

Chapter 2

The Transhumanist Challenge

2.1 The Ethical Discussion About Human Enhancement and Its Assumptions About Human Being and Vulnerability

Philosophers have only interpreted human being, in various ways; the point, however, is to change it. This parody of Marx¹ could well be a slogan of the transhumanist movement,² which advocates radical ways of human enhancement. Human enhancement can be defined as the improvement of humans by technological means. There are many kinds of human enhancement, depending on the aim and the technology (means) proposed. For example, in a medical context, the term typically refers to improvements that go beyond mere therapy, such as improving the genetic make-up of an individual. But other technologies may be involved as well, and more likely a combination of technologies is used.³

In its radical version, the application of new technologies aims at moving us beyond human being towards new, posthuman modes of experience and existence. We are asked to welcome the possibility of enhanced memory, improved sensory capacities, and extended lifespans or even immortality. Once this will be realised in the future, so it is argued, why hold on to our old way of being? The time will soon come, it seems, when we can finally shed our clothes of human vulnerability and bravely step into the dawn of a radiant, posthuman future. Should we? Can we?

In the past decade, there has been much discussion about what may be called the normative ethics of human enhancement: is human enhancement morally acceptable, and if so, what kind of enhancement is morally acceptable? In this book, it is not my purpose to argue for a particular position in this debate. Rather, here and in Part II, I will engage with these issues in order to contribute to my main aim to elaborate what

¹ Marx famously asserted in his *Theses on Feuerbach* (Marx 1845): ‘Philosophers have only interpreted the world, in various ways; the point is to change it’ (thesis 11).

² In fact, Harris has referred to this phrase of Marx in his defence of human enhancement (Harris 2007, p. 3).

³ Often the term ‘converging technologies’ is used (Nordmann 2004).

I call *a normative anthropology of vulnerability*. In this chapter, I will respond to the controversy over human enhancement in order to introduce the issue of vulnerability and to start delineating my philosophical-anthropological position. In the next chapter, I will further develop my view by engaging with theory of (technological) risk.

2.1.1 Transhumanists Versus Bioconservatives and Infoconservatives: The Anthropological Issue

Before articulating my own approach, let me first examine the terms in which the current debate about human enhancement is framed. Transhumanist visions⁴ have given rise to a highly polarised discussion between defenders of *human nature* and transhumanists, who want to change it. The latter accuse their opponents of irrational conservatism. For example, Bostrom and Ord claim that laypersons and others who oppose transhumanism suffer from *status quo bias* (Bostrom and Ord 2006). A further argument frequently used by proponents is that the development of technologies that will alter human being cannot be stopped anyway (Stock 2002). However, transhumanists are not always naïvely optimistic technology gurus such as Kurzweil (2005) or Naam (2005). Some recognise that there are potential dangers but argue that the proposed changes need not end up in a Brave New World. According to Agar (2004), a liberal eugenics is possible with respect for pluralism; Hughes (2004) defends a democratic transhumanism. Singer (2003) supports state intervention so that human enhancement is not left to the market, whereas Bailey (2005) thinks that we will learn by *trial and error*. Harris (2007) argues that even if we are bound to make mistakes, we still have a moral obligation to enhance and that choices of what to enhance should be left to the liberty of individuals. Opponents, by contrast, see great danger in human enhancement that should not just be regulated but forbidden. Consider the public outrage in Europe following Sloterdijk's proposal to make *rules for the human zoo* (Sloterdijk 1999): many people fear proposals for genetic enhancement, sometimes referred to as *eugenics*. Habermas (2001) sees a threat to human being and human dignity in the emergent biotechnological possibilities, as does Smith (2004); Fukuyama (2004) relies on the notion of human nature to argue in favour of therapy but against enhancement. McKibben (2003) sketches a horrific future and claims that our current technology is already *enough* that we should restrain ourselves and stop further developing the technologies. Elliott (2003) links human enhancement to a culture of obsessive happiness seeking by medical means. And Dupuy (2008) thinks we must 'defend humanism against the excesses of science and technology'.

The name *bioconservatives* does not cover all conservative responses to the issue of human enhancement, since other technologies, especially converging technologies,

⁴ See, for example, 'The Transhumanist Declaration' from the World Transhumanist Association (2002), now Humanity+.

do not only belong to the *bio* domain. Therefore, let me add a new term to the vocabulary: next to bioconservatives, there are what I call *infoconservatives*, who do not want *information technologies* that change human being. Similarly, one could talk about *nanoconservatives*. (And of course, one could also avoid having to make these distinctions by talking about *the conservative response to human enhancement proposals*, regardless of which technologies they involve. However, I will continue to use the terms *bioconservatives* and *infoconservatives* in order to differentiate between the conservative responses and to indicate the significance of information technologies in relation to human enhancement.)

How can ethicists respond to the transhumanist project of radical human enhancement and to its critics, that is, to their *vision* (not necessarily the prospect) of the new human? And how can philosophy mitigate the polarisation in this discussion? First, we have to identify what is at stake. Terms such as *transhumanism*, *posthuman*, and *human nature* lead us to ask the question of philosophical anthropology: what is human being? What is this *human nature* opponents of transhumanism defend, and what is the *human* transhumanists wish to overcome? This link between ethics and anthropology is unsurprising, since conceptions of the good life are always related to conceptions of what we are. But it seems that now the question takes on a new dimension and a sense of urgency. The question is urgent, since if it is possible, at least to some extent, to change who we are by technological means, we better think about *what* we are changing. Moreover, it appears that the problem assumes a new dimension, a *normative* dimension: if and in so far we can change what we are, the anthropological question is not only what we are as humans (descriptive) but also what we should be (normative). It seems that for the first time in human history, philosophical anthropology becomes part of normative practical philosophy, since we now have the opportunity to change the human. Is this observation correct? Which method should a normative anthropology use? And how can this help us to defuse the tense controversy?

In the next sections, I will start to develop my contribution to answering these questions, but let me first say more about the relation between transhumanism and vulnerability.

2.1.2 Fighting the Dragon or Accepting What Is Given by Nature or God? The Question Concerning Human Vulnerability and Technology

The aims of transhumanism do not only challenge traditional views of human being; they also question our thinking about vulnerability. In order to sketch what is at stake in transhumanist visions of posthumanity, consider the following tale, told by one of the most prominent transhumanist thinkers:

Once upon a time, the planet was tyrannized by a giant dragon. (...) It demanded from humankind a blood curdling tribute: to satisfy its enormous appetite, ten thousand men and women had to be delivered every evening at the onset of dark to the foot of the mountain where the dragon tyrant lived. (...) The misery inflicted by the dragon tyrant was incalculable.

(...) Some people tried to fight the dragon, but whether they were brave or foolish was difficult to say. (...) Seeing that defeating the tyrant was impossible, humans had no choice but to obey its commands and pay the grisly tribute. (...) Spiritual men sought to comfort those who were afraid of being eaten by the dragon (which included almost everyone, although many denied it in public) by promising another life after death, a life that would be free from the dragon scourge. Other orators (...) said it was part of the very meaning of being human to end up in the dragon's stomach. (...) Most people tried to cope by not thinking about the grim end that awaited them. (Bostrom 2005, p. 273)

Clearly the issue addressed here is how we should cope with human suffering, ageing, and mortality—indeed with human vulnerability as an existential condition. For those who are brave enough to confront the problem, there are roughly two options. On the one hand, there are those who tell us we must accept all that is given to us by nature or God. Why not accept the outcomes of natural evolution or the will of God? Both *religious* and *nonreligious* humanists tend to take this position—the difference being that some religions promise an afterlife. Note that, in contrast to what Bostrom suggests in his tale, the traditional humanist position is not necessarily that we must accept *everything that happens to us* as a result of disease and ageing. Rather, traditional humanists urge us to reduce human suffering as much as we can, for example, by means of medicine. However, they accept *the rules of the game*, that is, they accept that being human involves disease, ageing, and morality. Transhumanists such as Bostrom, by contrast, are not content with this response: they want to change the rules of the game. They want to go beyond comforting and caring; they want to take away the root of the sufferings of humankind. This is the *moral* of Bostrom's tale: we should fight the dragon, that is, extend the (healthy) human lifespan, diminish suffering, and not accept ageing as a fact of life (Bostrom 2005, p. 277). In other words, when it comes to their final, long-term aim, transhumanists want to make us immortal, which means invulnerable. If this were possible, this would be the end of being human as we know it: we would become *posthuman*.

Transhumanists propose to use technology to reach this aim, through biotechnology (genetic enhancement) and information technology. For example, in *The Singularity is Near* (2005), Kurzweil suggests that we will become cyborgs, upload ourselves, have nanobots in our bloodstream, and enjoy nonbiological experience—whatever that means. Like many other transhumanist visions, these technological transformations seem to aim towards invulnerability and immortality: the idea is that we can transcend our present limited bodily existence by means of human enhancement technologies. Rather than being vulnerable mortals, we could become strong, invulnerable cyborgs or immortal minds living in an eternal, virtual world. *If* we had the means to bring this about, why would we refuse to kill the dragon of human vulnerability? Why would we refuse to become the gods we always feared and worshipped?

In the next chapters of this book, I argue that transhumanists can never reach their aim, at least if that aim is reaching absolute invulnerability. I argue that even if we had full control over the human and could fully *design* the human (an idea which is very problematic, see the end of this chapter) and enhance ourselves, become cyborgs, or upload our minds into virtual worlds or into machines, we would remain highly vulnerable entities. Transhumanist human enhancement would not erase our current vulnerabilities, but instead transform them. It would also create new vulnerabilities (see for instance Chap. 6). I conclude that posthumans also would have to cope with

their own dragons. And that *today* we have to cope with the current vulnerability transformations, created by the growth of new technologies (e.g. information technologies) and with their human, social, economic, and political entanglements.

However, before I unfold and develop my argument about vulnerability in the next chapter, let me first respond to the philosophical-anthropological controversy that underlies the ethical discussion between conservatives and transhumanists. I will do this in a way that first sides with transhumanists but then begins to depart from *both* sides by articulating an existential-phenomenological approach to human being and human vulnerability.

2.2 First Response to the Anthropological Issue

Human enhancement technologies are new, emerging, or do not exist yet. In this sense, it is a *new* problem, raised by relatively recent technological developments and the visions and fantasies they kindle. But how novel are the stakes in the debate and its underlying anthropological dispute? Let me first diminish its aura of novelty by putting it in the context of three other earlier discussions: one about the variability of human nature, one about the relation between humans and technology, and one about what we are and should be. In addition, this contextualisation will help me to clarify my own approach to the anthropological problem. I will then prepare the ground for my own (positive) philosophical-anthropological inquiry in the next chapter by discussing what *kind* of philosophical-anthropological perspective could mitigate the polarisation in the discussion about ethics of human enhancement and help to open up new conceptual space for understanding and evaluating new technologies and the worlds and lives they shape.

2.2.1 *Human Nature Has Always Changed*

Until the nineteenth century, human nature was understood as invariable; it was viewed as a set of characteristics that defines the human as opposed to the non-human (animals, angels, demons, gods, etc.). From the mid-nineteenth century onwards, this conception of human nature was challenged by several theories that historicised human nature. But this had further consequences: the birth of the concept of history was also the death of the self-evidence of the very concept of human nature. First, biology⁵ has put forward the idea of natural evolution: all organisms, including humans, change over time as a result of natural selection and (according to contemporary evolution theory) mutation and genetic drift. Second, the development

⁵ Usually the name of Charles Darwin is associated with this view. Although Darwin is certainly not the only father of evolution theory, he is the most influential among them. Most contemporary evolutionary theories, therefore, are called neo-Darwinian. Today, the evolutionary approach has spread from biology to psychology and beyond.

of the social sciences⁶ has produced a view of humans as heavily influenced—if not determined—by their social and cultural environment. Combined with the historical approach that emerged in the nineteenth century, these new insights suggested that today we are not the same *humans* than 10,000, 5,000, 2,000, or even 100 years ago. We have changed as biological and as social-cultural beings. In sum, during the last 150 years, the view has spread that there is no single and fixed human nature, a view that remains controversial today.⁷

Note that the implications of biological change for our view of human nature have received more attention than those of historical-social change. Note also that both kinds of theories can be interpreted in various ways, ranging from naturalism and determinism to interpretations that do not reduce what humans are and what they can do to their biological and/or cultural-historical aspects.

Referring to these developments in the history of ideas is helpful, since some of the contemporary resistance against human enhancement is still based on a pre-nineteenth-century view of who we are. It is important to understand what bioconservatives mean by *human nature*. Do they take into account relevant insights from evolutionary biology and the social sciences, and if so, how? A plausible view on the ethics of human enhancement should acknowledge biological and historical change. In particular, opponents to transhumanism should answer the question of why they think it is wrong to change human nature, given that there always has been evolution and given that our social and cultural environment has a significant impact on what we are. Consider, for example, how societal techniques to discipline people (e.g. Foucault 1977) change us. Consider how upbringing and education change us. They change what we are: not only who we are as persons in the course of our lifetime but also what we are as *humans* in the course of human history. Opponents should explain why they think using these techniques to enhance humans is right and human enhancement by (new) *technological* means wrong. Why, for instance, is genetic engineering wrong but (some forms of) social engineering right?

Let me further develop this point by discussing the arguments of an influential opponent of human enhancement. In *The Future of Human Nature* (2003), Habermas fears that the ethical self-understanding of the species will be changed in such a way ‘that we may no longer see ourselves as ethically free and morally equal beings guided by norms and reasons’ (Habermas 2003: 41). I share his fear for this development and sympathise with his moral ideal to some extent, but I think he is wrong if he suggests that human enhancement (his particular concern is genetic engineering) is the first blow to that self-image. The Kantian image Habermas relies on has been questioned by (among others) eighteenth-century *moral sentiment* thinkers such as Hume and Smith; by nineteenth-century giants such as Darwin, Marx, and Freud; and by twentieth-century positivist natural and social scientists and philosophers. Opponents to transhumanist human enhancement that rely on the Kantian ideal must explain why they think such enhancement would be a first or more fundamental

⁶Founding fathers of the social sciences include authors such as Auguste Comte, Émile Durkheim, and Karl Marx.

⁷Consider for instance opposition to (neo-)Darwinism by some religious groups or organisations.

blow to our self-image than ever before, why their moral ideal is more worthwhile to aim at than that of the transhumanists, why their own ideal does not *instrumentalise* persons (Habermas 2003, p. 44) given that in their view persons may appear as instruments in the hands of *pure reason*, and how much the transhumanist ideal differs from their own given that transhumanists may also appeal to *autonomy* and *reason* in order to defend its ideal: they may argue that human enhancement should make us more autonomous and more reasonable. Answering these questions would contribute to the *substantive* and *thick* discussion Habermas rightly seeks.

Let me respond to particular arguments made by Habermas to develop my point. First, his argument that *eugenic interventions* bar the person from ‘the spontaneous self-perception of being the undivided author of his own life’ (Habermas 2003, p. 63) is problematic, since it assumes that without human enhancement we have such a high degree of autonomy, whereas this kind of autonomy—if it makes sense at all—is already challenged by social, cultural, and educational interventions, which shape us and make us at most a *co-author* of our own life. This does not render his argument pointless, but he and other opponents must (better) explain why the socialisation process is a smaller problem for our self-perception. I agree with the objection considered by Habermas in his postscript that ‘the distinction between natural and social fate is less razor sharp than the way we usually understand it’ (Habermas 2003, p. 83). Habermas’s best response to the problem (earlier in the book) is that socialisation practice can be subjected to reappraisal by the person, whereas paternalistic genetic programming is irreversible (Habermas 2003, p. 64). But that argument does not acknowledge that our *natural* genetic make-up is also beyond our influence: it also has irreversible consequences and does not allow for reappraisal. As Habermas formulates the objection put forward by Nagel, McCarty, and others:

Why should it make any difference for the moral person, within the network of her interpersonal relationships, whether her genetic inheritance depended on the vagaries of her parents’ choice of partners and the world of nature, or from the decisions of a designer whose preferences are beyond her influence? (Habermas 2003, p. 81)

Consider again the young people in the novel *Never Let Me Go*: does it make a difference to the experience and meaning of their lives that they are clones and, in this sense, *designed*? The novel suggests that they experience similar interpersonal joys and difficulties and that (except for the issue that they are used for organs, which *does* make a significant *ethical* difference) the meaning they give to their lives is not radically different from the meaning we give to our lives, the beginning (and end) of which is also partly beyond our control. How relevant is the distinction between natural and artificial here? Habermas replies to this objection by saying that if we are unsure about the contingency of our natural roots, we may feel ‘the lack of a mental precondition for coping with the moral expectation to take, even if only in retrospect, the *sole* responsibility for her own life’ (Habermas 2003, p. 82). But surely we can never take the *sole* responsibility for our own life, given the many influences that shape it beyond our control. For example, our parents carry at least part of that responsibility, since they contributed to the *making* of our life by means of their education.

A better argument is to refer to the problem of equality (Habermas 2003, p. 115) or to say that the crucial difference lies in the possibility that in the former case we

can hold someone accountable (our parents or other genetic *designers*), whereas in the latter, *natural* case, we cannot blame nature. In Habermas's words, 'The young person can call his designer to account, and demand a justification' (Habermas 2003, p. 82). This indeed alters our self-perception or identity (I see myself as someone who is designed by someone), but it does not necessarily change the perception of how *free* we are in relation to our genetic make-up. This aspect of our self-perception would only change if genetic engineering were available to us in the course of our lives (after birth), if we could redesign ourselves.⁸ Moreover, technology can, could, and has been used to give us more freedom and autonomy. Habermas does not see this possibility. I agree with him that 'eugenic self-optimization of the species' is a 'horrifying prospect' if it is 'carried out via the aggregated preferences of consumers in the genetic supermarket' (Habermas 2003, pp. 92–93). We do not want *that* kind of autonomy. But technology need not be used in this way; there are other options. For example, biotechnology could be used to better enable persons to do their moral duty (to use a Kantian term) or to become better equipped to be a morally good person in other ways. I do not wish to argue for or against this option, but Habermas does not even consider alternative applications of biotechnology that may appear less *horrifying* to us—including those of us who sympathise with the Kantian view. Habermas's technological pessimism may be due to his well-known view (developed in his earlier work) that the *system* invades and colonises the *lifeworld* (Habermas 1981). If technology is understood as belonging to the *system* only and if it can only *colonise* our lifeworld, there is no room for seeing other relations between human being and technology.

In the discussion above, the question of how much control we do have and should have is a crucial one. Defenders of *human nature* do not only assume that human nature is fixed; they also assume a fixed border between culture and nature, between what is within our control and what escapes our control. But as Dworkin (1999) has argued, this distinction between *fate* and *choice*—part of the basis of our ethics of responsibility—is challenged by new biotechnological developments and is an important reason for our ethical worries. In other words, the border between culture and nature, between control and fate, is shifting or will likely shift in the future. This implies that in the discussion about human enhancement, we can no longer take this distinction as given and assume that there is consensus about it. The frontiers of control should be the object of explicit discussion. Moreover, if it is true that human nature has *never* been fixed and that there has always been an interactive relation between technology and human being, then the border between control and fate has never been fixed in the first place. We have always used technology to expand the domain of control, and, as I will argue below, we have always experienced limits to control. If this is true, human enhancement technologies do not by themselves pose

⁸ Physicist Freeman Dyson suggests that in the future we will have available 'cheap and user-friendly tools and do-it-yourself kits for gardeners' and 'biotech games for children [...] played with real eggs and seeds' (Dyson 2006, p. 223). He says these tool kits should not be applied freely to humans. But if this vision became reality, who could stop parents design their babies? And who could stop adults redesigning themselves?

a categorically distinct ethical-anthropological problem as opposed to other technologies—although they make the problem more visible.

Let me now elaborate my point concerning the relation between technology and anthropology suggested in this section.

2.2.2 *Technology Has Always Changed Who We Are*

Historical change and the relationship between determinism and freedom mentioned above raise the question of how much influence we have on what we become because of social and cultural processes that operate outside of our control. Consider Marx's view. He is famous for what is taken to be his historical determinism but nevertheless left room for labour as conscious and imaginative design that exists outside of what is predetermined. In the first part of *Das Kapital* (1867), he suggests that what distinguishes us from animals such as bees and spiders, which are also capable of building, is our capacity of imagination (Marx 1867, Vol. I, Chap. 7). Moreover, in the same chapter, he points to the fundamental habit of humans to *transform* nature. This process of transformation he calls *labour*. We may also call it *technology*, the art of *technè*. Surely, Marx thought that the conditions under which people work are socially determined. But seeing the transformation of nature, that is, (the use of) technology, as fundamental for human nature, is an important step towards a richer conception of the human being. It implies that technological transformation is *natural*. This is also true for the transformation of human being. We changed ourselves because we are the kind of beings that change ourselves and the world by using technology; as I said in my introduction, this is part of our nature. It does not happen *in spite of* being natural. We are, as Plessner said, artificial by nature (Plessner 1928). Human self-transformations by technology can be observed in history, for example, in the history of medicine. Humans that live on average 80 years are no longer the same beings as those that lived on average 40 years. In this sense, our human nature has changed and is already changing. Even if one thinks that some (kind of) changes are bad (e.g. changes to lifespan), one has to accept the dynamic, natural-historical aspect of human nature. Furthermore, twentieth-century and contemporary philosophers of technology such as Ihde, Latour, Borgmann, and Verbeek (see e.g. Verbeek 2005) have studied the ways in which technology changed our existence by *mediating* the way we relate to the world and by shaping our relations with others. Whether or not it is a bridge too far to call us *cyborgs*, as Haraway (1991) did, in any case, the relation between humans and technology turns out to be more intimate than previously assumed.

For the discussion about human enhancement, this insight implies that opponents should not only acknowledge the influence of biological and historical change on who we are but also the influence of *technology* on our bodies, our relations, and our society—on who we are. This means that opponents of human enhancement are challenged to explain not only why they reject the purpose of human enhancement but also why this purpose and its means—the new technologies—are radically different from the purposes and technologies of the past, which influenced and shaped

who we are. Is there a radical break with the past? For example, where is the line between *enhancement* and *therapy* in biomedicine, given that contemporary *therapies* have prolonged life in a significant way compared to the past? Habermas relies on a distinction between healing and enhancement (Habermas 2003, p. 44), but the *logic of healing* has also changed our lifespan—in this sense, the logic of healing is also the logic of human enhancement. Why is *that* prolonging of life good and the transhumanist goal of longevity and immortality bad? To put it in engineering terms, the difference between repairing and improving disappears (Cerqui 2002). Is this a problem, and why? Why is genetic engineering bad and previous biomedical technology good? Why would human enhancement technologies turn us into cyborgs, and previous technologies not? What exactly is wrong with seeing ourselves as cyborgs, if this means that we are shaped by technology?

To clarify my point, let me further comment on Habermas's arguments. He thinks that biotechnology creates a *new type of intervention*: what previously was given as nature 'now shifts to the realm of artefacts and their production' so that the boundary between what we are and what we make of ourselves disappears (Habermas 2003, p. 12). But if we have always been artificial to some extent, why is intervening in the human genome a *categorically new possibility*? And does it really raise moral questions 'of an *altogether different kind*' (Habermas 2003, p. 14)? Habermas is right if he says that the original philosophical question concerning the *good life* takes on new life, but he is mistaken in his view concerning the relation between what we are and what we make of ourselves. The border between the two has always been unclear. The *natural* human body has always been influenced by technology. Habermas rightly recommends us not to leave the discussion about the human to biologists and engineers, but by assuming a strict separation between human *nature* and *culture*—at least up to the point when we can intervene in the human genome—he subscribes to an impoverished and inadequate view of the human body, of technology, and of the relation between humans and technology. The 'categorical distinctions between the subjective and the objective and between the naturally grown and the made' (Habermas 2003, p. 42), between 'what is *manufactured* and what has *come to be by nature*' (Habermas 2003, p. 46), cannot be *uprooted* since they have never been as clearly differentiated as Habermas presumes. He may be right that the primary mode of experience is being a body rather than having a body, but this being a body, this experience of the lived body, is not isolated from technology and other material conditions. Rather, human being, including its bodily aspects, is shaped and transformed by technology. Inspired by existential-phenomenological strands in philosophy of technology, I will further develop this point below.

2.2.3 *Philosophical Anthropology Has Always Been Normative*

Philosophical thinking has always involved thinking about who we are, understood as *what the human is*. Today, fond as we moderns are of disciplines and subdisciplines, we call this 'philosophical anthropology' and differentiate it from *normative* subdisciplines such as ethics and political philosophy. But from Plato until today, these ideas have

always had a significant *normative* side: ideas about who we are have always been coupled with ideas about who we *should* be. Long before transhumanists entered the stage, there was a strong current running through the history of philosophy—including philosophical anthropology—that was deeply dissatisfied with what we are and wanted to make us *better* than we are. In other words, it wants to change what we are.

Often the goal of these philosophers is moral improvement: we should lead better lives, become better people, and do the right things. We should become wise, reasonable, loving, self-controlled, etc. For this purpose, various techniques of moral education have been used. Although these techniques have always involved material aspects, we usually do not connect them to technological change. This should not surprise, since technology is often ignored as a theme in the history of moral philosophy and philosophical anthropology. For example, in Pojman's overview *Who Are We? Theories of Human Nature* (2006), the normative dimension of anthropology is present on virtually every page, but our relation to technology is simply not recognised as an issue. (We must turn to the still somewhat marginalised *philosophy of technology* to find such a discussion.) A more relevant work in this respect is Passmore's *The Perfectibility of Man* (1970), which traces the history of perfectibility from the Greeks to the twentieth century. In his first chapter, Passmore distinguishes between *technical* perfection (becoming good at performing a task) and *teleological* perfection (to reach an end, a *telos*—for Aristotle, the human *natural telos* is human flourishing, the good life, *eudaimonia*). And in Chapter 10, he discusses *the perfecting of man by scientific progress*. However, his emphasis is on scientific and social change, not on technology as such. Science and technology are related, of course, but often (the material aspect of) technology and what it does to what the human is remain out of sight. Science is not only about *logic* but also about *materiality*. It is about labs but also about what humans do in their lives. It is *system*, but it is also *lifeworld*.

Thus, if *enhancement* broadly conceived is much more *mainstream* than many people suppose it is, defenders of human enhancement must explain how their project differs from other kinds of *enhancement* projects—historical or contemporary. For example, Bostrom has explained the difference between humanism and transhumanism: he understands transhumanism as a radicalisation of humanism⁹:

Transhumanism has roots in secular humanist thinking, yet is more radical in that it promotes not only traditional means of improving human nature, such as education and cultural refinement, but also direct application of medicine and technology to overcome some of our basic biological limits. (Bostrom 2003a, p. 494)

⁹ Note that there is also a deeper sense in which transhumanism can be understood as a kind of humanism. With Heidegger, we might trace the desire to change the human back to the modern humanist desire to gain control over everything that exists, to make everything a thing and a slave to our purposes. Dupuy, by contrast, understands 'cybernetics' as an antihumanism (Dupuy 2008). Although I agree with Dupuy that we should not reduce 'humankind to the status of an object that can be fashioned and shaped at will' or to a 'machine', I side with Heidegger in pointing out that this way of thinking is rooted in humanism, *or more precisely a particular kind of humanism*, which has been developing in modernity. I think this Heideggerian view provides us with a good argument against the 'transhumanist' human enhancement project. But criticising this particular way of doing and thinking neither prevents us from accepting some of the claims transhumanists make about the dynamic character of human nature and its relation to technology nor does it exclude the possibility

On the other hand, opponents of human enhancement should be able to explain why the inescapable *normative* aspect of the anthropological tradition they rely on (e.g. Platonism and Christian thought), in particular its aims and ideals, is different from the normative aims of transhumanism. If philosophical anthropology has always been *transhumanist* in the broader sense of wanting to improve the human, what is wrong with (contemporary) transhumanism? And even if we distinguish between the two (as I think we should¹⁰) and say that contemporary transhumanism is humanism by *technological* means, why is *that* wrong and humanism by educational means not? How different are there goals? And why are technological means wrong per se?

To put the challenge for the opponents of transhumanism in another way, if Kant would have had the *technological* means to overcome the biological *necessity* he struggled with in his philosophy and his life, would he have used them? *Should* he have used them?

The link between humanism and the transhumanist project of human enhancement has not always been recognised. For instance, in his controversial speech *Regeln für den Menschenpark* (1999), Sloterdijk has announced the end of humanism and has suggested a Platonic-Nietzschean project of selection by biotechnological means, which philosophy should reckon with. In making these claims and leaving aside whatever his own normative position is (which is not clear at all), he assumes a strong opposition between, on the one hand, a humanist culture which aims to *tame* people by education (reading literature, sitting, etc.) and, on the other hand, a biopolitical process of breeding and selection. Transhumanists, however, do not define their project as antihumanist but as humanist. They see it as humanism by other (technological) means (see again Bostrom 2003b). Thus, they do not see a sharp opposition between humanism and ethics, on the one hand, and a raw politics of power, on the other hand. Transhumanists can (and most of them do) consistently hold that ethics is still possible

of a different kind of humanism: a humanism that recognises and respects limits to human control and that develops a different kind of relation to the world, a less *modern* one. Given the 'technological nature' of humans, this does not necessarily mean that we must reject technology but rather that we need different kind of technology (and hence different kind of humans). And it seems to set up an ethical project rather than making such a project impossible, as Dupuy suggests (Dupuy 2009, pp. xviii–xix), although I fully agree with his Anders-inspired remark that currently we experience a gap between our capacity to act in the world and the ethical resources at our disposal. Moreover, we should not be blind to the *nonmodern* aspects of science and technology in practice. Perhaps things were always already 'out of control'; in contrast to what Dupuy, Arendt, and Anders seem to presuppose, we have never been all-powerful, pure masters. I suspect that even science and technology motivated by a 'transhumanist' human enhancement project will have this kind of ambiguity and paradoxicality. I will return to the issue of control at the end of this chapter.

¹⁰ However, the distinction should not be made in terms of 'technological' versus 'non-technological' but in terms of the *kind* of technologies and objects used and—more importantly—in terms of the way they respond on the existential problem of vulnerability. Transhumanists try to reach immortality and invulnerability *on earth*, whereas Platonists and Christians tend to accept physical vulnerabilities and 'earthly' mortality. The soul may be immortal, but the body is not; death is the separation of soul and body. Even if the body is believed to be resurrected, this presupposes that the body first dies: one must fall to be raised but seek to transcend these vulnerabilities and to overcome death in a different sphere or in an afterlife (not on earth, not in this life).

and desirable and that we can and must make ethical choices concerning human enhancement that it is not—and should not be—merely a matter of power. For this reason, their view need not imply the brutal inequality usually connected to Platonic and Nietzschean elitist politics. Proponents of human enhancement differ on the political question: some want a liberal eugenics, and others argue for more state intervention. Some combine their view with a plea for inequality, and some defend equality. Thus, although not all humanists may defend (some forms of) human enhancement for other (ethical, political) reasons, there is nothing intrinsic about *humanism* broadly conceived that opposes it. Rather, many proposals for human enhancement are transhumanist without rejecting humanism, and it makes sense to define transhumanist human enhancement as a radicalisation of humanism, as Bostrom does.

Note also that, in contrast to what Sloterdijk thinks, new media need not be opposed to literature—the *old* technology and the humanist recipe for moral improvement—but can also be used as part of a humanist strategy. Computer games, for example, may assist Nussbaum's humanist mission if they meet certain ethical criteria (Coeckelbergh 2007). In general, technology and humanism need not be enemies. The only connection Sloterdijk sees between technology and humanism is the military one (a humanist discourse about universal rights that is employed together with a military intervention power), but fortunately this is not the only possibility for cooperation or symbiosis between the two.

2.2.4 *From Human Nature to Human Being: From Essence to Existence*

My purpose in the previous pages was not to side with either transhumanists or conservatives. Rather, my discussion so far suggests that both sides may be able to converge on a dynamic, variable notion of human nature while facing the task of defending their own view on whether or not human enhancement—the change of human nature by *technological* means—is allowed or should be encouraged.¹¹

However, I am still dissatisfied with the notion of human *nature* that plays such an important role in the discussion as framed above. On the one hand, its use suggests too much the pre-nineteenth-century view I rejected as implausible and undesirable. On the other hand—and here I add further objections to transhumanism—if the notion of *nature* is understood in the terms of evolutionary biology only, there is the danger of naturalism, by which I mean the tendency to understand who we are *only* in the terms provided by natural science. (A similar danger lurks in deterministic social science.) In order to avoid these approaches, I would like to change the key term of the discussion from *human nature* to *human being*. Let me explain why; let me show what can be gained by this conceptual operation. This means that I will (have to) make explicit what kind of direction I believe we should take when thinking

¹¹ Note that later in this book I will further develop and modify my view (Chap. 6).

about what we are and which philosophical traditions can be helpful for this purpose. This will clear the ground for the anthropology I will develop in the next chapter.

How can we conceive of human nature in dynamic terms and still account for the intuition that human experience and human existence is unlike that of any other living being? What kind of approach to *the human* do we need?

First, we need a notion that allows for change but that also acknowledges stability. We are willing to accept evolutionary and historical change, but we still want to account for the intuition that there is *something* that is common to what it is to be human—something that remains stable over time. After the lessons of nineteenth- and twentieth-century natural and social sciences, however, we do not want to understand this *something* as a common *characteristic* or capacity such as reason, language, or intelligence; in short, we do not want to employ the notion of an *essence*.

Second, the social and psychological sciences have studied culture and (human) consciousness, but their (tendency towards) determinism fails to do justice to our intuition that we are, to a significant extent, *free* beings. (Note that in spite of the overt deterministic naturalism of some of its proponents, the transhumanist project assumes such a freedom, since it asks us to become aware of the possibility to shape our own nature.) Thus, we are willing to accept the influences of social and psychological processes on what we are, but we also want to leave room for human freedom—at least including the freedom to manipulate nature, to construct societies, and to shape ourselves (however problematic these conceptions of freedom and their consequences may be—see my discussion in the fourth chapter).

Third, we need a notion that acknowledges both the individual and social dimension of who and what we are. We experience the world from a first-person perspective, but this need not imply a view that disregards the importance of the social. We are *also* social beings; social relations and society co-shape who we are as individuals and what we are as humans.

Fourth, we need a notion that does not radically separate culture from biology, the human from technology, and culture from technology. The physical aspect of our being and the material aspect of the world we create(d) are both crucial for what we are as humans, and these aspects are deeply related to the social and cultural aspect of our world(s). As Latour has argued (Latour 1993), cultural anthropology, initially developed for studying non-Western cultures, provides us with a model of our own (Western world): we too live in a material culture. Latour has argued that there is a network of humans and non-humans; whereas modern thinking strictly separates humans and things, he argues that the social has always been a collective of humans and non-humans and that they have never been separated in the first place—and that in this sense we have never been modern. Whether or not we accept his claim that there is symmetry between humans and non-humans, this is a refreshing view of the social, which helps us to more fully appreciate the crucial, indispensable role of materiality and technology in human culture. And as I already mentioned, contemporary philosophers of technology also show how the human is very much intertwined with technology. For example, influenced by *postphenomenology*, Latour, and Borgmann, Verbeek has argued that material artefacts shape our existence and experiences: they mediate our experiences and our actions (Verbeek 2005).

I feel that the notion that responds best to these criteria is *human being* rather than *human nature* and the approach I endorse is inspired by existential phenomenology, pragmatism, existentialist philosophical anthropology, and contemporary philosophy of technology. Here I begin to offer my argument for this choice, but this argument will be continued in the next chapters: my analysis of vulnerability and its transformations will *show* the gains of this approach. Let me enumerate some methodological building blocks I borrow from the perspectives mentioned above.

First, an existential (but not necessarily existentialist) approach provides an attractive response to the problem of the variability of *human nature*. Instead of looking for the *essence* of human nature, it refocuses on the *existence* of *human beings*. Instead of asking what we are, it asks *how we exist*. With regard to human enhancement, this means that an ethics will have to rely on an anthropology that studies the potential influence of human enhancement technologies on human existence.

Second, phenomenology and pragmatism draw attention to the way we humans *experience* the world and the way the world *appears* to us. Whatever else it may be, what we call *freedom* is a particular experience we can have as humans: I experience a difference between me and the world, *and* it appears that what I do *matters* and changes the world (and vice versa). Freedom concerns my experience of the relation between me and the world. In that sense, freedom is unavoidable, as the existentialists (e.g. Sartre) knew. Thus, the claim about freedom is not understood as statement about the world but about human existential experience—how we relate to the world. We can acknowledge this in the discussion about human enhancement by not only discussing what the new technologies do to our genes, our body, etc., but also what they do to our existential experience. For instance, we can study whether or not, and in what ways, some (enhancement) technologies threaten or support our experience of freedom.

Note, however, that recognising this existential freedom and acknowledging that we have the possibility to change what we are do not necessarily imply that we must accept the (different) claim that the human is *entirely* a matter of technological *design*. First, existential freedom does not necessarily mean freedom of (technological or other) *action*. Rather, we are only committed to saying that humans have subjectivity and that we have *some* freedom of action. Let me start with the former. Sartre writes:

For we mean to say that man primarily exists – that man is, before all else, something which propels itself towards a future and is aware that it is doing so. Man is, indeed, a project which possesses a subjective life, instead of being a kind of moss, or a fungus or a cauliflower. (Sartre 1948, p. 28)

This is important for vulnerability: as humans, we are *aware* of our vulnerability, and as I will argue, part of human vulnerability is created by our particular mode of experiencing vulnerability. However, recognising this existential freedom does not necessarily imply that we have full freedom of action, let alone technological action. The space within which we can *make* or *design* the human is subject to various constraints, and once we create or design something within that space, its ethical and social consequences and meaning are not restricted to our concept and design. We can think about what we want when it comes to vulnerabilities, but we cannot necessarily *have* what we want. This is especially true for specific vulnerabilities, which are not just up to design. For example, if we want to engage in *genetic*

engineering, we do not have full control over the human genome since we do not fully know what all the genes do, and once we change something, we do not fully control the biological, ethical, and social consequences of this *genetic* change. But this is not only so in the case of *human enhancement* technologies; all technological change is only partly a matter of design. To think that we can—in principle—fully control and design the world and that we can become masters of nature and masters of society is a typical modern error. To think that we can fully master technology is a similar error. Heidegger's term *fate* is maybe too strong a term, but his reflections on technology (e.g. Heidegger 1977) suggest that the emphasis on control and the means-end thinking that goes with it is part of the problem of modern technology. Technology and vulnerability are only partly the result of planning and control; like the human, they come into being and grow within a particular environment, which shapes them and which is shaped by them. Technology shapes our ways of thinking and doing as much as we shape technology. And what vulnerabilities we will have depends only partly on us. Hence if I talk about designing the human, about a *normative anthropology*, and about an ethics of human vulnerability, this should always be read with the qualification *in so far as* or *to the extent that* we can design and *in so far as* or *to the extent that* we can control the form of our vulnerability and what the human is. Those who employ the sorcerer's apprentice metaphor and suggest that first we had mastery over technology and then lost control (e.g. Dupuy 2009, p. xiii) fail to take into account that both technological action and the human have always been somewhat *out of control* and that both have always been partly designed and partly *not* designed—that is, the human is always also a *given*.

Third, the human existential condition is deeply social and cultural. All serious reflections in philosophical anthropology have acknowledged this, but it remains difficult to understand the precise relation between the individual and the social-cultural. Cultural anthropology tends to put too much emphasis on the social-cultural side, whereas most existential accounts tend to over-emphasise individual experience. In any case, the notion of human being leaves more conceptual space for the social aspect of human existence than the concept of *human nature* did, at least if the latter is understood as referring to features of humans as individual organisms. With regard to human enhancement, it is important to keep the social-cultural aspect in mind. The ethical-anthropological question concerning human enhancement is not (only) about what technology may do to individual existence but also about what it may do to society and to communal existence. Philosophical anthropology can be aided by cultural anthropology for this purpose. For example, as I will show in the next chapter, we might take inspiration from empirical, narrative *existential anthropology* (Jackson 2005), which connects existential phenomenology with cultural anthropology, pragmatism, and critical theory.

Fourth, as I already said several times, human being should not be understood as radically separate from technology. Modern technology may be problematic. But changing and shaping matter and bodies—even if that always takes place within particular constraints and can never be fully controlled—is part of what human existence is about. The notion of *human being* is broad enough to include this technological aspect of human existence; whereas the notion of *human nature* suggests too much separation between *nature* and technology, between *nature* and culture,

and between *natural* humans and the technological world. An anthropological and ethical analysis of human enhancement technologies should employ a notion of human being that connects human being with technology and clarify this connection. Contemporary philosophy of technology can help to achieve this aim.

Having explained my choice of the term *human being* and my approach, let me introduce some advantages of my focus on vulnerability as the main theme of this book. These advantages both strengthen and complement those I associated with the term *human being*. The concept of vulnerability I will employ in the next chapters has the advantages that it connects facts and feeling, the objective and the subjective, body and mind, sense and perception, and world and experience (see especially my arguments in the next chapter). Vulnerability can be framed in the language of natural science (in probabilistic rather than deterministic terms, given the nature of risk), but it can also refer to our existential experience of vulnerable being. Used in the latter way and used in conjunction with the term *human being* and the existential approach, the term vulnerability allows us not to reject science and its naturalistic approach to human being but to argue for an approach that goes beyond a mere scientific analysis of what it is to be human. It is a broader approach that reveals the scientific view as only one way of framing human being and human vulnerability. Furthermore, I will understand human vulnerability as variable, as changing, which contributes to understanding human being as variable. How it may change is partly in our hands. In order to exercise our responsibility with regard to that handling, we need a descriptive and normative inquiry into vulnerability changes—and therefore changes to the human.

In the next chapters, I will sketch an anthropology of vulnerability, which is to inform an ethics and politics of technology (present technology and future technology), including an ethics and politics of human enhancement and of new information technologies. I will start with a descriptive anthropology, and then I will turn to an outline of elements for a normative anthropology of vulnerability.

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