

Ethics and Nanotechnology: The Issue of Perfectionism

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Abstract: This paper aims at investigating perfectionism, as the project, shared by biotechnologies and nanotechnologies, of human enhancement. This project is commonly criticized (by Jean-Pierre Dupuy or Michael Sandel) as representing a kind of hyper-agency, a Promethean aspiration to remake nature, including human nature, to serve our purposes, and satisfy our desires. It should thus be addressed as a metaphysical or even theological problem. We would like to argue that this project is not so much Promethean as it is Pelagian. It does not aim so much at being as powerful as God, than at achieving individual, personal felicity, the way Pelagus argued that all men could achieve their own perfection. We argue that the claim of perfectionism is first an ethical one, since it pertains to what Sidgwick called 'egoist hedonism'. We then question this claim from a social point of view: What kind of social relationships is implied by the quest for individual perfectionism. This is an ethical as well as an epistemological question.

Keywords: *nanotechnology, biotechnology, ethics, theology, perfectionism.*

1. Introduction

In 2003, the French Ministry of Research and New Technologies wrote in a leaflet about nanotechnology's 'societal issues': "the prospect of manipulating matter at the molecular scale and of interfering with the world of the living *obviously* addresses ethical issues" (quoted by Dupuy 2004, p. 2, my emphasis). Is it that obvious? The leaflet does not tell, but many works have answered that question. Technologies' ethical evaluation usually follows two leads: safety and justice. On the one hand, emerging technologies are evaluated according to their sanitary, food, and environmental risks, which often leads to a cost-benefits analysis of the expected consequences. On the other hand, there is the question if these new technologies could affect the fundamental liberties (freedom, equality, autonomy).¹

Let us suppose that nanotechnology passes these two types of evaluation, that it can be proved safe, that it does not undermine justice – the fundamental liberties are not threatened and this technology is accessible to all: Could

we then argue that nanotechnology has successfully passed its moral test, and that any further ethical investigation would come close to technophobia? Some philosophers do not think so. Jean-Pierre Dupuy thus drastically questions the moral relevance of risk evaluation. Indeed, it deals only with the consequences and does not morally question nanotechnology's project in itself. Following Popper and Meyerson, Dupuy means to spot what he calls nanotechnology's 'metaphysical research program', a set of non-testable views that are not amenable to falsification, and that both inspire and limit the questions raised (Dupuy 2004, p. 8). Dupuy argues that this framework is embedded in the NBIC program, especially in its cognitivist aspect, and sees it both as the fading of the subject in its classic concept – in relation to the program of naturalization of the mind – as well as the assertion of its all-might.

In *The Case against Perfectionism*, Michael J. Sandel examines the 'ethics of enhancement' which he characterizes as perfectionism (Sandel 2007). He deals with the common aim of genetic engineering (genetic manipulations, cloning) and nanotechnology to improve human performances beyond all usually admitted limits, even to the point of imagining the end of mortality. He questions the idea – held up by Habermas (2003) – that the pursuit of such an enhancement would violate the liberal principles of liberty and autonomy (Sandel 2007, p. 80). That is why he does not dwell on the ethical objection that such an ambition would turn Man into Machine, or would see Man only as Machine – which would come down to question his autonomy (Grunwald & Julliard 2007). "The problem is not the drift to mechanism but the drive to mastery." (Sandel 2007, p. 27) The issue therefore is not the threats on autonomy, but, on the contrary, it is the power of humans, their ability to artificialize the world (and themselves) without any limit, to identify their will and power with that of God.

Whereas ordinary evaluation of technologies places the ethical problems in the political and social fields (safety, rights, liberties, justice), Dupuy as well as Sandel consider that the discussion has shifted to issues that are generally considered metaphysical (Dupuy) or theological (Sandel) rather than political or moral philosophy.

Is this diagnosis justified? Does perfectionism, aimed at by nanotechnology and biotechnology and championed by transhumanists, question our relation to nature and to God more than it questions our political and social conditions of existence? To answer this question, it is necessary to specify the kind of perfectionism. First I will rely on John Passmore's historical survey of the idea of perfection or perfectibility of Man in order to describe the specific perfectionism related to the converging technologies program. This will lead me to argue that this desire for control should be called 'Pelagian' rather than 'Promethean'. The difference, as I will subsequently show, lies in

the kind of ethical question dealt with: the ‘Promethean’ ambition is based upon the problem of power, which we might call theological, whereas the Pelagian ambition unveils the power of individual self-assertion, what Henry Sidgwick calls ‘egoistic hedonism’. This, as I will finally try to show, will lead us again to political and social problems.

2. Did you say perfectionism? Which perfectionism?

Greek philosophy is fond of order and temperance. It therefore condemned Man’s attempts in overstepping human limits and equaling God, calling it *hubris* (excessive pride). It is commonly admitted (Jaeger 1946, p. 33f.) that Greek philosophy discouraged Man to imitate the gods who, by the way, were not that admirable according to the ancients. John Passmore did not deny this, spotting it in the tragedies and underlining Pindarus’ quotation: “Mortal things suit mortals best.” (Pindarus, *Isthmian Odes*, V, lines 14-16) However, he showed that Greek philosophy cannot be reduced to a condemnation of *hubris*. Heir to a strongly religious tradition – through Orphism, Parmenides, and Pythagoras – from Plato to Plotinus and Aristotle, Greek philosophy suggested Man to become like gods by means of contemplation, which gave Man the opportunity to identify with the Being. In its beginning, the Christian doctrine proceeded from an assimilation of Hebraic thought and Greek Philosophy. Nonetheless the founding fathers of the orthodox, classical Christian doctrine rejected perfectionism Man could not possibly be perfect: the original sin – once its doctrine was shaped by Augustine – makes Man unfit for perfection. Besides, perfection as it was conceived by the Greeks could only be reached by a few, and that does not match Christianity’s egalitarian tendency. So the aim of perfection remained only in marginal or doomed currents, as is the case with Pelagius, an English lay-monk of the fifth century, whose heresy Augustine condemned.

Renaissance humanism and its continuation in the philosophy of Enlightenment renewed the context of the thought of perfection. It became secular: salvation or eternal life were no longer at issue, it was rather about improvement of Man’s earthly living conditions, about happiness. There was a shift from perfection to perfectibility. Greek or Christian conceptions insisted on a brutal conversion that would tear Man away from his human imperfection and plunge him into the fullness of being, whereas secular conceptions insisted on the path’s progressiveness, on gradual improvement without established limits, to be attained by all humans equally – which was very different from the former conceptions of perfection that limited it to a small number. That was the beginning of the stress on education (Locke) in the process of

perfectibility – as opposed to conversion leading to perfection, which could take place at any time in life.

Here, several conceptions of perfection come into play. John Passmore arranges them between two opposite poles. On the one hand, there is a purely technical conception of perfection, defined as the successful achievement of a given task; perfection here has to do with performance. On the other hand, there is a metaphysical conception that considers perfection a door to a higher reality, or the ability to identify with an ideal. The intermediate conceptions make either metaphysical perfection more reachable or the definition of the technical perfection broader. An example is the Aristotelian conception of perfection as the fulfillment of one's nature (or the realization of one's potentialities), as the achievement of a purpose. This teleological conception can be combined with an aesthetic conception of perfection, an ordered system in which all parts harmoniously contribute to the unity of the whole. The technical conception of perfection can also be extended by considering that being a human is achieving one's task at any moment in life, thus attaining a 'good life'. "Perfection, then, is not metaphysical perfection, but task perfection, and man's task is a moral one" (Passmore 1970 p. 152). But this moral extension of the technical definition of perfection (the performance in the achievement of a task) preserves its original feature: Not only moral education can enhance Man, also the changes in his physical environment and the material intervention on him can do so. Passmore recognized in the behaviorism of his time the extension of this conception of perfection, both technical and moral. According to him, this doctrine was widely accepted in the United States and the USSR by the end of the 1960's, "countries which are deeply involved in the technical management of human beings and both committed to the belief that 'all men are equal'" (Passmore, 1970, p. 256).

The perfectionism of bionanotechnology – *i.e.* human enhancement – pertains to the same technical management of Man, with a moral calling. It is indeed obvious that the human enhancement promised by the NBIC convergence has not much to do with the conception of a metaphysical perfection that would be achieved through contemplation or mystical rapture, and that would open the door to a higher reality. It does concern, however, the belief in the infinite perfectibility of human nature, risen and asserted in Europe between the sixteenth and eighteenth centuries. Transhumanists like Nick Bostrom (who defines himself as Condorcet's follower) claim to be representatives of that lineage.² One could say, however, that by pretending to be able to override even death, transhumanists are taking up the metaphysical or religious idea of becoming 'God's equal'. But, as Louis Dumont showed, that is modernity's ambition, expressed by Bacon or Descartes:

What is of paramount importance is that we have here the model of modern artificialism at large, the systematic application to the things of this world of an extrinsic, imposed value. Not a value derived from our belonging in this world, such as harmony or our harmony with it, but a value rooted in our heterogeneity in relation to it: the identification of our will with the will of God (Descartes' man will make himself "master and possessor of nature"). The will applied to the world, the end sought after, the motive and inner spring of the will are extraneous; they are, to say the same thing, essentially outworldly. Outworldliness is now concentrated in the individual's will. [Dumont 1986, p. 56]

Such an 'extra-worldliness' of the will, equaling Man with God, can only be understood by referring to Pelagius. According to Passmore, Pelagius' ideas, beyond the religious conflict between grace and liberty, still pervade the secularized context of modernity. To him, Pico della Mirandola, champion of Renaissance humanism, glorified the human will's potentialities to a level unequalled since Pelagius. To Pico della Mirandola, indeed, God created Man as a creature of undetermined nature. He can choose the place he will occupy in universe, because he was born devoid of any nature, but with the ability to decide upon the nature he will take up. This idea of a man whose nature is not to have any, and who can therefore rely entirely on his will, would already have existed in Pelagius. According to the latter, we were born with the ability to perfect (as well as to pervert) ourselves through free will. This comes down to denying the idea of the original sin, thus exposing Pelagius to be considered heretic. But it also makes him a necessary example for Descartes' and even more Bacon's artificializing and transforming ambitions. Indeed, according to Passmore, in order to reconcile Christianity with the technical optimism Bacon champions, one has to rely on Pelagius. Making all technical enhancements available to Man, saving him from disease and even from death, comes down to reinstating Man's influence on Nature before the Fall. Therefore it comes down to assuming that the original sin is not irreversible in this life, that Man, by leaving Eden, was not sentenced to suffering once and for all.³

Prometheus is nowhere to be found in this matter of perfection and perfectibility. It seems to me that the perfectionism aimed at by NBIC human enhancement should therefore be defined as Pelagian rather than Promethean (Promethean being the term most often used).⁴

3. From Prometheus to Pelagius: from serving mankind to glorifying man

Prometheus stole fire from the gods to give it to man whom he considered resourceless and fragile. His motivation was altruistic – it even led him to sacrifice himself. From this point of view, characterizing undertakings as ‘Promethean’ is saying that they exceed ordinary human abilities, and rather pertain to divine action – as was said of cloning, which, like God, ‘creates’ human beings without submitting to lineage continuity. It is a question of power. Its ambition can certainly be questioned, or at least it can be suggested that it might backfire on the one who carried it out, but its aim is seen as humanist (it serves humanity).

Pelagius in the fifth century (AD) affirmed the possibility for each man to achieve salvation through his own strength (Passmore, 1970, p. 139-140). The individual-oriented purpose of this pursuit of salvation is not questioned: any Christian will admit that one might aspire to salvation. It is even a duty. The secularization of this aspiration, shifting from salvation to happiness, does preserve its legitimacy. And the Pelagian inheritance is to be found in the certainty that man is not naturally evil, he can thus achieve his happiness without it being necessarily perverted or spoiled. The Pelagian perfectionism – as a technical pursuit of a perfection extended to the entire human life – can therefore be seen as a form of what Henry Sidgwick calls ‘psychological’ or ‘egoistic hedonism’. This is understood, according to him, “as implying the adoption of his own happiness as the ultimate end of each individual’s actions” (Sidgwick 1874, p. 185). Nothing excessive about that: “Generally, in the ages of Christian faith, it has been obvious and natural to hold that the realisation of virtue is essentially an enlightened and far-seeing pursuit of Happiness for the agent.” (*Ibid.*, p. 186)

If the perfectionism that bio- and nanotechnologies are striving for is a form of ‘egoistic hedonism’, it is not surprising that a deontological evaluation of nanotechnology has nothing to object. Why go against one of today’s strongest and most insistent deontological attitudes, *i.e.* the right to self-affirmation, to create one’s own happiness? In what Sidgwick calls ‘psychological’ or ‘egoistic hedonism’, one can recognize the right of the subject’s particularity, his right to be satisfied, which Hegel considered as the origins of civil society. This right to a subjective particularity as an unconditional deontological principle, this sacred right of the individual subject, is the core of the libertarian conception, according to which the individual is the owner of his body, and can therefore do whatever he wants with it. Therefore, it is not surprising that many libertarian arguments support the ethics of human enhancement.

‘Psychological hedonism’ is certainly not the only ethical principle of modernity. Sidgwick argued that besides the idea that virtue consists in the enlightened pursuit of happiness, there were a number of authors – including Mandeville, for instance, and Kant, of course – to whom an action, in order to be virtuous, must be devoid of any motives or interests. But Sidgwick also considered that there is no rational arbitration between the different deontological principles. According to him, utilitarianism relies on an unsolved and rationally unsolvable dilemma between ‘universalist hedonism’ (that of the greatest happiness for the greatest number, leading to self-sacrifice for the sake of the whole) and ‘egoistic hedonism’ that leads to pursue one’s own happiness above all. To Sidgwick, in this conflict, ‘egoistic hedonism’ has the advantage of being considered more reasonable by common sense, so that “the *onus probandi* lies with those who maintain that disinterested conduct, as such, is reasonable” (*ibid.*, p. 186).

A frequent objection to transhumanists is to refer to human dignity, as Habermas (2003) did. But transhumanists urge those who criticize them to point out their arguments, themselves only reaffirming their principles, banking on the impossibility to tell someone ‘I don’t want you to be happy, healthy, I don’t want you to live as long as possible, etc.’ Who would tell anyone – without being paternalistic – that he knows better than him what his happiness consists in? (Bostrom 2008) Hence transhumanism constantly reaffirms the modern idea that virtue consists in the enlightened pursuit of happiness.

If perfectionism is indeed about one of the ethical principles of modernity and shows its moral plurality, if it cannot therefore be overcome or replaced by other ethical principles, would it not be better to focus rather on the position of Man in the world and his relationships with nature? It could be argued, then, that the issue is becoming a religious one. It depends of what we mean by ‘religious’.

4. Religion or politics?

Michael Sandel rejects the objection according to which his position of accepting what is ‘given’ is a religious one: he claims that it does not at all imply a belief in a personal God (Sandel 2007, p. 85). But the definition of a religious position might not be reducible to the belief in a personal God. In a book about the relationships between science and religion, Mary Midgley rightly points out that

A faith is not primarily a factual belief, the acceptance of a few extra propositions like ‘God exists’ or ‘there will be a revolution’. It is rather the sense of

having one's place within a whole greater than oneself, one whose larger aims so enclose one's own and give them point that sacrifice for it may be entirely proper. [Midgley 2002, p. 16]

The relation to the 'given', which perfectionism would cancel out and which Sandel asks us to take into account, might deal with such a 'belief' in our belonging to a wider whole that we might call nature. The ethics of "reverence" that Sandel opposes to the ethics of "mastery" (Sandel 2007, p. 85), which is where perfectionism falls into, is similar to environmental ethics of respect of nature and its intrinsic values (see, for instance, Taylor 1986). Should these kinds of ethics be seen as religious ones – which is the objection environmental ethics often has to face? Such a 'belief', Midgley specifies in a chapter on environmental ethics, is shared by all scientists in a basic form, and does not have to be considered religious.

Many scientists who are card-carrying atheists can still see the point of preserving the biosphere. So can the rest of us, religious or otherwise. It is the whole of which we are parts, and its other parts concern us for that reason. [Midgley 2002, p. 185]

To the people who think that such a statement is religious if it backs moral propositions she returns the objection. Those who would claim to be representative only of man would be no less religious:

Anyone wishing above all to avoid the religious dimension should consider that the intense individualism which has focused our attention exclusively on the social-contract model is itself thoroughly mystical. It has glorified the individual human soul as an object having infinite and transcendent value, has hailed it as the only real creator, and has bestowed on it much of the panoply of God. [*Ibid.*, pp. 189-190]

We are therefore facing a dual ethical trend of reverence and mastery. We could only escape the religious sphere by discovering what they both have in common: the focuses on individual and on man-nature relationships both neglect social relationships.

Sandel states that we should not try to completely nullify the 'genetic lottery', because there is a positive relationship between contingency and freedom. We see ourselves all the more as actors of our own decisions as there is some sort of chance in our birth, a 'given' that was not the result of human mastery. By doing so, he is taking an interest in the philosophical dimension of freedom as Montesquieu defined it: "Philosophical liberty consists in the exercise of one's will or, at least (if all systems must be mentioned), in one's opinion that one exerts one's will." (Montesquieu 1973, p. 202) But Montesquieu added that "Political liberty consists in security or, at least, in the opinion one has of one's security" (*ibid.*). The symmetry between the two definitions should not be mistaken for equivalence. Philosophical freedom is an

introspective relationship, whereas political freedom is the relation of an individual to other individuals. Indeed, safety implies that “the government must be such that one citizen cannot fear another citizen.” (*Ibid.*, p. 169) This comes down to assuming that the philosophical definition – whether it is metaphysical or theological – alone cannot define freedom, and that appreciating political freedom (in society) implies knowledge of human relationships.

Yet perfectionism and its underlying conception of the individual do not take into account these relationships. Sandel states that the self-generation aimed at by perfectionism comes down to “*changing our nature to fit the world*” (Sandel 2007, p. 97). This world is not the external nature we should respect for its being ‘given’. It is the world we have created and turned into nature: the world of economy. Perfectionism focuses on performance and appears to be an attempt to fit a competitive world, with the entailed spiraling out of control – uncontrolled competition and unlimited growth. Hence the reference to athletes, sports being a model of pure competition in an unlimited pursuit of enhancement. A performance-enhancing technique or drug ought to be accessible to all (such is the fundamental requirement of equality, which is also a condition of possibility of competition), therefore, as it cannot give any lasting advantage to any competitor, it will necessarily lead to searching for new advantages or new performance-enhancing drugs in an unended quest for bettering performance.

It seems important that Sandel focuses on the economical integration of perfectionism rather than on the technological or machine model of self-generation or self-manufacturing it conveys. Transhumanism aims at enhancing the performances of what Amartya Sen calls the “rational idiot”, a calculating individual only focused on his own happiness, *i.e.* the economic agent of the neo-classical theories (Sen 1993, p. 87). Such an individual is notoriously unsociable. To him, others are just competitors or rivals.

The transhumanist claim to be representative of the Enlightenment’s conception of progress and perfectibility is unsubstantiated. As John Passmore shows, in a secular and humanist view, perfectibility concerns both individual and society. This is the novelty of the secular ideal of perfectibility. Whereas the religious view (Greek or Pelagian) confines man in his relation to God and hardly takes his neighbor into account, even if it enjoins us to love him as ourselves, the Enlightenment perfection places man in his social environment: hope of perfection lies in the man-to-man relations rather than in man-to-God relations.

It seems that examining the changes nanotechnology brings to the traditional conceptions of technical objects along with the distinction between nature and artifact, always leads to redefine our ‘partnership’ (Bensaude-Vincent 2004, p. 54-55) with technical individuals, whether they be human or

non-human. Not only do these hybrid beings, labeled ‘cyborgs’, receive a social status, also techno-scientific practices urge us to reshape our relationships with entities that cannot be objects anymore –according to the classical distinction between subjects and objects. The development of nanotechnology is urging moral and political philosophy to define the social networks linking humans to non-humans. Yet how will we take up this challenge, if we limit ourselves to self-generation perfectionism, confined in the individual monad that has no portal and no windows, as the phrase says?

4. Conclusion

Throughout this paper, I have taken seriously the transhumanist perfectionist program of human enhancement criticized by Jean-Pierre Dupuy and Michael Sandel. This programme is typical of the NBIC convergence (Roco & Bainbridge 2002). As long as we stick to nanotechnology (to the production of nanostructured materials) we only come across a problem of power. It is meaningful that most of the imagination related to nanotechnology, chiefly through Drexler’s book (Drexler 1986), is that of the *grey goo*, a substance that would consume and take the place of all that exists. Such fears clearly come under the new moral status of technology as Hans Jonas defined it (Jonas 1997). Traditionally, technology was considered morally neutral, and only its finality or use was a matter of moral evaluation (the Biblical distinction between the plow and the sword). Now technology is a direct object of ethical reflection. The scope of involuntary (and unpredictable) consequences of our technological interventions, along with the self-driving technological development prevent us from sticking to the traditional distinctions between good and evil purposes, and force us to take into account technology itself. Civil nuclear energy industry, according to Jonas, is as much a moral problem as military nuclear industry, maybe even more, because it is more difficult to pull out of civil nuclear energy industry than to cut down or even to give up on the atomic weapon arsenal.

While bio- and nanotechnology converge in a perfectionist credo, based on the philosophical ground of cognitivism, those who advocate this program, particularly the transhumanists, do not care for the objections raised by the champions of human dignity. Their perfectionism relies on a strong ethical principle of modernity, that of ‘psychological hedonism’ according to which virtue is the enlightened pursuit of happiness. Such a principle has its due place in modern moral pluralism. But it can be questioned from the point of view of its social consequences and of the social bonds it enhances. Arne Naess (1989, p. 95) has raised some questions to assess a new technology,

such as “does it strengthen cooperation and harmonious togetherness with other workers” or users? Human enhancement nanotechnologies are so self-centered, so related to individual performances, that we can strongly doubt that they could respond positively to Naess’ questions. One way to assess technologies is to investigate the world associated to such technologies. Would we like to live in a world peopled with ‘rational idiots’, a world of egoistic competition? As far as I am concerned, I will answer negatively.

Notes

- ¹ The first kind of evaluation is called consequentialist. By calling the possible infringement of rights and liberties ‘moral risks’, some analysts also classify the second kind of evaluation as consequentialism. In this questioning about justice, we are dealing with the infringement of fundamental or intrinsic values. That is why we would rather consider it deontological and leave the term consequentialist to the first evaluation – with all possible reservations concerning the use of this term: an evaluation of consequences is not necessarily moral, it has to maximize a moral good.
- ² See the introduction of Maestrutti 2007.
- ³ This point is further developed in another book by Passmore, published in 1974. See also Bourg 2000.
- ⁴ Michael Sandel thus writes, about the champions of human enhancement: “The deeper danger is that they represent a kind of hyper-agency, a Promethean aspiration to remake nature, including human nature, to serve our purposes, and satisfy our desires.” (Sandel 2007, p. 26-27)

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