

## EDITORIAL INTRODUCTION<sup>1</sup>

### *An Ravelingien*

In a remarkable manifesto entitled ‘The hedonistic imperative’, David Pearce (2007) depicts a time in which we will have suppressed all biological substrates of human suffering and achieve a new level of well-being that is currently above and beyond our grasp. This new emotional reality, it is predicted, will unfold in a post-human era, a hypothetical future in which we will have radically overcome all biological confines of our evolved human nature:

Post-human states of magical joy will be biologically refined, multiplied and intensified indefinitely. Notions of what now passes for tolerably good mental health are likely to be superseded. They will be written off as mood-congruent pathologies of the primordial Darwinian psyche. Such ugly thoughts and feelings will be diagnosed as typical of the tragic lives of emotional primitives from the previous era.

While this prognosis sounds far-fetched, to say the least, it is nonetheless a matter of fact that great advances have already been made, particularly over the past decade, in terms of insight in the neurochemical basis of our mental moods and capacities. This has driven the production of new

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drugs which outstrip former generations of psychotropic medication in ability to modulate moods and emotional states with great precision (Barondes, 2003). This makes them an attractive option for non-patients who do not suffer a particular disorder, but who wish to elevate their baseline mood states without having to bear the side-effects related to most recreational drugs. Indeed, it is well-known that SSRI's and other available drugs are already being used for such purposes.

Various authors anticipate that enhancement uses will continue to expand along with new pharmacological and, increasingly also, technological breakthroughs (Chatterjee, 2006; Farah and Wolpe, 2004). Currently, a wide array of technological interventions are being developed and explored as tools for relieving mental disease and achieving optimal affective functioning. These include transcranial magnetic stimulation, neurobiofeedback, implanted drug delivery devices, central nervous system prostheses and electrical neurostimulation implants. If the current investments by the neurotechnology industry are any indication, rapid growth of this research domain seems imminent. The Neurotechnology Industry 2007 Report notes a ten percent rise of revenues in 2006, amounting to a \$120.5 billion total. This includes neuropharmaceutical revenues of \$101 billion, neurodevice revenues of \$4.5 billion, and neurodiagnostic revenues of \$15 billion (Lynch, 2007).

A question which appears to be at heart of one of the hottest bioethical controversies today is whether it is a good thing to develop drugs and technologies that can make people feel 'better than well'. Of course, the discussion is hardly new. Many of the questions that are posed in light of emerging mood enhancements are recurrent themes from discussions on the ethics of human gene therapy since the late 1980's. They include questions relating to the proper goals of medicine; medical-ethical risk/benefit assessments; philosophical issues relating to human nature; the relevance of virtues such as effort, responsibility, solidarity, persistence and authenticity; concerns over fair access to health care; as well as classical concerns against intervening with a 'natural order' of some kind. Also, it is often argued that improvement of human affective functioning has been sought by humans since time immemorial. Traditional (and effective) methods for improving our minds include general health improvement; the consumption of certain

foods, herbs, alcohol; the practice of meditation, physical exercise; and engagement in social relationships.

The new neurotechnologies can nonetheless be distinguished in terms of proximity to the neural level (Hughes, 2007: 944). They are also said to be unique in that they emerge from a specific domain with which we do not normally associate 'enhancement' aims: the field of (curative) medicine. Furthermore, compared to traditional and pharmacological methods of neuroenhancement, it is often warned that these new technological transformations will have far greater implications due to the more specific, immediate and therefore more radical effects on the brain.

The expected advances in neuromodulation of mood are therefore considered by some as among the most promising and, simultaneously, most challenging developments within the 21<sup>st</sup> century life sciences. The promises relate to the fact that, for many people, maximization of feelings of happiness – i.e., presence of positive mood and absence of negative mood – is the most valued goal in terms of a 'good life' (Diener, 2000: 34). Granted that human beings are – due to various complex psychological biases – notoriously bad at making choices that will maximize their happiness (Hsee and Hastie, 2006), mood enhancement may come to be regarded as a very effective means to elevate our individual sense of well-being. This could be particularly relevant in light of studies that suggests that happiness generates success across various terrains of life, including friendship, marriage, work performance, income, and health (Lyubomirsky et al, 2005: 803; Diener, 2000: 41). Furthermore, many of these characteristics are amongst the most valued by society and promotion of such traits could indeed have beneficial social implications. With evidence that there are genetic (personality) predispositions that limit one's 'natural' long-term happiness set points (Tellegen et al, 1988), enhancement interventions may also be regarded as a tool for facilitating social equality.

On the other hand, it may be questioned to what extent inducing happy, pleasant feelings can have lasting and fundamental effects on one's well-being. In one sense, the concern follows from Brickman & Campbell's 'hedonic treadmill' thesis that we constantly habituate to achieved levels of happiness and therefore inevitably return to our original baseline level (Brickman and Campbell, 1971: 287-305). More importantly, however, the (current and foreseen) emergence and use of a

range of pharmacological and technological mood enhancements may even *reduce* well-being. Critics warn that artificial ‘short cuts’ to pleasant moods will diminish the depth of our social interactions, the intensity of human experiences and the value of our richest potentials. In explaining this concern, one is often referred to the numbing and isolating effects of the powerful drug ‘Soma’ as described in *Brave New World*. Various studies do report that relatedness is the – or close to the – most important factor that influences happiness (Ryan and Deci, 2001: 154). Would use of artificial happiness inducers thereby downplay the importance of our social and intimate relations? Also, the experience of negative mood due to challenges and losses forces us to find positive coping strategies. These could in themselves be important for achieving certain life goals and greater autonomy. Following a view as ancient as the hedonic one, there is more to well-being than feelings of happiness: the actualization of one’s potentials is what is truly important (Ryan and Deci, 2001: 141). Alternatively, it could be argued that there is more to happiness than mere pleasant mood states (Brülde, 2007).

The question whether – and to what extent – foreseen mood enhancements comply or rather conflict with the ideals and values of ‘the good life’ was the central focus of a recent international workshop at Ghent University. The results of the discussions are presented in this collection of essays.

The first essay is devoted to the state of art of neuromodulation of mood. Dirk de Ridder reviews the relevant developments of and trials in brain and nerve stimulation. The following two papers question what it means to induce an enhancement of mood through biomedical means. Maartje Schemer attempts to clarify the subject by illustrating the dynamic of the treatment-enhancement discussion. A case study involving adults with ADHD suggests that, whereas a sociological perspective may regard the medication of their condition as a form of disease mongering, the subjects themselves regard it as a necessary treatment to normalize their functioning. She also describes the various social effects of regarding adult ADHD as a disease rather than as a (undesired) part of the normal range of behaviours. Bengt Brülde, in turn, investigates which improvements of mood can be regarded as real enhancements, questioning whether chemical interventions in the brain will have a constituting or rather a detrimental effect on our happiness and that of others. The potentially unfavourable effects of

neuromodulation in terms of happiness are further highlighted in the papers authored by Valérie De Prycker and Rebecca Roache. Valérie De Prycker examines the role of pain and effort in the pursuit of happiness, and argues that – in some cases – there can be no gain without pain. The paper by Rebecca Roache also questions the legitimacy of shortcuts to happiness. In examining a seemingly obvious target of neuro-enhancement, she claims that an indiscriminate boosting of self-esteem would overestimate its benefits and bear undesirable side-effects for the self and others. In the final contribution to this volume, Mark Walker urges us to consider the merit of affective enhancement as a means to advance prosocial behaviour and a fairer distribution of happiness.

We hope that this special issue will make a modest but meaningful contribution to academic and policy discussions regarding the promise and predicament of the medical neuroenhancement of mood.

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