

The Genius Within review – a smart look at boosting our brains

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David Adam explores the history of intelligence and ways to improve his own, raising timely questions



David Adam with a tablet of the ‘smart drug’ modafinil.
Photograph: David Levene for the Guardian

Which of us would not want to enhance our intelligence? Indeed, some ethicists, such as [John Harris](#) at Manchester University, argue that it is our duty to improve ourselves if we can, and in turn society and the quality of life for future generations. If we were more intelligent, perhaps we would invent better ways to generate energy efficiently at less cost and damage to the environment. Or generate ideas for solving political disputes without engaging in aggression and conflicts.

It is interesting that when we think of improving ourselves as individuals, we immediately consider boosting “cold” cognition – logic, critical thinking, memory capacity, etc – rather than “hot” cognition – the type required for you to understand what another person is thinking, termed “[theory of mind](#)”, and so important for soft diplomacy, resolving conflicts and psychological therapy. Cold cognition is nonemotional and reflects what is measured by the intelligence test, whereas hot refers to social and emotional cognition. David Adam, author of *The Genius Within*, regards cold intelligence as a key target for enhancement and I agree that superior cold intelligence is a great advantage. However, many of the jobs currently available are in the service industry and while these require a certain degree of skill, such as knowledge of computer use, the ability to have theory of mind, to understand what others are thinking and feeling and to be personable and likable are essential.

The Genius Within is a fascinating account of intelligence and its measurement. The book covers the history of intelligence: how the concept developed from [Alfred Binet](#) (inventor of the IQ test) and its subsequent misuse in the eugenics movement.

The author, who writes for *Nature*, informs us that even that outstanding scientific journal had a 1926 editorial on the subject of intelligence entitled Racial Purification. The reflections on ethics are extremely refreshing, especially given the emphasis currently being placed on genetics in health science, even in the area of complex mental health disorders such as schizophrenia, despite the fact that there are many genes involved of very small effect.

In addition, Adam experiments with DIY brain stimulation, where, using an electrical brain stimulator bought over the internet from the US, he attaches electrodes to his head and [has his wife turn on the stimulator](#). While transcranial magnetic stimulation (TMS) is an approved treatment for depression in both the UK and US, the evidence for the efficacy of transcranial direct current stimulation (tDCS) to boost cognitive abilities is controversial. Some experts have reported positive effects; others have found no effect.

Adam also purchases the “smart drug” [modafinil](#) and when the package arrives from India he tries 200mg (after having it analysed to make sure it is the real thing). This dose has previously been found to be the most effective for cognitive enhancement in [our placebo-controlled, double-blind experiments](#), and he does feel that focus, motivation and even progress in writing the book are improved.

But as Adam discusses, there are many unanswered ethical questions raised by cosmetic neuroscience and how the desire for human enhancement will change society as we know it. To what extent is neuroenhancement cheating, undermining effort and hard work? Should those who are disadvantaged in life have the chance to use technology to close the gap? Adam points out that while populations are growing, work opportunities are shrinking. He regards cognitive enhancement as a vital tool to help people get on. As we develop new drugs, technologies and devices to help people with neurological and psychiatric disorders improve cognition, healthy people will also use these innovations to boost their brain power.

Are we likely to use these new enhancement techniques to improve our work-life balance, complete our work so that we can develop hobbies, learn a new language or spend more time with friends and family? Or will we simply accelerate into a 24/7 work pattern, because we can now stay awake, alert and focused? It is clear that with the rapid advance in neuroscientific techniques and indeed in artificial intelligence, we, as a society, will need to consider which forms of cognitive enhancement are acceptable and by what methods we would wish to improve and flourish. Meanwhile, I recommend exercise, lifelong learning and evidence-based brain-training games, which are all safe and effective ways to boost the genius within you.

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- *The Genius Within* by David Adam is published by Macmillan (£16.99). To order a copy for £14.44 go to guardianbookshop.com or call 0330 333 6846. Free UK p&p over £10, online orders only. Phone orders min p&p of £1.99

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