernetics: From Fiction to Fact

In the past few years, we have seen breathtaking developments biotechnology, and have heard about the potential to modify or enhance humans through genetics. We are now on the leading edge of something with at least as great a potential for good and for ill: the group of technologies focused on nanotechnology and, in tandem, cybernetics. These rapidly developing technologies will also enable human beings to reengineer and modify themselves, but without the need to involve genetics or reproductive mechanisms.

Cybernetics technology at its simplest is the integration of man and machine, or the 'merging' of the biological and mechanical. It has also taken on the meaning of adding prostheses to the human to replace lost function, or to augment functions.

What drives many of the current developments in this field is the enormous potential for improving the capabilities of the disabled. In this presentation I will show how cybernetics technology will help some paralysed people to operate mechanical prostheses by thought, and how implants will help blind people to see and the deaf to hear.

However, although this technology is exciting and may well significantly improve the lives of many, it has potentially dark sides and raises some important ethical issues. Cybernetics technology will undoubtedly develop beyond helping people with disabilities, beyond replacing lost functions, towards augmenting and enhancing abilities, through both external or wearable computing devices and implantable devices. Other ethical issues we will face include fairness in access to new technologies, and the desire to 'remake humans'. This latter concern arises from the philosophical movement known as transhumanism and raises challenges for our understanding of what it means to be made in the image of God, to be human.

We need to be ahead of the game and aware where cybernetics can be used for good or ill. John Cornwell, writing in the Sunday Times, recently warned: *"...this is a science and technology that requires vigilance and attentiveness to social and ethical consequences. New genetics and reproductive technology caught out the ethicists, as research speedily outstripped our moral norms. The advent of new 'interfaces' could equally find us napping."*

Philippa Taylor
Associate Director
The Centre for Bioethics and Public Policy