

TRIAL  
VERSION

WOULD YOU LIKE TO BE SMARTER,  
LONGER-LIVED, MORE ARTISTIC?  
SHOULD WE USE TECHNOLOGY TO  
ENHANCE OUR BODIES AND MINDS?



- To explore the arguments
  - To expand your understanding
  - To express your views
- ... all in 15 minutes

*Open Up!* has been produced by the Democracy and Participation programme at **nef** (the new economics foundation). It is one of a range of practical tools developed by **nef** to re-engage people with democracy and decision-making. It has been funded by the Wellcome Trust, which wants to help people to grapple with complex scientific issues.

# THE ISSUE: SHOULD HUMAN BEINGS ENHANCE THEMSELVES?

**Scientists are starting to say it's no longer just science fiction that they could one day alter the human body and mind, in ways that might make humans stronger, faster, cleverer, perhaps more artistic, even longer lived?**

Using technology to improve our minds and bodies, beyond any normal medicinal purposes, is known as human enhancement. Most of the ideas are still far in the future, but research is beginning, and is raising some pretty far reaching issues.

**Open Up!** aims to help people to start thinking about it.

- **Are there limits to the human body?**
- **Would it be too risky?**
- **Would it be really unfair?**
- **And what's the point anyway?**

**Open Up!** and have a look at these questions...

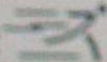
# WHAT SORT OF ENHANCEMENTS ARE WE TALKING ABOUT?

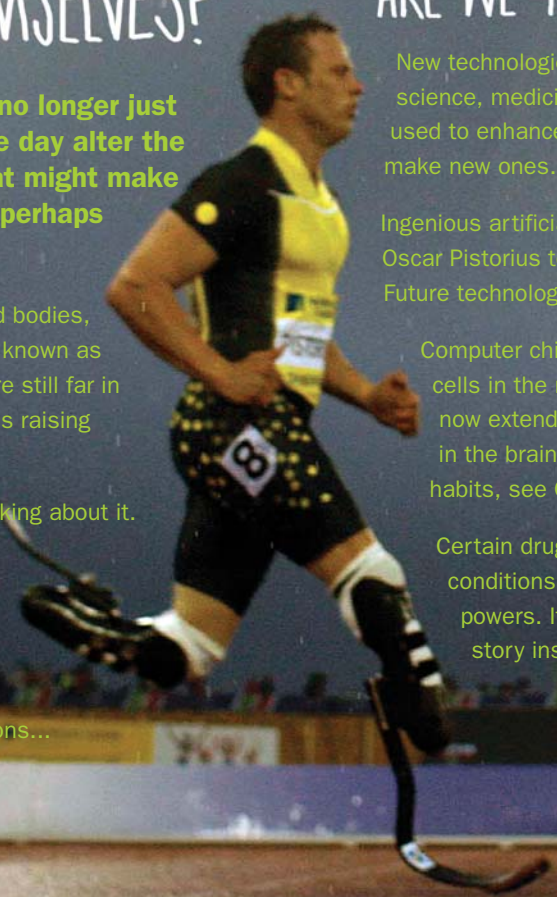
New technologies starting to emerge in materials science, medicine and computing, might one day be used to enhance human capacities, or perhaps even make new ones. For instance...

Ingenuous artificial limbs enable paralympic athletes like Oscar Pistorius to run faster than any normal sprinter. Future technologies might give us super-abilities.

Computer chips are being researched to link nerve cells in the retina to recover lost sight. Could chips now extend our range of vision? Electronic implants in the brain might one day control mood or eating habits, see Oliver's Story...

Certain drugs currently used to treat neurological conditions could be used to enhance cognitive powers. It's starting to happen. See Margaret's story inside...

uk athletics 



# WHAT IS ?

**‘Where is the wisdom we have lost in knowledge, Where is the knowledge we have lost in information? asked the poet T S Eliot. The amount of information we have just keeps on growing, and it becomes harder and harder to make sense of it.**

***Open Up!*** is designed to help. It provides:

- Some background (which you have probably just read)
- Stories to get you thinking about the issue
- A series of arguments (when you open up again). These are divided up into sections, each with a question, and a set of paired ‘yes’ and ‘no’ arguments.
- Many opportunities for you to engage with the arguments and have your say – you’ll need a pen or pencil.

The arguments are simplified, to contrast the ‘yes’ view and the ‘no’ view. But they are not meant to force you into an extreme position – you can choose from a range of options when giving your views.

How you use the *Open Up!* is up to you. Write as much or as little as you like. But if you can send in your feedback, it will affect *Open Up!*. This second edition of *Open Up!* has different arguments from the first edition because of feedback from readers.

So, when you are ready, read the stories to the right of this page, and then... ***Open Up!***

## MARGARET'S STORY

**I teach in a secondary school.** A third of the students in one of my classes are taking the drug Ritalin, to increase their concentration. It's supposed to be to treat the Attention Deficit and Hyperactivity Disorder (ADHD). Most of them don't have the condition, but it's a way to get the drug. More and more wealthy parents give it to their children to help them prepare for exams. They say it's just like taking lots of strong coffee. But is it different? Does this give them an unfair advantage? And if the whole class then starts taking it, no one benefits, so what was the point?

## OLIVER'S STORY

**I'm a neurosurgeon.** I implant electrodes into the brain which pass an electric current which can dramatically improve Parkinson's disease symptoms, help some depressive or compulsive behaviour. Today, the serious risks mean we only use it for the severest cases when all else has failed. But we're working on tiny magnetic particles which might one day do the same thing without major surgery. Our funders suggest we should then market our particles so people could choose their mood, or control their eating habits. But this isn't medicine any more and I'm not sure if would be right.

## THE STORY OF JANINE AND HER COACH

**Janine is a very good pole-vaulter.** She's in an elite national squad. She's also bright academically and she's at university. Her science studies mean she can't train as hard as her main rival, and she keeps coming second. Her coach urges her to train more. 'Suppose I took a drug which helps my body recover after heavy exercise,' she thinks, 'so I could train harder and keep studying?' But it's illegal. 'Why?' she argues to her coach? 'If it's an unfair advantage, then so is my special pole, and all the high tech stuff which measures my body responses.' Her coach says it's not just rules. Is that sort of sport you want, if you can only succeed by drugs? And sport could be the forerunner of what happens in society. 'Where would we draw the line for the human 'race'?' he asks.

## THINK ABOUT IT...

**We already have binoculars and cosmetic surgery. Computers enhance what we can do. So what's new?**

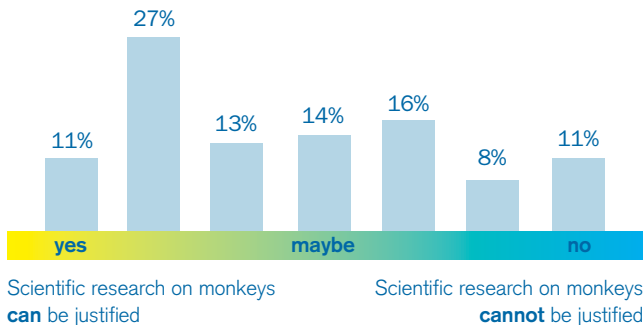
- Computers and binoculars are external tools. The ideas we're discussing are more radical. What if we could link our senses directly by computer chips implanted in our body and maybe see further or in the infrared region?
- If an infrared vision chip was available to help me drive more safely at night, would I just use it to drive faster instead?
- If (and it's a big if) we really could link parts of our brain to a computer, would we no longer have full freedom of thought?
- How far would you go to remove the effects of ageing from your body? Are you content to live a normal lifespan, or would you try and stop the ageing process if you could?
- Most of us would love to go through life cheerful and svelte, focusing like a laser beam at work and enjoying rapturous sex each night. Yet most of us feel uneasy about the idea of achieving these things through drugs. Why?
- Suppose we could modify the human eye so we had long distance vision which we could zoom, just by thinking, like the effect of binoculars? It would need vast leaps beyond current research on retinal implants and linking silicon chips to brain cells. But just suppose...

**Why would you do it?** To see a distant object with steady, pinpoint accuracy, and your hands free, would be great for bird watchers, sports spectators, drivers, sailors, the military. The sheer novelty of having it, too?

**But what about the downsides?** Would you want to make an irreversible change to a delicate, vital body organ? What if it went wrong? Would the military advantages force soldiers to get 'enhanced'? And who would be able to afford it? It might be 'cool' for me but would it be good for society?

You might like to know what the people who tried out the first edition thought. Their top three arguments (taking Challenge and Support together) were D1, B4 and B2.

What previous readers thought:



It's new and it's work in progress, so we'd appreciate any comments. Send them to: [Perry.Walker@neweconomics.org](mailto:Perry.Walker@neweconomics.org) or contact him on 0207 820 6360

Where next? We haven't space here, but if you want some sources of information to explore further, links will be available in future on our website at [www.neweconomics.org/amap](http://www.neweconomics.org/amap)