Human enhancement: Multidisciplinary analyses of a heated debate

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Technologies improve the way we do things. This is the case for one of the most widespread technologies of our time: the mobile phone. A simple cell phone memorizes things for us: we do not need to remember telephone numbers in order to call people because we carry a portable memory in our pocket. New generation smart phones enhance our communication abilities, enable us to synchronize our tasks and appointments, allow us to locate easily and quickly information, and offer us an abundance of entertainment opportunities in one device, always at hand. They make our planning, correspondence, and leisure more efficient and easier to be accessed. Mobile apps guide us around unknown places, supporting and substituting our spatial navigation skills. They allow us to arrange meetings with multiple people when we are on the move. They even decode for us the notes of a song and provide us with its title, replacing our lack of 'musical' ear. Furthermore, smart phones enable the use of apps that "open up a whole new world" for the blind and visually impaired by enabling these users to navigate with vocal and tactile clues, and to 'read' the value of paper money.[1] Mobile apps even recognize colours for the visually impaired user and alert her when people are approaching. The list of skills and capacities augmented or created by mobile apps could go on and on.

As many other technologies, smart phones support and improve our cognitive and physical capabilities and bring them to a new level. In this sense, they can be considered as 'enhancing technologies' since they produce "an increase in quality, value or power that can apply equally well to improving something that is deficient as to refining something

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that looks or works well".[2] Public, political and ethical debates on enhancing technologies, however, seem not to be concerned with smart phones, but they are rather centred on 'smart' drugs. Let's take the example of Ritalin (methylphenidate). This drug stimulates the central nervous system and reduces hyperactivity, while improving concentration. This is a desirable outcome for children affected by attention-deficit and hyperactivity disorder (ADHD), but also for university students who have to undergo an exam and want to increase their short-term memory and concentration in preparation of it. Besides the obvious worries about the potential side effects of using these drugs, questions arise concerning the fairness of using such substance in competitions, like exams: could it be considered that Ritalin users are cheating when competing at an exam with non-Ritalin users? Should universities control their use by including some restrictive measures, as for example drug tests before exams?[3] Other questions concern the rightfulness of prescribing these drugs to children or young adults diagnosed with ADHD because this alters their personal identity: isn't this drug equalising these young people to a standard average, reducing their creativity in view of a socially constructed standard of 'normality'? In shifting our attention from smart phones to smart drugs, several questions concerning the social desirability and rightfulness of these technologies arise: should we reduce, regulate or even prohibit technologies that enhance human capacities when they are used outside therapeutic purposes? It is when this normative question is asked that the human enhancement debate starts.

The discussion about the meanings and rightfulness of technologies enhancing human capabilities has been largely investigated by philosophy and ethics scholars.[4] Their contributions provide some philosophical, ethical and practical arguments in favour of or against

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[2] British Medical Association, *Boosting your Brainpower: Ethical Aspects of Cognitive Enhancements: A Discussion Paper from the British Medical Association* (London 2007) http://bma.org.uk/ap.nsf/content/CognitiveEnhancement2007 accessed on June 19 2010.

[3] http://www.telegraph.co.uk/health/healthnews/10150397/Drug-tests-before-exams-could-curb-students-Ritalin-use-academics-say.html accessed on June 19 2013.

[4] See among others: J. Savulescu and N. Bostrom (eds.), *Human Enhancement* (Oxford: Oxford University Press, 2009); B. Gordijn and R. Chadwick (eds), *Medical Enhancement and Posthumanity* (Dordrecht: Springer, 2010); B. Gordijn J. Savulescu, R. ter Meulen, and G. Kahane (eds), *Enhancing Human Capacities* (Malden: Wiley-Blackwell, 2011).

the use and distribution of more or less specific types of enhancing technologies. Some scholars take 'trans'- or 'post'- humanist perspectives according to which enhancement is not only natural, but also a moral obligation towards the human kind.[5] Other scholars, defined as 'bio-conservatives', express their uneasiness towards these technologies and warn about the dangers of altering human moral and social grounds as well as a pre-imposed natural order.[6] These polarized positions as well as the strong moral underpinnings that support them make this a sometimes (over-)heated and deadlocked debate fuelled by conceptual confusions.

The distinction between therapy and enhancement itself is, in this respect, exemplary. The definition of 'human enhancement' is still debated and scholars often refer to the distinction between *restitutio ad integrum* (reconstitution of human intactness) and *transformation ad optimum* (reshaping of the human being in a better way).[7] The distinction is often not meant to merely serve the theoretical purpose of creating definitional clarity between treatment (or therapy) and improvement; it is also implicitly used to depict a class of actions as morally unproblematic (therapy) and a class of actions as morally problematic (enhancement). The distinction has been criticized because of the blurred lines between therapy and enhancement as it builds on a presupposed vague notion of 'normal' health conditions. In addition, many of the ethical concerns explicitly put forward in the general debate on human enhancement, especially those in which notions such as unnaturalness, fairness, injustice, dignity *et cetera* are called upon, appear to be multi-layered and often overlapping with other arguments. In their clustered and compound guise, these conceptual complexities can easily obfuscate original intuitions or emotions of indignation, but also block possibilities of resolution and agreement. When they are

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[5] See for example: J. Harris, *Enhancing Evolution: The Ethical Case for Making Better People* (Princeton: Princeton University Press, 2007) and A. Buchanan et al., *From Chance to Choice: Genetics and Justice* (Cambridge; New York: Cambridge University Press, 2001).

[6] See for example: President's Council on Bioethics, *Beyond Therapy: Biotechnology and the Pursuit of Happiness*, 2003 http://www.bioethics.gov/reports/beyondtherapy/beyond_therapy_final_webcorrected.pdf accessed on June 19 2013; M. Sandel, *The case against perfection* (Cambridge, Mass, Harvard University Press, 2007).

[7] U. Wiesing, "The history of medical enhancement: from *restitutio ad integrum* to *transformatio ad optimum*? in B. Gordijn and R. Chadwick n 4 above. In the same volume, see also R. Chadwick, 'Therapy Enhancement and Improvement'.

meticulously analysed and reduced to their underlying constituents, these arguments often become more persuasive or at least manageable.

The debate around human enhancement is not only a matter of philosophical concern. During the last years, besides the academic scholarship, political institutions have also developed an interest in such debate. Several reports have been commissioned or funded by American and European institutions in order to make recommendations about policies and governance of technologies for human enhancement.[8] In these reports the major issues concerning human enhancement are addressed. In many of these contributions, several enhancing technologies are discussed together with the way they enhance physical as well as cognitive human capacities, and an ethical, social and/or legal analysis is carried out. Their objective is to offer substantiated recommendations for institutions to regulate these technologies in a socially desirable way. Although in some cases the debate itself or some elements of it are discussed or criticized,[9] a systematic analysis of the ethical, legal and social debate about human enhancement is at present missing. This means that, on the one hand, we have a heated debate that is a core interest of political institutions and, on the other hand, we have little reflection on the terms and concepts of this debate.

This volume aims to fill this gap. Its main goal is to provide an understanding of the debate on human enhancement, its trends,

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[8] M.C. Roco and W.S Bainbridge (eds) *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science* (Boston, Mass: Kluwer Academic Publishers, 2003); F Allhoff, et al *Ethics of Human Enhancement: 25 Questions & Answers.* (US National Science Foundation, 2009); Zonneveld, H. Dijstelbloem, D. Ringoir, (2008) *Reshaping the Human Condition: Exploring Human Enhancement* (The Hague: The Rathenau Institute, 2008); P. Miller and J. Wilsdon (eds) *Better Humans? The Politics of Human Enhancement and Life Extension* (London: Demos 2006); van Est et al, *Future Man - No Future Man: Connecting the Technological, Cultural and Political Dots of Human Enhancement* (The Hague: Rathenau Institute, 2008); C. Coenen et al. *Human Enhancement Study.* (Science and Technology Options Assessment (STOA), European Parliament, 2009)

[9] See: N. Bostrom and J. Savulescu, 'Human Enhancement Ethics: the state of the debate' in J. Savulescu and N. Bostrom n 4 above; A. Ferrari, A. Grunwald & C. Coenen 'Visions and Ethics in Current Discourse on Human Enhancement' (2012) *NanoEthics*, 6(3), 215-229; S. Lilley, *Transhumanism and Society: The Social Debate over Human Enhancement* (Dordrecht: Springer, 2013).

concepts, and assumptions. In this sense, the authors work on a meta-level, contributing to the discussion by analysing it, rather than by substantially adding to it. The goal of this volume is not to provide some arguments in favour of or against a particular position in the debate on human enhancement, but to map the debate itself, its arguments and conclusions, shedding new light on the traditional distinctions and assumptions. Such meta-analyses of the human enhancement debate are not drawn from one specific viewpoint, as it often happens in ethical/philosophical or policy oriented contributions. Instead, the collection of essays in this volume offers an examination of the debate from the perspective of different disciplines: law, ethics, philosophy of technology, cultural studies, science and technology studies, technology assessment and general regulation studies. Such a multidisciplinary approach, by offering new concepts and perspectives to discuss human enhancement, aims at opening up a space for a productive dialogue among a plurality of positions beyond the polarization of the current debate.

The volume consists of nine essays distributed in three groups. The first group of essays engages in an exploration and understanding of the philosophical debate on human enhancement by eliciting the philosophical assumptions and metaphors that characterise this literature. In his essay "Enhancement and the Vulnerable Body: Questioning some Philosophical Assumptions" (chapter 1), Mark Coeckelbergh explores the current debate on human enhancement polarized between 'bioconservatives' and 'transhumanists' and articulates some significant philosophical assumptions shared by both positions. In pointing out the limitations of these approaches, his paper shows that there is space for a third more nuanced alternative that takes into account how technology transforms vulnerable bodies. A critical philosophical analysis is also offered by Anton Vedder who points out some of the conceptual complexities that characterize the debate on human enhancement. In his essay "Human Enhancement on the Slab" (chapter 2), some steps to untie these conceptual entanglements are offered and discussed. In chapter 3, Bert-Jaap Koops writes about "The Role of Framing and Metaphor in the Therapy Versus Enhancement Argument". In his paper, he analyses the way in which frames and metaphors are used in the academic human enhancement literature in order to shed light on how language can influence policies and regulations for human enhancement.

The second group of essays explores how the debate on human enhancement could benefit from the dialogue with other philosophical debate. Caroline Harnacke, in her essay "Discussing Enhancement and Disability Together" (chapter 4), explains how the enhancement debate can benefit from insights of the disability debate and articulates some assumptions about the concept of 'human being' used in both debates. In chapter 5, Antonio Carnevale and Fiorella Battaglia focus on one of the two poles of the problematic distinction 'therapy or enhancement', namely on 'enhancement'. In their paper, entitled "A 'Reflexive' Approach to Therapy-Enhancement Distinction: Some Philosophical Considerations", they argue that in order to tackle the normative question on human enhancement, societies need to address several aspects of human conditions that are concerned in human enhancement (ethics, politics, legality, morality, etc.) Consequently they build a theoretical framework in which contributions of cultural studies, anthropology and social theory are combined in a comprehensive systematic position that goes beyond cultural struggles between supporters and detractors of human enhancement.

In Chapter 6 entitled "If You're Smart, We'll Make You Smarter", the authors, Bas Olthof, Anco Peeters, Kimberly Schelle, and Pim Haselager, try to contribute to the clarification of the debate on human enhancement by examining the often made distinctions between cases of enhancement deemed problematic and cases deemed unproblematic. They analyse one form of what they deem to be an unproblematic case of cognitive enhancement in particular, in order to make explicit some underlying assumptions in the human enhancement debate.

The third group of essays scrutinizes the human enhancement debate outside of the academic philosophical and theoretical domain, to which it so often seems to be confined. The essays in this cluster discuss the uptake of the therapy-enhancement discussion by the broader public, in the engineering world, and within the legal sphere. In chapter 7, Mirjam Schuijff and Frans Brom move the focus from what philosophers, ethicists and lawyers claim about human enhancement to what citizens and organizations representing citizens think about these topics. In their essay, "Citizens on Human Enhancement in the Netherlands" they discuss citizens' attitudes on human enhancement by involving them in the debate using focus group research. Kevin

Warwick and Huma Shah in their essay on "Selective Brain Stimulation Through the use of AI" (chapter 8) consider the issue of human enhancement in terms of a practical case study, essentially taking an engineering perspective. The broad objective of their essay is to offer a solid concrete ground to philosophical considerations on human enhancement by offering some reflections based on the state of the art in selective brain stimulation. Finally, in chapter 9, Susanne Beck and Benno Zabel, focus on the legislator who has to enact laws on fundamental developments in brain manipulation and human enhancement. Their essay, "Legal Restrictions of Enhancement: New Paternalistic Tendencies?" addresses some questions – at the theoretical as well as pragmatic level – that have to be answered to reach this goal and explains some legal questions about criminalising neurotechnologies. The authors consider some questions of paternalistic legislation and legislation to preserve normality in the frame of the human enhancement debate.

This volume originated from the 'Neurotechnological Interventions: Therapy or Enhancement' workshop organized in November 2012 by the Tilburg Institute for Law, Technology, and Society (TILT) of Tilburg University under the banner of the EU funded RoboLaw project. This project aims to explore the regulatory challenges of European institutions facing innovative robotics technologies. Due to the fact that many regulatory concepts (for example the ones concerning disability and fair opportunities) are profoundly challenged by emerging robotics for prosthetics, function restoration and cognitive enhancement, a theoretical and philosophical analysis is needed. This workshop gathered in Tilburg a diverse group of senior and junior researchers addressing questions relating to the human enhancement debate from different disciplinary perspectives.