

Enhancing capacities: right or wrong?

In the third article of a series looking at current matters in healthcare ethics and law, David Badcott and Joy Wingfield discuss the increasing use of cognitive and physical enhancers

As far as human characteristics or capacities are concerned, much of the debate concerning all methods of enhancement turns on the question: what is normal? Do we take normal to be represented by statistical averages, such as average height? If so, normal height would be markedly greater in some countries, such as Finland or the Netherlands, than in many other European countries and even more so when compared with countries around the world. Whatever value or range is chosen there will always be outliers unless the range is set so wide as to be meaningless.

The other common understanding of normal is in the sense of such that some parameter or quality "ought to be". In other words, a normal value or range is necessarily or directly related to a functional requirement. This is frequently the case in medicine and healthcare where, for instance, biochemical values outside a normal range are used as diagnostic indicators of disease. The danger here is that the selected parameter may not be the only relevant factor so that it is, in effect, a necessary but an insufficient indicator. As a caution on being overly obsessive with normal values, author Jirí Vácha notes: "If we consider the individual only by considering his characters in isolation and according to the conventional norm, only six individuals would be normal in 100 independent characters".¹ And Shuaib Manjra, chairman of the South African Institute for Drug-free Sport, suggests that if disability is calculated using a medical model based on normal criteria necessary for normal people to function in a normal environment then "everyone — dependent on the category used — would be outside the norm for some category — eg, fitness, artistic ability, intelligence, computer literacy or body weight — and thus could be considered disabled for that category".²

Irrespective of these considerations, the use of the term "normal" can sometimes be troublesome to disabled people. Certainly, and quite rightly, no one who is disabled would want to be described as being abnormal. But there is an inclination to assume, at least in principle, that any disabling condition should be open to corrective or ameliorative treatment wherever possible. Furthermore, such conditions should be avoided by suitable intervention where the means are available. And it is here that moral problems arise. Among these, the situation of deaf people has, per-



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haps, been among the most publicised and clearly articulated. One might assume that anyone with no or impaired hearing should wish to receive therapy or some form of hearing aid. Yet some deaf people see themselves as part of "a tightly knit linguistic minority"⁴ rather than being disabled, and some are parents who not only expressed delight at the birth of their deaf child but actively seek to bring another deaf child into the world.³ Earlier this year, *The Guardian* (Sunday 9 March 2008) carried an article entitled "This couple want a deaf child. Should we try to stop them?"

Ethical considerations

What are the fundamental issues here? There is a substantial literature on the extent to which the term "disability" is a social construct that has a largely adverse effect on the way in which disabled people are portrayed and treated. But in this particular example, the most obvious ethical considerations are autonomy and human rights. Most people conceive children by natural means and, by and large, are content to await the birth of an infant with a uniquely combined genetic her-

itage. The decision to do so is theirs alone. Except in some well-defined circumstances (eg, where one or both parents are minors or judged to be mentally incompetent), the state has no authority to intervene and the potential offspring, a future autonomous person, is neither in a position to decide its coming into the world nor its physical or biological characteristics in the lottery of life.

What has changed, of course, is the ability to conduct *in vitro* fertilisation and to screen embryos for the requisite genetic profile before implantation. The arguments here concern the extent to which potential parents should have a right to refuse pre-implantation or newborn screening, irrespective of whether they are carriers of deleterious genes, or if they should be able to insist on screening to assist in conceiving a congenitally deaf baby. What should be of primary consideration is the extent to which parents should be allowed to set the biological life agenda for their children. Although deafness need not be a disability it is, nevertheless, always dysfunctional — at least as far as species norms are concerned. Parents seeking to create a deaf child are, therefore, imposing a dysfunctional burden on it.

Physical enhancement Stories concerning athletes, many of them famous champions, found to be using artificial means to raise their sporting prowess are relatively commonplace. For example, the South African paralympian Oscar Pistorius uses carbon fibre j-shaped blades (a ban on his taking part against able-bodied competitors in the Beijing Olympics has recently been overturned).

Generally, physical aids are obvious and have tended to be limited to better designed rackets, cycles, shoes or other clothing and these tend to be rapidly copied, so any personal advantage is short lived. More controversially, enhancements are often of a chemical or biological nature and hidden.

Where enhancement is seen to provide an unfair edge in competitive sport, public morality has generally supported measures to control such use through legislation. Some drugs used for sports enhancement are already covered by Controlled Drugs legislation because they have addictive properties. Examples include cannabinoids; anabolic agents, such as drostanolone and oxandolone;

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stimulants, such as cocaine; and narcotics like buprenorphine and pethidine. Non-statutory agreements, such as those enforced by the World Anti Doping Agency, add peptide hormones, such as erythropoietin and insulin, beta-2 agonists, masking agents and glucocorticosteroids to the list of banned substances. In these latter cases, the constraints are largely by agreement — if you want to take part you must agree to abide by the rules — albeit backed up by a complex and ever-evolving regime of residue testing and identification of cheats.

(We will not address the rather delicate matter of drugs, such as those used in erectile dysfunction or baldness, that appear to straddle the boundary of treatment and enhancement but a basic question to consider is whether efficacy is a sufficient justification for the availability of lifestyle drugs [which might include cognitive enhancers; see below] on the NHS.)

Cognitive enhancement At first sight the matter of cognitive enhancement may seem less problematic — which of us would not wish to have a better facility to remember facts, to process more information accurately and more rapidly or to become more creative? In addition, most people approve of the idea of enhancing an aspect of brain function lacking through disease or genetic inadequacy, or becoming diminished with age. This is entirely compatible with current therapeutic aspirations towards, for instance, Alzheimer's and similar diseases, and might be achieved pharmacologically or, given time, through the use of stem cell procedures. Restoring a perceived lack of capacity and treating impairment is in the very nature of medicine and health care and many prescriptions fall into these categories. People may approve of an intervention to restore or maintain normality, but what of “enhancing cognition in the intellectually intact”⁴ (ie, trespassing beyond normality)? Is this cheating? There would appear to be two immediate concerns:

- Might cognitive enhancement lead to unfairness or elitism?
- Could such practices be the beginnings of a slippery slope toward “posthuman beings”, in other words, an unacceptable shift taking us beyond our current understanding of what it means to be human?

Although most people accept that healthy human beings differ markedly in a wide range of intellectual respects and capacities, they generally take this to be natural and within the realms of processes of evolution and heredity. If not exactly fair, there is the modest consolation that none of us can exert any retrospective control over the intellectual hand we were dealt. How we subsequently make use of our brains is a much more open and susceptible matter. We are influenced by the environment and culture in which we grow up, the opportunities in life that we

seek (or that come our way) and many other factors.

A case might be made for wanting to enhance (rather than restore) the cognitive capabilities of those in professions with considerable intellectual demand. At least two professors have admitted to using modafinil either to counteract jetlag or to “increase mental energy and sustain hard thinking”.⁵ Similarly, cognitive enhancement might be desirable where high levels of concentration or safety might be paramount, for example, in pilots, surgeons or checking technicians. The same might be said of creativity — Samuel Taylor Coleridge is said to have been inspired to write ‘Kubla Khan’ after taking opium and Aldous Huxley experimented with hallucinogens but, arguably, creativity is something individual and multifactorial. It is nonlinear and unlikely to be susceptible to narrow chemical stimulation.

Apart from considerations of safety, the primary concern in pursuing more general, non-therapeutic cognitive enhancement relates to considerations of fairness and elitism that does not sit well with a British sense of fair play. Just who might be eligible for such products? If cost is a significant factor, should these intellectual facilitators be made available preferentially and, possibly, restricted to those from the sort of occupations that might substantially benefit the community? But who should determine eligibility? And what of children? Parents who could afford to pay for treatment for their children might add to other forms of privileged access in this way.

Legal considerations and policy

The control of drugs used for enhancing physical performance has already been mentioned. Some cognitive enhancers, such as methylphenidate and modafinil, are legally controlled as medicines by virtue of their therapeutic purpose. Manufacturers of other products, such as omega-3 oils and *Ginkgo biloba*, have sought to evade control by avoiding medicinal claims and describing them as food supplements. Codes of advertising practice, backed by regulations on the advertising and promotion of medicines have been used to force moderation of bold claims by manufacturers about fish oils and children's intelligence quotient, for example,⁶ although similar claims appear daily in magazine articles on healthy lifestyles and carefully worded versions of the same sentiments are used on pack labels.

A brief internet search reveals plenty of anecdotal accounts of the use of cognitive enhancers, at least in the US, to assist in competitive examinations or for improved performance at interviews. So far the UK has no legal constraints on such use and it does not feature in the assessment regulations of at least one university.⁷ Here, the definition of an academic offence (“to attempt to gain for oneself an unpermitted advantage in an assessment”) would certainly include the use of cognitive enhancers but there is currently no agreed policy on how this might be identi-

fied, and even controlled. Presumably this would only apply to illicit enhancers — some people rely on a cup or two of strong coffee to keep going and some students have resorted to the use of amphetamines when revising for examinations, although these are more directed towards staying awake than expanding the intellect.

Relevance to pharmacy

Pharmacists may find themselves asked by athletes about the presence of prohibited substances in various products (an up-to-date list of prohibited substances is available at www.didglobal.com).

The subject of cognitive enhancement by chemical means raises issues of at what point a substance is a food supplement, a medicine, a recreational drug or an agent for cheating in life's competitions. The law, as ever, takes a paternalistic view when harm might result from uninformed or uncontrolled use of drugs to enhance physical health or performance in the general public but is content to leave detailed control of serious competitors to the rules of associations and clubs that manage the contenders and award the medals. So far, the rules on intellectual competitions are similarly matters for the awarding institutions alone. We probably all know of colleagues who crammed for examinations taking Pro-Plus but modern therapeutics has supplied some more sophisticated alternatives. It is important that public confidence in the robustness of assessment for qualifications is maintained but in reality, the prospect of urine tests at the examination room door or regular drug checks on our school or university pupils is probably a public policy too far.

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- For articles contrasting a libertarian case for being allowed to use whatever means we can to improve ourselves against considerations of social policy, fair play and equality see Chan S, Harris J. In support of human enhancement. and Selgelid MJ. An argument against arguments for enhancement. Both in *Studies in Ethics, Law and Technology* (available at: www.bepress.com; accessed 14 May 2008)
- The *Journal of Law, Medicine and Ethics* 36(1) Spring 2008, includes various contributions on human enhancement from Eastern and Western religious and cultural perspectives.