# Posthuman Horizons and Realities: Introduction

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Even though Homo sapiens during the last century and a half have, by and large, come to terms with being the result of a long and amazing evolution, until recently there has not been much speculation about the future prospects of humanity as we know it. The pace of Charles Darwin's evolution by natural selection is very slow and what the successors to this most-advanced species may turn out to be has been too speculative a question to really matter. However, in the past two decades, this perspective has shifted as a number of astounding technological developments have taken place. These developments have the power to completely overturn human evolution from its dependency on unplanned mutations and natural selection to an artificial evolution where conscious decisions and technological design matter more – thus setting the direction for an array of minor and major changes in both the human as well as other species. This shift promises a profound transformation of humanity and society as a whole, indeed of the entire life of our planet, and thus it has received a quite dramatic name: the posthuman.

The interdisciplinary field emerging around the idea of the posthuman had a less radical forerunner in posthumanism, a movement already imploding the anthropocentric perspective of the humanities since the 1960s: either negatively as an anti-humanistic deconstruction of the idea of the human subject, or positively as an ecological orientation focusing on life in all its varieties (Badmington 2011: 374). The posthuman thus signifies a move from posthumanism's agenda, which was purely conceptual, to a mixed field of theory and practice where interventions of biotechnology supposedly will change the human species to something clearly separate from the human being we know. An intermediate step towards such a development is often referred to as "transhuman" which signifies individuals that bear strong non-human traits, as for example cyborgs or chimeras (Savulescu 2010: 214). Although this notion concerns a passage in which the prosthetic enhancements of the body have not yet dissolved the idea of the human subject altogether, the transhuman is to an even greater degree than the posthuman permeated by utopian expectations.

Prior to 1990 the term "posthuman" was rarely used, and even though science fiction and futuristic philosophies of technology have conjured up numerous visions of new humans, the idea of a radical change in life conditions and essential traits of the species did not set a broader agenda. In the past decade and a half, however, it has become a thriving subject where very different approaches and visions intersect and where science and medicine as well as philosophy, law, art, literature and psychology all contribute with unique perspectives. It is a field that deals with both imminent uses of new technologies and more long-term conjectures about the human species. In both cases it produces scenarios that test the limits of what is commonly considered ethical.

The posthuman essentially revolves around the key ethical dilemmas made acute by technological advances. In spite of recurrent doubts in many parts of societal debates as to whether technology actually improves civilization or not – from the ancient myths of civilization's technologically conditioned decadence to Theodor W. Adorno, Maurice Merleau-Ponty and Martin Heidegger's pessimistic notions of rationalistic technology colonizing the life world – it is a widely held belief in parliamentary politics, 'third world' development strategies and large parts of popular culture that most of the options technology facilitates are beneficial: that longer lives, better health, and accelerated actions are desirable. This confidence in technological progress is a significant heritage of the Enlightenment thinking, and in many ways it runs smoothly together with other aspects of the optimistic view of humankind's progressive evolution.

However, turning to the inherent rights for every human being expressed in the UN's Universal Declaration of Human Rights (1948), the question is how progression towards a *posthuman* universalism can coexist with the idea of every human's value as expressed in the declaration. Are individuals with an even higher dignity possible? Or is it so that human dignity is corrupted by biotechnological enhancement of the human body? In a recurrent reference in this book, *Our Posthuman Future* from 2002, Francis Fukuyama has no doubts. Drawing upon dystopian visions such as those put forward in Aldous Huxley's *Brave New World* (1932), Fukuyama insists that certain core values of the human subject are so complex and irreducible to simple dogmas that a biotechnological attempt to alter their foundations could lead to disastrous results (Fukuyama 2002: 218).

It seems reasonable to not only relate Fukuyama's worries to a distant future, but to keep the issue in mind even today. A number of biotechnologies have already presented us with a range of bewildering ethical questions, and promise to do so even more comprehensively in the future. The most important are the following developments: *The advanced diagnosis of genes*, which will affect which foetuses will be allowed to grow and enter the world as humans. Some selections will be seen as generally permissible, whereas others will be seen as a step towards intolerance

and dehumanizing. *Advances in medicine* will likely create the possibility of better health and longer lives, but could also lead to shortages of access to treatments and a risk of an even greater divide within societies and between the more and less developed countries. *General longevity* will rise, and this process will increase the proportion of elderly people in society significantly and provoke questions of life quality in old age: What is a human life and is longer necessarily better? Another important development is the ability to make *spare body parts*. This already greatly advanced field is one in which necessary concerns will most likely query the limits of our (known) authentic human subject. Likewise, the *interaction between humans and machines,* increasingly seen in e.g. the treatment of deafness and the enhancement of disabled people's motor skills, could, when and if used by people with no disabilities, dissolve the borders between the autonomous human and its surroundings. Questions of *genetic engineering* now taking place on a small scale could quickly expand and spark dizzying ethical implications with for example three would-be parents use in an attempt to eliminate the risks of inherited diseases. In many other instances the therapeutic ends of this procedure are generally considered justified, whereas attempts to make enhancements are viewed sceptically. As a final development we see how the possibility of *cloning* humans technically is within reach. This is obviously closely connected to a whole host of challenges of technical risks – as well as questions of moral respect for humankind as a species.

It is, indeed, fair to guess that many other techniques and dilemmas, now barely imaginable, are waiting in our horizon. Although the idea of a human essence in a Platonic sense has largely been given up philosophically, all these techniques ironically bring something like this essence to the fore again. However, its contours are not easily seen. Rather, the human constitutes a hazy shell confronted with imperatives of using technology to strengthen the human species *and* warnings about doing so.

## The limits of knowledge and key conflicts

Advances in technology are the driving force behind the agenda of bioethics and the posthuman horizon, but the numerous uses and side-effects are so far-reaching that they affect almost every discipline – and with questions that can be answered from very different angles: Can beauty be part of a moral argument concerning choices one wants to make for oneself as well as for others? Is societal cohesion a valid reason for restricting the freedom of the individual? Would societies with huge differences in life expectancy be acceptable? How much of a 'cyborg' would we allow an individual human being to become? Nature clones – but can we? And of course, who are the "we" that should decide? The pervasive nature of such ques-

tions, coupled with the uncertainty of future developments, means that this field comprises a number of different research domains.

Immanuel Kant's tri-part division of questions into "What can we know? What ought we to do? For what may we hope?" is informative in order to show the complexities of the subject (Kant 1974: 677). First of all, what can we know? There are many predictions that involve huge uncertainties, from the effects of certain technologies to the way human identity and societal development will play out. The great variation in the precision of previous predictions of the future suggests that making projections about the future based on present conditions is a very risky thing to do. On the other hand, there are so many technologies that are already being implemented and so many experiments being carried out on animals and humans that a whole array of developments could be predicted based on those with which we are already familiar. Also, we have already seen a number of somewhat bizarre constellations of human-technology enhancements, which now may seem superfluous but which in a futuristc perspective greatly expand the possible field of evolutionary diversity and selection.

Obviously, Kant's question of what is (ethically and morally) right to do is in many ways the most complex to answer. The dilemmas presented above are echoed in the schism between technophilia and technophobia: whether human evolution and progress is something that should be striven for with all means at hand, or whether the complexity is too dense to even initiate. Perhaps it would be better to leave the matter out of human hands, but, as implied in the outline above, this argument is essentially untenable and irrelevant today, where the complexities of the uses of technology cannot rightfully be reduced to a matter of total inclusion or exclusion. A number of enhancing technologies already exists today, and the either/or reduction is not a choice: enhancements are a matter of degree. Today the general approach to the implementation of new technology is cautiousness with a strong focus on therapy rather than enhancement. But is this middle way between rejection or even reluctance and embracement the right way to proceed – also from a moral standpoint?

Finally, as new possibilities arise, the focus of Kant's question of what we may hope for changes. Often the answers gravitate towards what *not* to hope for, as portrayed in many dystopian novels, films and in other arts. Again, this is a field where the difference between the grand visions of a very different future can seem unattached to small steps towards better living conditions, but when examined more closely, the accumulation of many small steps could end up with a situation not hoped for. Hence the difficulties in articulating a valuable political stance that encompasses the many conflicts – while knowing that a strong political stance is indeed necessary.

In this volume the approaches taken to the many dilemmas and conflicts of

the posthuman condition range from probing technical possibilities and artistic visions to examining ethical problems and exploring political considerations. Four conflicts are in focus throughout. Divided between analytical and ethical concerns, these conflicts include (1) the gradual nature of changes, (2) the kinds of changes that are possible, and at what speed they arrive, (3) individual freedom and societal cohesion, and (4) human nature and future identities.

(1) Technology changes the conditions of human existence in various dimensions. Some changes may not produce anything that would be considered posthuman, since the technologies involved are embodied but do not become fully integrated parts of the body. Similarly, the engineering in question, for instance in genetics, takes place on a small scale with no perceptible immediate consequences for our everyday experience.

Even if the link between artificial and natural is still not strong enough (or the scale is not large enough) to seriously make us question whether someone is a cyborg or a human, such uses are part of a shift from a qualitative idea of human anatomies as strictly natural to a *sliding scale of change*, in which technologically modified human bodies may constitute something beyond the human. If genetically engineered or modified individuals were to become the norm, even for the purpose of avoiding inherited diseases, would that signify a break with humanity as we know it? Would enhanced humans be humans if they were to acquire significant other features such as a double lifespan, almost perfect memory and a vastly improved intelligence?

(2) What changes are possible – ranging from minor but perhaps not wholly innocent changes such as improved eyesight, to radical changes of the human DNA or the *de facto* migration of humans into non-biological life, as futurist Ray Kurzweil envisions in *The Singularity is Near: When Humans Transcend Biology* from 2005? The question is intricately bound up with a temporal dimension, a horizon of expectation: When do the posthuman techniques actually take over? Both the short-term and the long-term scenarios are important here, as they both influence policy making.

In the temporal perspective one could distinguish between two kinds of technological scepticists. One scepticist, the pragmatic, would argue that technology does not keep its promises and that the cloning of people, the uploading of entire brains or "merely" cures for deadly diseases are not as imminent as one could be led to believe, but that they would be welcome. Thus, even if promises are not kept, the path towards partial gains should still be followed. Another scepticist, the full-grown one represented by Francis Fukuyama among others, would on the contrary celebrate such broken promises because this scepticist does not believe technological opportunities can bring advances for humankind, given the complexity of human existence.

(3) Entering more explicitly into the ethical dilemmas, one conflict is between

individual freedom and societal cohesion. Many scenarios of human evolution consider the possibility of the co-existence of humans and posthumans. Imagine the above-mentioned society with differing aging possibilities – say, where some people live four or five times longer than the majority – and how that would affect ethics.

A more immediate impact of conflict between individual freedom and societal considerations lies in the use of prenatal analysis, which is bound to become more complex and wide-ranging. Two cases illustrate how this affects societies today. In societies where boys are generally valued more than girls, there have been astonishing and unnatural discrepancies in birth rates between the sexes: no less than sixty percent more male births than female births have been reported in parts of China. This creates significant issues not least for adult men who cannot find female partners, while rising crime rates also have been reported.

The effects of such interventions are not limited to what doctors do to foetuses, but transmit to how entire societies cope with new situations created by widespread use of technology. If extensive genetics analysis and selection were to become widespread, it could very well alter general perceptions of what is natural and what is valuable. However, it is also possible to imagine that tolerance would grow even if the band of the normal becomes narrower.

(4) Finally, the question of human nature and the future identities of humans is ubiquitous in the debate. Many posthuman technologies involve benefits as well as risks, and while it should not be forgotten that this is true of existing technologies as well (e.g. burning coal has benefits but also risks such as irreversible and harmful global warming), the intrusion into the very bodily existence of humans makes a difference to most people. Art and literature have long provided numerous examples of scenarios that imagine alternative visions for humans, just as artists themselves have invested their bodies in experiments with new technologies. Even if the idea of human identity has been challenged, it is still at the centre of many reflections on values and universalism. The posthuman horizon only attracts more attention to the grounds on which human identity is founded or constructed.

Humans are complex beings who cannot easily break away from what their genes have allowed them to become – although their cultural software may be very adaptable. But the new sense of a greater control or promises of control have set a new agenda for considering what human nature is, if it even makes sense to talk of a "nature". In any case, there will be visions of selfhood and identity that will be nurtured and evolved, but in which direction? No one – neither the natural scientist nor the humanist nor the layman – has the answer.

## The articles in this volume

This book is divided into four sections. "Technological scenarios" deals with both the near future and long term visions of changes. "Ethical dilemmas" addresses different cases that highlight the complexities of making clear-cut decisions of what is right and wrong. "Artistic responses" provides three examples of how art and literature contribute to the envisioning, and perhaps even practice, of the future of humanity. Finally, "Political responses" delivers three conflicting arguments on how societies should react towards the technological possibilities.

(1) Technological scenarios

As described above, the question of the posthuman is entangled with a number of different technologies that either already influence our world or may well do so in a near future. There is a great leap from improved medicine to the creation of cyborgs or genetical modification, but there is also a continuum in which the uses of the available technologies are just as important.

Chris Hables Gray opens the volume by addressing the interactions between man and machine which produce hybrid beings known as cyborgs. Gray's view is that it is essentially human not to be at home in our bodies, thereby adopting a point of departure which is very different from the typical assumption that machines are alien to the natural body. Evoking a long view on human existence, he suggests that we see man's integration with technology as a consequence of the social foundation for the rapid evolutions of mankind's capabilities in the past 10,000 years. A more evolved awareness of what Gray terms "cyborg citizenship" is thus a precondition for an inclusive and reflected use of the technologies that are continually being put into use in human existence.

This generalized view of the cyborg stands in striking contrast to the escatological expectations found in many places in the current debate on transhumanism. As demonstrated in Maxwell Mehlman's contribution, the question of immortality is central to the hopes of transforming humans through genetic engineering. In the transhumanist rhetoric of a never ending life in good health Mehlman identifies an ironic quasi-religious element that is hard to distinguish from traditional narratives of Paradise. Yet Mehlman shows how risky and uncertain the tampering with genes is and is likely to remain, as the sources of fatal errors are numerous.

Lone Frank describes a series of effects that our increasing knowledge of genetics is having and is likely to have in the future. Her starting point is the relatively low cost of gene sequencing, which enables people to seek out information about their own DNA and the risks that they may carry with them. This increased knowledge may lead to new viewpoints of what it means to be human, some more reductive than one might hope for. Nevertheless, it is likely that knowledge of how genes determine

or strongly influence what we become will lead to different perspectives on identity. She also considers how attitudes towards diversity will evolve: diversity is heralded as a positive concept, but discrimination and even racism are also part of human history. Frank's conclusion is that increased knowledge of one's own genetics will be another aspect of the existential search for identity and a tool for better understanding of what we do with our bodies and codes.

Finally, while stressing the fallibility of predicting the future, Søren Holm provides an overview of likely scenarios for the advances of medicine in a relatively near future (the next 25 years), and in a somewhat more distant future a century away. He stresses that the future will be marked by an array of different technologies and warns against simplifying the situation by focusing on a single technology that will make all the difference. Longevity will rise significantly although by no means create sensations of immortality, and there will still be diseases that cannot be cured. However, medicine will be much more effective and will take advantage of our knowledge of genes and ability to create personalized medicine. Holm also predicts that enhancement will be common with respect to sensory, motor and cognitive functions. But while the gradual lowering of the cost of initial treatments will make them accessible to more people, medicine of the future will not reach all those who need it.

(2) Ethical dilemmas

The issue of posthumanity is widely believed to raise a large number of important ethical dilemmas, i.e. cases of technological possibilities which may both be ethically defended and attacked and whose outcome is utterly undetermined. Indeed, in many cases it might not even be clear which reasons favour or disfavour realizing what has become technologically feasible. Some might think that discussions of ethical dilemmas in relation to the use of new technologies are irrelevant in the sense that if some people would benefit from the introduction of these technologies they will be used, wherever the balance of moral reasons lies. However, this is not always the case. Some people would prefer to engage in human cloning, and yet for ethical reasons it is banned in almost all countries. Also, the EU has, in effect, banned GMOs. Non-ethical interests do not *wholly* determine which technologies are used.

Three contributions to this book address posthuman ethical dilemmas. First, Sarah Chan and John Harris locate the prospect of posthumanity and the ways in which posthumans might come into being in a broader setting. They caution that ethical issues raised by this prospect are much less significant than many think. Indeed, they conjecture that a gradual transition from humanity to posthumanity will happen largely unnoticed and is in any case to be embraced. It should, however, encourage us to rethink our present moral attitudes towards species boundaries and towards other biological species. One worry is that we inflate the moral significance

of belonging to the human species and that, given a suitably uninflated view, many of the ways in which we treat animals, e.g. in industrialized agriculture, are morally indefensible.

Second, Kasper Lippert-Rasmussen considers genetic "enhancements" that benefit their targets by making sure that they do not have features (for instance a particular sexuality, gender or disability) that result in them suffering discrimination at the hands of others. In one view, to "enhance" human beings in these dimensions would be to treat symptoms of unjust social norms. What we should do instead is to address the underlying causes of the norm, i.e. the existence of prejudiced social rules pertaining to disabilities etc., by reconfiguring these norms. This may not always be feasible, however, and Lippert-Rasmussen argues that it is morally permissible for individual couples to use discrimination-dependent genetic enhancements of their future child even though the state should often forbid individual couples from exercising this moral permissibility (in which case it may become impermissible for individual couples to use enhancement techniques, not because doing so is wrong in itself but because, ex hypothesis, doing so is illegal).

Third, Lene Bomann-Larsen takes issue with permissive liberal views which claim that the state should not prevent parents from designing, modifying or selecting genes for the purpose of improving the traits and endowments of their children, provided that such actions do not harm others in morally problematic ways. She defends a more restrictive liberal view where the state may restrict parental freedom, because the state must respect the claim of children as future citizens – political persons with entitlements – and these rights include not just a right not to be harmed, but also a right to be treated as sovereign individuals who are entitled to an open future. The latter right implies that enhancement *may* wrong future citizens even when carried out in order to *benefit* them – and even when it does actually benefit them.

(3) Artistic responses

Our models of the future development of technology and its interventions in culture are very much dependent on fiction and art. In artistic representations and presentations, known and yet unknown meetings between body and artefacts can be extrapolated and unfolded in those complicated knots of ethical, social, scientific and existential dimensions, which easily escape our attention in the more specialized domains of science and even philosophy.

In his article, Mads Rosendahl Thomsen draws on the theory of autopoetics systems by sociologist Niklas Luhmann. His theory discerns between three kinds of systems that use the distinction between themselves and their environment as part of their way of operating: biological organisms, psychic systems and social systems. From this division Thomsen follows the idea of a new human in literature, arguing that the new human had three dominant phases in the 20$^{th}$ century. From

the ambitions post-Nietzschean hopes of changing spiritual life and perceiving the world in different ways, to the historically devastating attempts of refining the exiting humans through a change of societies, to the posthuman horizon that focuses on bodily changes. Writers such as Virginia Woolf, Mo Yan and Don DeLillo have all explored how fragile ideas of human identity gain complexity and relevance through the exploration of life-story narratives that must present a concrete relation to cultural history and ideas of selfhood.

In Gert Balling's contribution the lens is turned to visual art, as well as more explicitly to the transformed human body in a perspective of information technology. Analyzing two cases of digitally manipulated photographs – Nancy Burson's average human types, from beauty ideals to dictators, and Keith Cottingham's fictitious portraits of perfect male youths – Balling invokes a new function for art, one moving from a metaphorical to an implementable level. In the performances of the Australian artist Stelarc, future scenarios of machines meeting flesh are in fact explored in a remarkably physical manner; although Balling also remarks on a certain retro quality linking the performances with sci-fi classic such as Fritz Lang's *Metropolis*. The body is transformed, opened and linked to internet movements through heavy cables and robotic prosthetics, stressing the alien quality of a technology to which we easily become too accustomed.

However, the question of art's relation to the posthuman is not merely a question of mirroring future scenarios – it also involves intervening in them. As Jacob Wamberg shows in his contribution, the principles of artistic creation could in fact themselves prove to be crucial in the future evolution of both technology and nature. Setting off from two neo-Hegelian scenarios of the end of history – Francis Fukuyama's political protection of the human subject against posthuman intervention and Arthur C. Danto's art-philosophical protection of the autonomous artwork against mere thingness – Wamberg dynamizes the Hegelian teleology by transforming it into a posthuman passage, in which consciousness and its cultural products meet and are interlaced with their former other: natural evolution. Drawing upon the continental philosophies of Schelling, Schopenhauer and Bergson, Wamberg considers that this meeting practically activates those unconscious forces of nature which in modernity before 1900 could enter cultural artefacts only in the abstracted form of artistic representations, but which in the last century have entered the environment through the interactive experiments of avant-garde art.

(4) Political possibilities

How should society regulate the use of various technologies for the improvement of human capacities, e.g. cognitive enhancements? Francis Fukuyama thinks many such uses should be forbidden. He stresses how the complexity of humans that

have evolved as a species through thousands of years entails significant risks of unintended results should germ-line engineering become more widespread. Another reason for adopting a cautious approach to enhancement is that it might challenge the cohesion of societies. Societies might become more unequal, leading to an unintended threat to their overall function. In the light of this, he delivers an argument against the idea that regulation is futile and that technologies will be used once they exist. Drawing upon historical examples such as the international limitation of nuclear arms and the existence of regulatory systems within medicine, Fukuyama is quietly optimistic about the possibility of maintaining a democratic control of the uses of biotechnology, which in the end may have the result that there will not be a posthuman future.

In his contribution Torbjörn Tännsjö defends normative egalitarianism about cognitive capacities. According to this view, we should not seek to boost human cognitive capacities *per se*, but should reduce the variation in the cognitive capacities of human beings by levelling up to a point within the normal human range the cognitive capacities of those who fall below the normal human range, e.g. those with an IQ below 80. Tännsjö argues that this position can be defended on a number of different grounds. From a utilitarian point of view Tännsjö's proposal is likely to reduce the gap between what people have the capacity to do and what they want to do, thereby reducing frustration and boosting happiness. However, Tännsjö also argues that this view is consistent with Fukuyama's right-based approach that focuses on human dignity, despite the fact that Fukuyama apparently suggests the contrary. Specifically, given the modest egalitarianism of Tännsjö's scheme, it does not involve the creation of a hierarchical society of enhanced super-humans and ordinary human beings. Indeed, it will rather eliminate the present situation in which some human beings have much lower cognitive capacities than others.

Like Torbjörn Tännsjö, Julian Savulescu addresses the way in which technologies can be used to serve egalitarian purposes. Acknowledging that equality will never be achieved in any society, he argues that our present society is already so complex that large groups of people find the performance of common tasks such as filling in their tax returns to be so difficult that they are deprived of having "a fair go" at achieving a good life. In this light, Savulescu addresses the means of cognitive enhancements and the possibility that they could give more people the ability to cope with the demands of society. At the same time, it should not be ruled out that the enhancement of humankind's moral basis and relationships with people outside the closest circles is an area for improvement that may also be technologically possible. Well aware that there may not be an absolute limit to when enhancement is enough, Savulescu also touches upon what he calls "radical possibilities" in which genetic engineering could provide completely new physical capabilities.

## Exit?

The question of the posthuman is at once urgent and speculative. On the one hand, it deals with questions that are imminent and changes that are going on right now, unobtrusively establishing new standards of what is normal and what is not. On the other, it makes an inquiry into what the general direction of human existence should be in the light of our current opportunities to advance the conditions of the human race – while risking tampering with the near-universally held dignity of human existence. But what if the path to achieving dignity goes through the embracement of technological advances?

This volume does not even intend to lead to firm conclusions, but seeks to highlight the diversity of positions that exist and to point to how they link certainty and uncertainty about uses of technology, conflicting notions of human values and societal justice as well as emotions of whether this field represents a trauma or an enchantment.

Even though evolutionary theory gives us every reason to believe that humans will only exist for a limited time in the history of the Earth – and that it would be the natural course to arrive at something well beyond the human – the posthuman condition is perhaps not given as something that will necessarily happen through biotechnological means. Nevertheless, the posthuman is a horizon that has been established more firmly than ever before in the history of humankind. It is a horizon that may remain a horizon for a long time, but it may also be a horizon that will disappear with the arrival of a posthuman condition.

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