Chapter 23

REFLECTIONS ON ENHANCEMENT AND ENCHANTMENT A CONCLUDING ESSAY

by Theo A. Boer

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Progress

Hardly any other generation has seen the amount of scientific and technological progress that we have seen in the past thirty years. Virtually everything humans use has been made better, safer, faster, more efficient, more sustainable, and more affordable – be it cars, screens, computers, communications, kitchens, airplanes, sunglasses, diagnostic devices, coffee brewers, building constructions… Among the exceptions are things we expect to remain as they were, ranging from Cuban cigars, Coca Cola Classic, and Grandma's apple pie recipe to nonmaterial goods such as literature, art, antiques and liturgy. For most other goods, especially consumer goods, characterizations such as, 'new formula!' and 'energy efficient!' encourage us to buy new generations of products, even if many of these claims are excessive, and even if the old products still work.

Mundus vult decipi, ergo decipiatur – the world wants to be deceived, so let her be deceived. Our generation has grown up in a world in which the continuous improvement of virtually everything we use is a law of nature. Janne Nikkinen explores this vocabulary of progress in his contribution to this volume. It seems that a scenario of setbacks or even regress, and the thought that progress will one day come to its limits, is as intolerable to us as we think it is unrealistic. In the midst of the undeniable, unprecedented, and blissful technological progresses made, there also is a lot of deceit and self-deceit – witting or unwitting. One of the reasons for unfounded expectations is a tendency to base our predictions on observations from a fairly recent past. In the late 1990s, before the burst of the Dot-com bubble, a combination of rapidly increasing stock prices, market confidence that the companies would generate future profits, individual speculation in stocks, and widely available venture capital, created an environment in which many investors were willing to overlook traditional metrics in favor of sheer unlimited confidence in the advances of ICT-technology. Individual investors were so convinced that this process would continue that they financed high-risk investments with borrowed money. When the bubble burst, numerous investors lost the greater part of their investments. We have witnessed similar hypes in banking, on the housing market, and in national economies.

Clearly, the mandatory warning made to would-be investors – "past performance does not guarantee future results" – is more than a phrase. It addresses the persistent human

propensity to base conclusions about the likelihood of future success on short term evidence, selective statistics, and wishful thinking. In the real world, there are bound to be technical setbacks, more serious side-effects than anticipated, funding difficulties, fading public support and, last but not least: we may simply not be lucky enough to register the expected technological successes. The term 'human enhancement' implies the suggestion that a world full of opportunities for human flourishing is waiting 'out there', if only we are patient and cooperative enough. Interestingly, as Boer and Dekker observe, the notion of 'enhancement' seems to occur more frequently in debates about science and technology than it does in publications stemming from science and technology.

Definition

We need to discuss human enhancement issues in the most balanced way possible, and this is what the 25 authors in this volume have in mind. But a persistent problem in any discussion about human enhancement is the absence of unanimity about the concept and its content. An extra complexity is that any definition includes implicit or explicit evaluative notions which give the term a double function: a referential function (describing facts) and a prescriptive one. More 'neutral' terms used for some of the same technologies, such as 'genetic modification' and 'converging technologies' do not have this disadvantage. Donald Bruce, as in an earlier document issued by CEC, describes human enhancement in terms of "an aspiration to use technology, to make functional changes to human characteristics, abilities, emotions and capacities, beyond our current physical limitations." Another definition describes human enhancement as "the use of biomedical technology to achieve goals other than the treatment or prevention of disease," and a third as "any attempt to temporarily or permanently overcome the current limitations of the human body through natural or artificial means." In the latter definition, there is no reference to using technology only (enhancement can also take place by using 'natural' means), nor is there a prerequisite that the changes should be permanent.

Clearly, then, umbrella definitions that are so broad that they can refer to any successful attempt to overcome human limitations – even sunglasses or thermal underwear – are of little use. The definitions used by the CEC document and by Donald Bruce are both more restrictive, more usable, and more thought provoking than some more general alternatives. By including concepts like 'normal' or 'natural,' the normative meaning that is already implicit in the term 'enhancement' is further strengthened. One may criticize this normative approach – as Peter Dabrock does, for example: by this definition a number of implicit and debatable normative assumptions may be smuggled in. However, as Christopher Coenen and Ruud ter Meulen argue, we need a definition that can be used for policy purposes and this may imply the use of normative notions and choices. Ter Meulen refers to the utilitarian philosopher John Harris who argues that the only thing that matters is the consequences of human enhancement for wellbeing. Ter Meulen

concludes that such a vague focus on the beneficial effects blurs the distinction between therapy and enhancement and makes it difficult to develop any policies regarding human enhancement. From a European perspective, developing guidelines is very important, as also Doris Wolfslehner advocates in her chapter. Hence, it seems that we cannot do without the undeniably problematic distinction between technologies that seek to restore 'normal' functioning and others that seek to change our definition of 'normalcy.'

What is New about 'Human Enhancement'?

One of the key obstacles to finding an acceptable definition lies in the term 'enhancement' itself. What is it supposed to convey compared to alternative terms? Is the term 'enhancement' equally pejorative as, for example, the term 'heaven'? Or does, on the contrary, the term function as a warning signal, carrying a negative connotation similar to a term such as 'doping'? The latter seems doubtful: hardly anyone would argue that improving the conditions for human wellbeing is problematic or wrong in itself. Improving things for the benefit of humanity is what humans have been doing for ages! If the term 'human enhancement' is just a new term for an old tradition, there are no novel ethical issues. Neither is it a novelty that new technology brings new side-effects, risks, costs, and distributive concerns. These just have to be dealt with responsibly. So, again: what is new?

Probably the striking feature in this case is the combination of the term 'enhancement' with the adjective 'human.' It may or may not be intentional, but the adjective 'human' can refer both to humans as subjects and as objects of enhancement. The suggestion is thus that for the first time in history humans will not only be the subjects but also the objects of technological interventions – humans making better humans. Not only will things around us be improved, but our very selves will be made better.

All kinds of questions arise. It is as if the term has been deliberately chosen for the purpose of causing debate. Do we as humans have the powers to take our destiny into our own hands? And if so, who is setting the standards for goodness? As Donald Bruce observes, "the proposal of human enhancement is meaningless without some concept of normalcy as a base from which enhancements are supposed to 'improve'." Most religious people assume that the ultimate measure for goodness is not made by humans, but rather discovered by them. Whether this knowledge is accessed through natural means – reason, convention, nature, intuition – or special revelation – the Bible, the religious community, prayer – is not the most important question here. The crucial question is whether or not the standards of goodness are set by the humans that are engaged in the enhancing. Within a realistic theology, i.e. a theology that assumes the existence of a God independent from human constructions and imaginations, the ultimate gauge of goodness comes from God. Hence, any redefinition of standards of goodness, especially human goodness, should also in some form originate from God: God the creator, God the sustainer, God the redeemer.

Theosis

In this volume, the most direct link between human enhancement and Divine creation (and re-creation) is found in the contributions from Orthodox communities. Real enhancement, it is argued, should be understood in a theological and ontological way. Humans are called back to the union of divine and human that was intended in the creation and destroyed by human sin. His Eminence Metropolitan Emmanuel of France, for example, stresses that in Orthodox thinking the Garden in Eden is understood as the inner space of the human being, in whose heart stand the tree of knowledge and the tree of life. The two trees are distinct but not separated. In the tree of life – the symbol of *God's desire* for the human being – the sap goes down from God to the human being; in the tree of knowledge – symbolizing the *human desire* for God – it goes up from the human being to God. The accomplishment of the human being is the fruit of the encounter of these two desires.

In the Orthodox contribution of the Romanian scholars Stefan-Ioan Stratul and Constantin Jinga, there is an impressive closeness between 'enhancement' and the theological conception of *theosis*. Theosis refers to the human potential to reach perfection. The concept was anticipated in ancient Greece and was further developed by Christian writers in the sense of a unification of Creator and creation. True human enhancement, in other words, takes place when the divide between humans and God that is the consequence of sin has been bridged. From this same starting point, the Greek Orthodox neuroscientist Stavros J. Baloyannis welcomes the achievements of research and technology, as long as they are "beneficial for the physical, mental and spiritual harmony of the human being for the glory of God and the sanctification of the life."

Knowing Ourselves – and God

Also other contributions make attempts to link the human quest for scientific and technological progress to God who is the source of all our values. According to Donald Bruce, the Christian context that human life is lived primarily in relationship to God and to others sets up a distinction between enhancement for our own independent exaltation, and our enhancement under God for the glory of God. Ulrich Körtner argues along the same lines when he extends the well-known saying above the entrance to the oracle of Delphi, *'gnothi seauton* – know yourself! ' to ' knowing yourself – before God.' "The question," according to Körtner, "is not whether or not we should totally reject human enhancement, but the question is which forms of conduct accord with the confession of creatureliness in the image of God, and which forms of conduct contradict such a confession." According to Körtner, "interventions in the natural state of the human body can be in accordance with, as well as contradict a confession of faith in God." In line with his Protestant tradition, he advocates a new approach to the creatureliness and image-of-God in human beings. "This new approach is opened up, not by a resacralization of nature, but by a justification-oriented theological reconstruction of the doctrine of creation: the

right to imperfection. Christian anthropology does not measure the person according to a generalized idea of the human and its ideal form. Rather it measures on the model of the suffering and crucified Christ, who 'had no form…that we should desire him.'" The old human being, in the biblical view, is not in need of improvement but of forgiveness. Boer and Dekker follow along the same lines. They refer to a dialogue between *Brave New World* administrator Mustafa Mond and the 'Savage,' one of the few remaining non-enhanced humans left on the planet. Contrary to Mond's contention that humans should be happy, the Savage claims the right to be unhappy and imperfect.

Bridging the Gap

From a Protestant perspective, Brendan McCarthy formats the debate on human enhancement in terms of solving tensions. He argues that many tensions in the field of new technology can be described in both 'secular' and 'theological' language. For example, the broadly felt tension between 'nature' and 'human intervention' finds a theological expression in the tension between 'stewardship' and 'co-creation.' Likewise, the tension between pessimism and optimism is, theologically interpreted, a tension between 'Fall' and 'Creation.' McCarthy concedes that, by choosing this vocabulary, Protestant Churches can be criticised for presenting a fractured witness to society. However, this may make Protestant churches well placed to draw alongside our diverse societies in their quest better to understand and to apply techniques and technology associated with human enhancement. Other contributors, like Schardien, Schmidt, and Dabrock make the same claim: churches must be able to engage in public theology.

Perhaps surprisingly, most authors in this volume are not opposed to human enhancement *per se*. The debate, which has been dominated very much by the dichotomy between transhumanists and 'doomsday prophets,' is more nuanced in this volume. This may, in part, be due to the diffuse character of the term, 'human enhancement.' It may also have to do with the fact that one can hardly be categorically opposed to improvements. Many contributors explicitly affirm the human responsibility to develop technology and science. Rabbi Guigui, for example, says that in the Jewish tradition science is the expression of a duty, the duty to know, which stretches the physical world into the metaphysical world. According to the Islamic scholar Omar van den Broeck there is "no compartmentalization between sciences; no division between sciences and their applications; no division between ethics and science; and no division between ethics and religion. The highest goal is not happiness but to serve God." He and many others deliberately leave open which forms of human enhancement can be justified and which not.

Factual Effects of Enhancement

Pivotal in many discussions on human enhancement is assessing and weighing the different effects. We may for this purpose distinguish between two sorts of effects. First, there are

the factual effects of technological innovations on the lives of humans. We can describe them in terms of the intended positive effects for human functioning, life expectancy, health, and wellbeing. In the contribution of Boer and Dekker, the Delft nanoscience professor Cees Dekker reports some astonishing achievements in the field of brain-machine interfaces. There are also the unintended positive side-effects: Springer-Kremser, Ter Meulen, and Körtner refer to the so-called off-label uses of medicines: medication which enhances the lives of patients in a way that was not anticipated originally. Henriette Krug discusses deep brain stimulation in the case of Parkinson's disease. She reports that some of the patients that were treated were gladly surprised by the positive side effects that were not originally expected, and found their moods and emotional lives 'enhanced.'

Perhaps typical for any moral discussion on something new is the interest in the potential negative side-effects. This volume is no exception. Even those who are predominantly positive about human enhancement do not ignore the possibility of serious and irreversible side-effects. Some authors are especially cautious. The Serbian Orthodox bishop Perovic, for example, calls the planned destruction of human embryos a 'monstrous act.' Rabbi Albert Guigui expresses a deep fear that as a consequence of the instrumentalization of human life, we may in some future once again see the planned destruction of groups of people. Anestis Keselopoulos, in his contribution about plastic surgery, accentuates the concerns of safety and risks of this procedure. He points to frequent side-effects and infections of plastic surgery, which in some instances have even led to death. Rabbi Albert Guigui interprets these adverse side-effects as 'nature taking revenge.' Many contributors also express the fear that human enhancement is inevitably fraught with societal inequalities. Ulla Schmidt, for example, explores the question that enhancing technologies or substances are what some call 'positional goods,' being valuable only to the individuals who pursue of attain them. Moreover, they obtain their value to the extent to which they are shared only by a limited number of people. In fact, this is a major concern: what if the new technologies that many of us help to fund and promote so enthusiastically, end up leaving us with a competitive and oppressive Hobbesian society? And, to follow a suggestion of Keselopoulos, what if human enhancement technologies are simply too costly to justify in a world in which there is so much poverty?

To describe all these positive and negative effects, Doris Wolfslehner and Stefanie Schardien suggest the use of the four principles developed by Tom L. Beauchamp and James F. Childress. Wolfslehner calls these principles 'markers of human rights': respect for autonomy, care for wellbeing and integrity, caution with respect for damage done and risks taken, and a concern for the equal distribution of benefits and burdens. Clearly, a lot can be said about these effects. In this concluding reflection, we will be concise. All contributions in this volume focus in one way or another on the different effects.

Effects on our Self-Understanding

Secondly, there are the effects that human enhancement may have on our self-perception as humans. If we become able to drastically improve not only our living conditions but also the quality of our genome, this will probably boost our self-confidence as humans. Humans may come to consider themselves (or their political and academic leaders) as the guardians of the human species. Interestingly, this effect can occur even when technologies themselves do not have the expected results: the mere focus on the development of human enhancement technologies may foster a cultural optimism. With or without good reasons, technology and the pursuit of human enhancement can lead to *hubris,* pride. In different ways, several authors refer to the Biblical narrative of Babel in which citizens of a highly developed and highly ambitious culture make a desperate attempt to reach up to the skies.

Are we ignoring the Real Problems?

A number of authors are not so critical about human enhancement in itself, or its dangers and pitfalls, as they are about the discussions accompanying it. First, there is the question whether the entire debate about human enhancement may not be a 'non-discussion,' the result of an occasional liaison of transhumanists and doomsday prophets. The former welcome the dawn of a new human species; the latter lament the demise of true humanity. Interestingly, thus, the antagonists agree that human enhancement will be able to put humans on the threshold of a new era. Peter Dabrock and others speak about an unhealthy preoccupation of churches with questions of enhancement, taking too seriously the transhumanists and their unrealistic expectations. More nuanced voices in the middle are at risk of being pulverized between the extremes.

Another objection about the way discussions about enhancement take place is that our attention is diverted from other, much more pressing moral issues. Donald Bruce, for example, asks: "[W]hat is the real point of human enhancement, when we are faced with the combination of climate change, water and soil loss, food insecurity, disease, poverty, and a growing disparity in human wealth and health between haves and have-nots? In an already divided and unjust world, social injustice is perhaps the biggest single ethical and theological objection to enhancement technologies." Peter Dabrock makes a similar point when he argues that the real question behind the enhancement debate may stem from our incapacity to deal socially with performance requirements in modern society: "I tend to believe that there is not primarily a spiritual or ideological issue behind the enhancement question. Rather this whole debate is a surface manifestation of a deep social crisis. The churches, at least those that take seriously the biblical message of God's faithfulness to the people and its preference for the disadvantaged, should turn away from the sideshow and turn towards the serious social problems." From a European Union perspective, Ruud ter Meulen sustains this point by arguing that the fight against discrimination and for the

inclusion of people with disabilities is an important goal of the European Union and should be part of policy-making with regard to human enhancement. We need to get away from the limited perspective of safety, risks and precaution, and should include issues such as justice, solidarity with marginalized groups, prevention of exclusion, and protection of privacy.

There may be other neglected concerns in the enhancement debate. The psychoanalyst Marianne Springer-Kremser suggests that the use of enhancing drugs may well prove to be a fake solution for the real problem. According to her, the call for enhancement is sometimes a cry for help and some psychiatric illnesses may have to be treated not with drugs but with psychotherapy. Janne Nikkinen points to the fact that alcohol is the third leading factor in disease and mortality in Europe, after tobacco and high blood pressure. For these top three health problems, argues Nikkinen, nano-biotechnology or human enhancement may have little or nothing to contribute to treatment and prevention.

Enhancement and Survival

Are discussions on human enhancement a sideshow? We do indeed need to take into consideration the economic, monetary, and societal developments since 2007, and their far-reaching effects on political discussions. The ongoing economic crisis in Western economies, which erupted fully in the autumn of 2008 and is raging as we write, is a compelling reason to focus our attention on more urgent concerns than speculating on technologies that may make humans better. For many people in affluent societies, the question is not 'how to make life better.' It is how to survive in a dignified way. Unemployment has reached staggering dimensions in some countries, cuts are being made in pensions and social security payments, the post-war baby boomers are gradually leaving the labor market and entering the 'market' of institutionalized care. *Zuerst das Fressen, dann die Moral* – "food is the first thing, morals follow on" – is a famous saying of Bertold Brecht. In our context it should perhaps read, "food is the first thing, enhancement follows on."

'Human Enhancement' – Goodbye to a Term?

A further interesting point raised in this volume is the switch described and advocated by Rinie van Est and Mirjam Schuijff from a focus on enhancement within the body to technologies outside the body. Reading between the lines of their analysis and those of others in this volume, we can observe a growing awareness that genetic enhancement may not be within reach in the foreseeable future. Perhaps the highest attainable results to be expected are the fruits of an increasing interaction between technology and biology. In that case, however, it is doubtful whether we can speak of enhanced humans at all. Using cochlear implants in the twenty-first century does not make better humans any more than using glasses did in the centuries before. True and lasting enhancement, it seems, would

be achieved if scientists succeeded not only in helping humans to perform better, but also managed to anchor this ability in the human genome by using germ line modifications. Only thus would there be a chance that improvements would be part of the genetic constitution of future generations of humans.

The manifold and promising technological developments in the past two decades have set the stage for fierce hopes and grand expectations. Those who have watched this play for the past ten to fifteen years may conclude that it was more a play of human enchantment than of human enhancement. Perhaps we should abandon the vocabulary of 'human enhancement' altogether. There are more sober and less overwrought alternatives. If the term were to fall into abeyance in the near future, this would be for a number of reasons: there is no consensus about its content; it raises fears and hopes beyond what can be scientifically substantiated; it raises theological questions connected to concepts such as 'sin,' 'image of God,' and 'playing God'; and it raises philosophical questions connected to concepts such as 'goodness,' 'nature,' and 'normalcy.' Let scientists in the meantime continue to develop converging technologies for improving our performances and our living conditions. There are many technological and societal problems to solve, and there are urgent theological and moral reasons to do so.