

## Genetic Enhancement: A New Dialectic of Enlightenment?

Several of the most illustrious contributors to Enlightenment thought are strikingly ambivalent about the idea of nature, whether as a source of social equality or the basis of human identity. In the name of natural equality and inalienable rights of all persons, these men reject feudal hierarchies that distribute social standing on the basis of birth – but then promptly legitimize observable inequalities among human populations, predictably to the disadvantage of the non-white populations of Africa, Asia, and the Americas. Voltaire for example certainly promotes a certain égalité: all men are equal who by their nature possess the relevant skills. Yet he then construes phenotypical differences (the visible characteristics of an organism that follow from the combined effects of genes and environment) between dark- and light-skinned humans toward assigning each race a different relative „value“ in a hierarchy of mankind. His vision of blacks („on peut dire que si leur intelligence n'est pas d'une autre espèce que notre entendement, elle est fort inférieure“)<sup>1</sup> extends to Jews as well: „On les regardait du même oeil que nous voyons les Nègres, comme une espèce d'hommes inférieure.“<sup>2</sup> From an ethical viewpoint Kant claims that all persons are free by virtue of their humanity alone: „Da das Erzeugte eine Person ist und es unmöglich ist, sich von der Erzeugung eines mit Freiheit begabten Wesens durch eine physische Operation einen Begriff zu machen, so ist es eine in praktischer Hinsicht ganz richtige und auch notwendige Idee, den Akt der Zeugung als einen solchen anzusehen, wodurch wir eine Person in die Welt gesetzt haben.“<sup>3</sup> But from an anthropological standpoint Kant declares various human groups (including those defined in terms of race or ethnicity) to be „unequal“: „Die Menschheit ist in ihrer größten Vollkommenheit in der Race der Weißen. Die gelben Indianer haben schon ein geringeres Talent. Die Neger sind weit tiefer, und am tiefsten steht ein Theil der amerikanischen Völkerschaften.“<sup>4</sup> That standpoint refers to the individual's morphological features of appearance, from which Kant derives such racist conclusions. Diderot, in his *Supplément au voyage de Bougainville*, clearly champions diversity among human beings and among cultures yet also deploys his version of the idea of a „great chain of being“<sup>5</sup> to elucidate and

1 Voltaire [François Marie Arouet], *Essai sur les mœurs et l'esprit des nations*, in: Œuvres Complètes de Voltaire, Tome XII, Paris 1878 [1756], p. 357.

2 Voltaire [François Marie Arouet], *Essai sur les mœurs et l'esprit des nations*, in: Œuvres Complètes de Voltaire, Tome XI, Paris 1878 [1756], p. 223.

3 Immanuel Kant, *Metaphysik der Sitten*, in: Kants Werke. Akademie Textausgabe, Berlin 1968 [1797], pp. 280–281, here § 28, Das Elternrecht.

4 Immanuel Kant, *Physische Geographie*, in: Kants Gesammelten. Akademieausgabe, Band IX, Berlin 1923 [1804], pp. 151–436, here p. 316.

5 Scala naturae, échelle des êtres, Seinskette: a metaphysical conception of the universe, found in both Plato and Aristotle and revived by Enlightenment authors Descartes, Spinoza, and Leibniz, among others.

legitimize social inequalities among different human communities as differences in motivation, productivity, and social utility.<sup>6</sup> According to his *Encyclopédie* article titled *animal*, „l'état de cette faculté de penser, d'agir, de sentir, réside dans quelques hommes dans un degré éminent, dans un degré moins éminent en d'autres hommes, va en s'affaiblissant à mesure qu'on suit la chaîne des êtres en descendant, & s'éteint apparemment dans quelque point de la chaîne très éloigné.“<sup>7</sup> His article on *humaine espèce* concludes that „il n'y a donc eu originairement qu'une seule race d'hommes“ even as it distinguishes various non-European peoples as „une race d'hommes dégénérée“, „grossiers, superstitieux & stupides“, with „les traits de la race primitive“. Further, „ils n'ont ni mœurs ni religion“ and „quoique en général les nègres aient peu d'esprit“.<sup>8</sup> For Rousseau, nature, not society, offers the way of life most appropriate to man, and Rousseau's conception of the natural condition of man betrays neither racism nor anti-Semitism.<sup>9</sup> Yet his theory of the „noble savage“, which serves as the very fulcrum of his civilizational critique,<sup>10</sup> too easily resembles the domesticated slave of European colonialism.

In these various ways, one face of Enlightenment ambivalence regards nature as yielding to culture. It regards culture as human will and imagination in its limitless plasticity, as the capacity to shape and endlessly reshape ideas, artifacts, and institutions. Another face regards nature as that which sets limits to human belief and behavior, or that which defines the contours of what we humans have no choice but to accept. Today this Janus-face gazes out from the debate over genetic engineering. The debate often portrays the human genome as determining man's „natural destiny,“ just as it depicts socialization and other social learning processes as man's „cultural fate.“ By *socialization* I mean the adoption of normed forms of thinking and behavior, that is, common understandings and practices widely shared and individually acquired through a lifelong process of learning and internalization. This is one way in which the individual continuously works out his individualized identity. A very different source of individualized identity may be found one day soon in genetic design at the embryonal stage of life.

The Enlightenment ambivalence toward nature disallows the traditional belief that „human nature“ is a fixed, unchallengeable and unchanging normative foundation for human belief and practice. In fact, „human nature“ cannot resist the

6 Denis Diderot, *Supplément au Voyage de Bougainville*, in: Diderot. Œuvres Complètes, Tome XII, Paris 1989 [1772], pp. 577–647.

7 Denis Diderot, *Animal*, in: *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers par une société de gens de lettres*, Tome I, eds. Denis Diderot/Jean-Baptiste le Rond d'Alembert, Paris 1976 [1751], pp. 635–648, here p. 642.

8 Denis Diderot, *Humaine espèce*, in: *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers par une société de gens de lettres*, Tome XVIII, H-IT, eds. Denis Diderot/Jean-Baptiste le Rond d'Alembert, Stuttgart 1966 [1755], pp. 344–348, here pp. 348, 344, 345, 347.

9 Jean-Jacques Rousseau, *Discours sur l'origine et les fondements de l'inégalité parmi les homes*, Paris 1965 [1754].

10 Ebd.

gravitational pull of the science and technology of modern biology. The maelstrom of technical reconstruction draws it in, no less than it draws in the natural environment; „inner“ and „outer“ nature are equally subject to human-driven change.

And so in Enlightenment manner, the debate over genetic manipulation asks if social inequality is „natural“ or instead socially constructed.<sup>11</sup> Where inequality is seen as a matter entirely of social construction, and no longer a result of anything natural, at that point nature yields to culture and human *nature* increasingly turns into human *culture*. Humans might be thought to be morally responsible for the cultures they create, and if so, then they are responsible for social inequalities within and among cultures. In response to that responsibility, cultures can be revised, improved, sometimes perhaps even optimized. In the age of biotechnology, man himself becomes an Enlightenment project of optimization. According to Diderot, here in his role as chief editor of the *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, which was published between 1751 and 1772 in 28 volumes, the Enlightenment seeks nothing less than „changer la façon commune de penser.“<sup>12</sup> In nearly 72 000 articles, the *Encyclopédie* would optimize all of human culture by unleashing the potential for enlightenment not only at the level of individuals but in the species entire. Yet in many ways the *Encyclopédie* is ambivalent: it recognizes all persons as equally capable of development, but only in principle, given its Janus-like estimation of external nature, human nature, and the world's distinct and peculiar cultures.

The same ambiguity marks the contemporary Enlightenment project of human optimization through eugenics, which approaches the human embryo as an object of medical intervention and human technology. It views the embryo as a piece of nature that can be made to yield to culture, ultimately to the point of humanity taking control of its own genome. The human body then appears like any other phenomenon of the natural world: capable of „improvement“ in the sense, for example, of regarding current average life expectancies as defective and inadequate, perhaps even as a „disease“ to be cured. This perspective transforms anthropological constants into technical options such that what we humans are by nature becomes dependent in part on decisions we make as carriers and creators of cul-

11 Social constructionism has antecedents in Enlightenment thought, for example Vico's: „<<verum>> e <<factum>> sono ... sinonimi o ... si convertono l'uno con l'altro“; further, „il vero ed it fatto sono la stessa cosa“. Giambattista Vico, *L'antichissima sapienza degli italici*, in: ders., *Metafisica e Metodo*. Milano 2008 [1710], pp. 185–315, here p. 195. I pick up on this social constructionist approach to social and political analysis and apply it to various spheres of life. See Benjamin Gregg, *Coping in Politics with Indeterminate Norms: A Theory of Enlightened Localism*, Albany 2003; Gregg, *Thick Moralities, Thin Politics: Social Integration across Communities of Belief*, Durham 2003; and Gregg, *Human Rights as Social Construction*, Cambridge 2011.

12 Denis Diderot, *Encyclopédie*, in: *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers par une société de gens de lettres*, Tome V, DO-ESY, eds. Denis Diderot/Jean-Baptiste le Rond d'Alembert, Stuttgart 1966 [1755], pp. 635–648, here p. 642.

ture.<sup>13</sup> As nature becomes an Enlightenment undertaking of society, human nature increasingly becomes a contingent expression of human will and imagination.

The Enlightenment's ambiguity about the idea of nature shapes the question: is intervention in the human genome a matter of technological freedom and „perfectionism“ – or does it violate, in a normative sense, individual autonomy and species-identity? The first case, which argues for intervention-as-freedom, regards biotechnical transformation as properly limited by nothing but human preference. Genetic engineering then constitutes the self-empowerment of humankind, and this capacity to control is the path to autonomy from nature, quite beyond current reproductive technologies, organ transplantations, or medically assisted suicide. Genetic enhancement might even be regarded as an Enlightenment imperative: if, with Kant, one regards the meaning and purpose of nature to lie in the existence of moral beings, and in their moral behavior, then genetic manipulation, insofar as it „improves“ human nature, constitutes the „perfecting“ of what Kant calls „die Schöpfung“. A Kantian argument for reproductive cloning and germ-line gene therapy<sup>14</sup> might advocate, as an ethical duty, the perfection of man's natural being. Given that „die vernünftige Natur als Zweck an sich selbst existiert“, surely an „enhanced“ human being is more „vernünftig“ than one not enhanced.<sup>15</sup>

The second case regards genetic engineering as a self-destructive „dialectic of Enlightenment“ in which mankind, in its relation to nature, reverts from domination to servitude. Max Horkheimer and Theodor Adorno articulate this sense of Enlightenment as a „dialektische Verschlingung von Aufklärung und Herrschaft, das Doppelverhältnis des Fortschritts zu Grausamkeit und Befreiung“, such that „die Freiheit in der Gesellschaft vom aufklärenden Denken unabtrennbar ist,“ even as „die konkreten historischen Formen, die Institutionen der Gesellschaft, in die es verflochten ist, schon den Keim zu jenem Rückschritt enthalten, der heute überall sich ereignet.“<sup>16</sup> Note that, in today's context, „Freiheit in der Gesellschaft“ could easily refer to genetic manipulation – but no less easily than could „Keim zu jenem Rückschritt.“

I will argue that genetic manipulation need not spell an unintended and surely unwanted dialectic of Enlightenment. I will also argue that it can promise an untroubled autonomy from natural fate if not from a certain socio-economic fate. One could easily make this case for therapeutic intervention, which is aimed at healing, for example to control for birth defects, or a congenital predisposition to cancer, or Parkinson's and Alzheimer's. The case is less easily made with respect to biotechnological manipulation to „enhance“ someone's body (at the point, say, of

13 Wolfgang van den Daele, *Die Natürlichkeit des Menschen als Kriterium und Schranke technischer Eingriffe*, in: *Wechselwirkung* 21:103-104 (2000), pp. 24–31, here p. 24.

14 Such therapy introduces functional genes into sperm or eggs; once integrated into the genomes of the sperm or eggs, the functional genes are heritable.

15 Immanuel Kant, *Grundlegung zur Metaphysik der Sitten*, Paderborn 2002 [1785], p. 148.

16 Max Horkheimer/Theodor W. Adorno, *Dialektik der Aufklärung*, Frankfurt a. M. 1981 [1944], p. 193.

the eight-cell embryo's genetic composition) with respect to sex or skin color, or intelligence, athleticism, or artistic capacity. My argument allows for a cautious embrace of Enlightenment perfectionism but no unqualified embrace. The real problem, I will argue, is not genetic manipulation that undermines human nature because „human nature“, biologically understood, is „natural“ in some metaphysical or theological sense of something sacred and vulnerable to violation and desecration by human intervention. The real problem is unequal access, domestically and globally, to genetic manipulation that one day could improve health.

### I. The case against enhancement

Two of the three most intriguing arguments against genetic manipulation have a distinctly economic aspect. One claim is that manipulation is wrong (a) because it would be guided by subjective market preferences. Or it is wrong (b) because access to it would be unequally distributed. A third argument (c) distinguishes between genetic manipulation of the embryo and the cultural „manipulation“ of the growing child. These three arguments are interlinked, as I will show.

(a) Is a market paradigm inappropriate for regulating genetic manipulation? This question concerns the motivation of the enhancers, most likely the parents of the embryo. It likens them to consumers, driven by subjective, individual preferences, if not ill-considered impulses as they shop in a „genetic supermarket“ oriented on profits and self-regulated by supply and demand. According to Jürgen Habermas, the recipient, once he or she reaches adolescence, may well have different preferences but, having been treated at the embryonal stage as an object bent to the egocentric will of market participants, he or she may suffer psychologically, and without recourse to alter the possibly unwanted consequences of eugenic decisions that others made on his or her behalf, before birth.<sup>17</sup>

This objection rests on two assumptions: that a genetically modified organism that develops into an unmistakable human being is reduced to a commodity; and that decisions, highly consequential to the life of that human being, were made without his or her input, and which he or she has no way to reject after the fact. The second of these presuppositions raises the issue of paternalism, which I address in (c). The first presupposition speculates about how the recipient might regard having been genetically manipulated, and supposes that he or she would react negatively. But what if genetic enhancement were viewed as a social good, by the recipient no less than by the parents? I turn now to that possibility.

(b) Suppose the issue is not the recipient's autonomy from decisions made by others but rather equality of access to genetic enhancement considered as a scarce (because expensive) good. Here we have some of the familiar problems of modern health-care systems, such as problems of cost and access. Social equality is at issue here because justice, at least in modern, liberal societies, properly addresses itself to

<sup>17</sup> Jürgen Habermas, *Die Zukunft der menschlichen Natur*, Frankfurt a. M. 2002.

overcoming some natural disadvantages (such as blindness or mental retardation) through entitlements to socially constructed advantages (such as special schools for the handicapped or transferring information into a form accessible to the blind or deaf). That is, someone disadvantaged in one „sphere of justice“<sup>18</sup> might be compensated by receiving a share in some other sphere. So someone disadvantaged first by nature and then by community, where community fails to compensate for the person's natural disadvantage, enjoys no justice.

To the (limited) extent that genetic enhancement addresses „losers“ in the natural lottery of genetic gifts, it may sometimes offer a just re-distribution of natural goods. This argument favors the enhancement of genes leading to „abnormal“ or „below average“ characteristics, in distinction to genes controlling characteristics of solely cosmetic interest, and in distinction to the enhancement of genes toward obtaining superlative or above average characteristics.<sup>19</sup>

If a social lottery based on the unequal distribution of wealth is ethically and politically objectionable, then no less objectionable is a natural lottery *if* the unequal distribution is a consequence of unequal access – say, because one's parents did not have the economic power to purchase enhancement, or because of a political community's regulations, or the objections of a religious tradition. In light of globalization, and the likelihood that some medical techniques may be prohibited in some countries but not in others, one can imagine forms of medical tourism available only to the rich – and, on this argument, therefore unjust.

(c) Justice involves the possibility of reversing unwanted conditions. Justice in political community would include reversing economic exploitation, the denial of political rights, social marginalization, and the various forms of structural violence. Justice in terms of genetic enhancement would include reversing the natural distribution of „poor“ or „abnormal“ genes.

But what of Habermas's concern with justice along another dimension: how a recipient might regard having been genetically manipulated? What if, at whatever point in life, he or she objects, for whatever reason? Likely no one would prefer to be physically or mentally handicapped, but one can easily imagine someone objecting to having had his or her sex, skin pigmentation, or athletic capabilities determined by others. Would we not say that the recipient (at the embryonal stage) had been treated contrary to what, at a later stage, developed as his or her will? Would

18 Michael Walzer, *Spheres of Justice. A Defense of Pluralism and Equality*, New York 1983.

19 Conceptions of „abnormality“ and „illness“ in human biology and medicine cannot but be culturally influenced to some degree. Such conceptions reflect standards and expectations of „normality“ and „health“. Standards and expectations sometimes shift along with social and cultural developments. For example, in 1952 the American Psychiatric Association classified homosexuality as a disorder but in 1973 removed it in recognition of scientific evidence. In 1977 the World Health Organization identified it as a mental illness – but not after 1990. The Chinese Society of Psychiatry regarded homosexuality as a disorder until 2001. In many countries in the world today, including the USA and China, whether homosexuality is „normal“ is far from settled culturally and legally, and is exceptionally vulnerable to organized political preferences within a polity. Significant to the debate over genetic engineering is that a shift in standards and expectations of „normality“ then likely shift the boundaries of medically and morally allowable bodily intervention.

we not argue that the freedom of parents to improve the genetic makeup of their child wrongly trumped a possible right of that child to be free of being engineered? These are questions about paternalism, about an asymmetrical relationship in which the recipient has no possibility to refuse what is done to him or her genetically (even prior to achieving identity as an individuated human being).

Less controversial is paternalism toward the young with respect to what might be called „cultural manipulation“: steering the contingencies of someone’s socialization (notably that of one’s child) and his or her exposure to other learning processes. To be sure, paternalism of this sort can sometimes lead to very unhappy results and might well be rejected by the recipient, if only after the fact. Here, too, justice depends on the possibility of reversing unwanted conditions. Habermas argues that the „culturally manipulated“ individual retains, at least in principle, the freedom of self-critically appropriating his or her developmental history, which he or she might wish to do if that history were problematic or had produced unwanted consequences. Such freedom is possible because cultural manipulation of a person’s attitudes and expectations, unlike the genetic modification of hereditary factors, is a communicative relationship between manipulator and recipient. By means of communication, the recipient might place into question, interpret, or even revise the results of his or her socialization and other aspects of biography, much in the way that some psychological disorders may yield to the patient’s self-reflexive appropriation of aspects of his or her social genealogy, such as upbringing. To change one’s self-understanding in this way can affect not only how one interprets oneself; it can affect who one is, how one copes, and what one does. Communication at this personal, individual level is analogous in some respects to communication at the level of political community, in the sense that social critique, progressive social policy, and emancipatory politics can sometimes revise or reverse unwanted social conditions or results. Justice depends on such reversibility, and even if reversibility is no longer available to immediate victims, it may be available to later generations.

But justice by means of reversibility is not available to the person whose organic disposition has been manipulated in ways that he or she may come to reject. Communication here can only be a complaint, without emancipatory power because it cannot revise or undo what has been done but only lament it. The recipient is irreversibly dependent: an organism’s genome, changed at any early stage of development, cannot be changed back. The prenatal production of his or her genome confronts the recipient as something that, beyond the limited agency of interpretation and regret, has made itself independent of the recipient’s effective agency. But even interpretive agency cannot demand accountability from the manipulators: the recipient can hardly call to account those who manipulated his or her genes, because the manipulation cannot be undone, and the manipulated cannot exchange roles with the manipulator.

In short, the cultural elements of human life, and the natural ones, are both plastic and malleable yet not in the same ways. Genetic plasticity is one-way: the recipient experiences the changes as unalterable. Of course, in a genealogical sense every

child is genetically dependent on its forebears. This relationship is irreversible but not therefore unjust; fate at the hands of anonymous forces is not unjust in the way that fate at the hands of specific human actors can be.

Further, eugenic interventions could even undermine the egalitarian foundation on which liberal democratic community stands, not only if interventions preclude any symmetry of responsibility among all members of the community, but also if some humans are genetically modified in ways that render them intellectually or otherwise far superior to many other members. To treat all members of the human family on the basis of fundamental equality does not require the non-existence of exceptionally gifted persons but only that those gifts are not the result of genetic manipulation. Members of a political community can be free and politically equal as long as their relative advantages over others does not result from genetic manipulation. On the other hand, persons „naturally equal“ become „naturally unequal“ if the option of genetic enhancement is accessible only to the wealthy and privileged, a point I will develop in later pages.

## II. The case for enhancement

One might argue for genetic enhancement (a) in terms of the Enlightenment idea of using culture – in the large sense of human artifice – to win ever greater autonomy from nature. Mankind in this sense identifies with domination of nature, not servitude. And one could argue for genetic manipulation along two other dimensions of human identity: (b) presumably we each would hope to be able to identify with our body and (c) likely we each would hope to be able to identify with our political community with respect to its regulation of technologies of such far-reaching consequence for recipients as genetic manipulation.

(a) Can genetic enhancement redeem the Enlightenment promise of helping humanity attain ever greater autonomy from nature, by means of human artifice? To the extent that we transform aspects of natural fate into cultural choice, our dependence on nature is reversed. And to that extent, nature no longer offers itself as a normative ground for deciding questions of cultural fate. Biological nature ceases to be an indispensable reference point for cultural interpretation, and political community no longer appeals to this or that understanding of nature to answer such questions as: does the biological (such as the egg cell) „possess“ cultural constructions (dignity and rights, for example) – and if so, in what sense of „possession“? Can morality (dignity and rights) be ascribed to nature understood as life at stages before birth, for example that of the eight-celled embryo? Does the fertilized egg cell possess „human dignity“? If not, then at what point in development might it acquire such dignity, and how? The same question can be posed with regard to „human rights“: at what point does the biological stream that results in a person become identified with that person – in the *cultural* sense of a being capable of possessing dignity or rights? And last but not least: which genetic manipulations should be allowed, and which not, and on what socially constructed basis?

One could argue from an Enlightenment perspective that such questions about human nature can only have cultural answers because moral framing is socially constructed and not biological or otherwise natural, especially as human culture increasingly affects aspects of human nature. Human life, even in its earliest stages of development, is then best described in terms of this or that comprehensive worldview rather than in terms of natural fate. To the extent that genetic manipulation replaces nature with culture, biological nature no longer ascribes many core aspects of human identity, and no longer is ascription beyond the reach of human culture.

Genetic engineering offers significant scope for rendering the physical basis of human biological life manipulable, indeed in normatively guided ways that might contribute to greater social equality. The project of creating social equality might free itself increasingly from the natural, genetically determined traits that determine the social fates of so much of mankind. Genetic manipulation could do this where it targets „harmful“ or „below average“ traits and modifies them in socially positive ways. Then the individual's organic disposition would increasingly become socially constructible as one normative basis for human equality among others. And the displacement of natural ascription would allow for social equality on the basis of social constructions, such as legal equality within political community and, ideally, between and among different political communities.

Genetic engineering might even allow us to determine who is socially equal and who is not, and then render equal persons who are naturally unequal, by rendering them equal along social, political, and legal dimensions. To be sure, questions of social justice cannot be answered by genetic engineering itself; genetic engineering can be just only once a political community has determined in concrete terms what justice is. The tasks of defining, interpreting, and guaranteeing justice remain tasks for the Enlightenment. And as we saw, some of its most illustrious contributors in the past struggled, as we must struggle today, to generate cultural interpretations that make sense of biological aspects of *Homo sapiens*, especially interpretations that might eventually achieve consensus within political communities and across cultures.

(b) The question then poses itself: is an embryo ever a member of cultural, political and moral community, particularly with respect to whether it may, according to the norms of that community, be manipulated? And if it can be a member, then in what sense? This is a question of identity: what exactly is the embryo and, from a moral and legal standpoint, what is the human body into which it develops? Any plausible answer would consider both natural and cultural aspects. In fact, here the natural and the cultural flow one into the other. We are born with some aspects of identity inasmuch as we are born with a body, and acquire other aspects later, through socialization and other accretions of our biography. The embryo precedes both types of identity even as it lies on a continuum with both. That continuum does not imply any reason for social norms that would prohibit genetic engineering of the embryo in a misguided attempt to „protect“ the individual's „natural self“, as if manipulation destroyed the individual's eventual capacity to be him- or herself, or as if we humans can be aware of our freedom only if our natural fate was never at the disposal of other humans.

The *cultural* identity of an embryo is also the *natural* basis for anyone's personal identity, namely one's body. The body distinguishes between what we as individuals do, and what is done to us by others: between acting in the world and being acted upon, between active and passive. It allows one to view oneself as someone to whom actions can be ascribed, as someone confronted by moral dilemmas, and as someone with life-plans and personal preferences. The body is always in-the-world, embedded in time and space. One's identity through time (who one „is“) is also sustained through physical location (where am I? where is north or south from me, above or below me, within or outside of me?) and spatial extension (how do I negotiate my way through the world of objects and subjects?). That identity is sustained through the distinction between self and environment: where do I end and the external world begin? What is part of me and what is alien to me? And the body has a history that endures through all the vicissitudes of an individual human existence. Without an identity rooted in our natural body, we could not achieve the conviction of self-identity over time so fundamental to any conception of being a distinct individual cohereing through time and across experiences, and of having a more or less unified narrative of one's life-to-date, physically, psychologically, and socially.

To have a somatic identity is to be „embodied“, which means two things at once. It means that one „has“ a body and that one „is“ a body.<sup>20</sup> The first sense invokes a physical dimension, in that sense, nature; the second sense refers to a cognitive dimension, and to the cultural constructions of the mind. The two senses come together in that the individual *is* the body that he or she „has“, and *has* the body that he or she „is“. (In this context it appears that even genetic therapy, no less than genetic enhancement, manipulates the patient's identity: to heal someone genetically is to manipulate his or her identity.)

This distinction between the two ways in which we identify with our own bodies is not rigid or absolute or even entirely distinct. I would argue that the boundary between somatic identity and cultural identity, between what we „are“ and who we „make“ ourselves into, is porous. The boundary between them is so porous that any distinction between nature and culture, and specifically between somatic identity and cultural identity, threatens to collapse. And at those points where it does collapse, we need not fear that knowledge of having been manipulated at the embryonal stage will damage the individual's self-understanding and self-regard. After all, why should someone identify with his or her non-manipulated genetic predispositions yet not with manipulated ones? Why should one not feel „at home“ in a body that was genetically manipulated before birth, before one's identity had formed?

20 In Plessner's sense of „is“ and „have“: „Der Körper vereinigt [...] die Eigenschaft, Subjekt des Habens zu sein, mit der Eigenschaft, Objekt des Habens (sein Körper) zu sein, dadurch, daß er zum Mittel des Habens wird“, such that: „Das Mittel des Habens, das der Körper hat, ist die Einheit von Haben und Gehabtsein, von Subjekt und Objekt am lebendigen Körper, ihre Vermittlung zu seiner Ganzheit“, Helmuth Plessner, *Die Stufen des Organischen und der Mensch. Einleitung in die philosophische Anthropologie*, in: Helmuth Plessner. Gesammelte Schriften, Band IV. Frankfurt a. M. 1981 [1928], p. 250.

To be sure, no one knows how such a person might regard him- or herself. What is certain is that all humans share an understanding of their individual embodiedness; at a fundamental level, each body corresponds to all other bodies. By *correspondence* I mean a resonant understanding of, an empathy with, the embodiedness of other persons. On this basis the notion of human rights is possible, for it allows any person to understand, at a direct existential level, what bodily and psychological harm is.<sup>21</sup> In its vulnerability, one's body mirrors the vulnerability of all other bodies, and this felt correspondence could always, and should always, inform our thoughts about intervening into another person's body. It offers normative guidance to clinical intervention (a physician can readily understand the patient's pain, for example) and could offer guidance to biotechnological intervention as well. Such resonance between and among humans need not be threatened if some of them have genetically modified bodies.

(c) Who belongs to a political community whose members are accountable to each other for their actions and omissions, and on the basis of which of their features do they so belong? At birth, the human organism is individuated biologically but not yet socially and culturally. Only through social and cultural individuation can one become a person in the full social sense of the term: to be a member of a shared political community, to be responsible to others in private and public contexts, and to be recognized by others. Here I return to my question: is an embryo, positioned as it is between nature and culture, ever a member of cultural, political and moral community, in a way that might inform questions about the morality of genetic engineering? To be sure, the embryo is a member of the species, but the species is not itself a political or moral community, but rather a natural one. So one might think that biological individuation via birth is not yet social individuation, and that social individuation can occur only later, in various kinds of community.

But perhaps the embryo, or the child in utero, is already a member of political community, before birth, before the locally preferred rites of passage. Perhaps an organism can be a member even before it becomes an unmistakable human, a fully-fledged member of political community, endowed with will and imagination, reason and emotion. To answer the question this way is to ban the Enlightenment shadows I sketched at the beginning of this essay. To treat the identity of the embryo as „nature-become-culture,“ and as a member of community, is *not* to treat it like any of the „others“ constructed in the narratives of Voltaire or Diderot, Kant or Rousseau. The embryo so understood is not some analog to the „noble savage,“ the Jew, or the dark-skinned „other,“ an analog that yet might be brought into community by means of genetic enhancement that could correspondingly enhance it socially, politically, legally, culturally. Rather, the embryo becomes a member when its parents and others learn that conception has occurred; at that point, social interaction with the embryo begins. And such interaction is understood by the parents, the physician, and others as interaction with *someone* rather than with *something*, and with someone entering political community rather than a „foreigner“.

21 Compare Lynn Hunt, *Inventing Human Rights*, New York 2007.

The fact that this relationship is, at this point, totally asymmetric, is no argument against thinking of the embryo in this way. In light of such interaction the embryo is no outsider. If not yet a full member of political community, it might be considered a „member-in-waiting“: waiting to enter political community but not to enter „human community“ (where „human“ is understood biologically) because there it is already a member (unlike so many Enlightenment „others“). The embryo is not an outsider to the species; rather, the species is „unified“ in the sense of the genome: any one member is no less a member than any other, such that any one member – as a genome – can stand for all members. This „genetic universalism“ provides a this-worldly foundation for ethically saturated terms such as *human dignity* and *human rights*. It is a universalism free of the other-worldly pretensions of theology or metaphysics.

If the question of political membership is not about biology but rather about social community, then neither genetic manipulation nor genetic inheritance need determine the individual’s entire social and cultural fate. Persons who developed from unmanipulated genes are also dependent on those genes. They can no more exchange roles with their parents, as genetic sources, than can persons who developed from manipulated genes. To be sure, the latter persons are dependent on genes deliberately manipulated by others and therefore dependent in a way different from persons with non-engineered genes: they are dependent on the choices and preferences of other persons in a way that someone with unmanipulated genes is not. But the social and individual consequence, and the political and existential significance, of genetic enhancement is that it need not determine the individual’s subsequent fate once and for all. That fate is always also determined by the individual’s contingent interactions with his own nature as well as with the social environment, itself contingent. A dialectic of Enlightenment might follow from an economically unjust political community in which genetic engineering was practiced,<sup>22</sup> as well as from a global maldistribution of wealth and wealth-related opportunities to secure health<sup>23</sup> – but not from genetic manipulation as such.

If I am right, then much of the debate over manipulation has been ill focused.<sup>24</sup> The aspect of rapidly emerging genetic technologies of the greatest political and social consequence in coming years is *not* their promise to „enhance“ human biology along dimensions both cognitive (intelligence, memory) and phenotypical

22 In the USA, for example, the „life expectancy gap between the 3.4 million high-risk urban black males and the 5.6 million Asian females was 20.7 years in 2001“. Christopher Murray/Sandeep Kulkarni/Catherine Michaud/Niels Tomijima/Maria Bulzacchelli/Terrell Iandiorio/Majid Ezzati, *Eight Americas: Investigating Mortality Disparities across Races, Counties, and Race-Counties in the United States* in: *PLoS Medicine* 3:9 (2006), pp. 1513–1524, here p. 1513.

23 For example, the „gap between the income of the richest and poorest 20 % of people in the world increased from a 9-fold difference at the beginning of the 20<sup>th</sup> century to 30-fold by 1960 – and since then to over 80-fold by 2000“. Solomon R. Benatar/Abdallah S. Daar/Peter Singer, *Global Health Challenges: The Need for an Expanded Discourse on Bioethics*, in: *PLoS Medicine* 2:7 (2005), pp. 587–589, here p. 587.

24 For example, Michael Sandel, *The Case against Perfection. Ethics in the Age of Genetic Engineering*, Cambridge 2007.

(athletic ability, for example, but also sometimes socially consequential aesthetic preferences such as height). Hence the debate should not center narrowly on one particular dimension of genetic manipulation: parents' potential reproductive rights, their possible obligations as choice-makers in such reproductive choices, and how the state might properly regulate genetic choices in this context. This issue is undoubtedly significant, but for the lives of the great majority of persons in the world, more immediately pressing are issues of distributive justice. Distributive justice concerns the most likely wide-spread and enduring application of genetic modification, at least initially: the enhancement of health. *Enhancement* in this context means extending life expectancy and strengthening the immune system; reducing the incidence of disabilities such as cystic fibrosis, as well as therapy for debilitating or fatal genetic diseases in general (by means of somatic cell genetic modification). It also means predictive genetic tests to enable individuals to reduce genetic risks or obviate them entirely (personal genome sequencing). It means eliminating genetic disabilities and diseases by modifying the species' cellular lineage, which is passed to subsequent generations (germ-line gene therapy). And it means preimplantation genetic-diagnosis followed by embryo selection for offspring free of undesirable genetic mutations, and for offspring less vulnerable to diseases.

A more likely dialectic of genetic manipulation awaits us in health-related social inequalities created, perpetuated, or exacerbated by genetic manipulation. These inequalities are of two types. One involves positional inequalities, where a social good confers an advantage precisely because it is maldistributed (if everyone were equally intelligent, say, then intelligence would confer no positional advantage). If genetic manipulation one day confers increased resistance or less susceptibility to disease, but for only some social sectors or only some global regions, then freedom from disease confers a positional advantage (in addition to all the other advantages it confers). Those persons, groups, or regions already the most advantaged are also the best situated to obtain this positional advantage as well.

A second type of inequality affects persons (or their children) who (because of their relatively worse-off starting-position) would benefit from genetic manipulation more than would privileged persons, yet who have little or no access to it. Inequality of this sort presupposes that equality of social opportunities depends, if not on „equality of health“, then at least on equal access to health-technologies. And it presupposes that poor health diminishes one's opportunities and impairs one's capacity to realize existing opportunities (in the competition for jobs, for example). Existing inequalities are exacerbated by knowledge-driven health-technologies such as genetic manipulation: because poor people (who constitute the vast majority of humankind today) on average have the worst health among all population groups, and because (for economic reasons) they are the least likely to have market-access to the new technologies which, if they become more widely available, then likely only after many decades.

Political communities might escape a domestic dialectic of genetic enlightenment by extending access to persons at the lower end of the social gradient who, precisely because of their poorer starting-position, would benefit most from the

various forms of genetic intervention. The economically most viable route to such access would appear to be through public health systems – although in many places there are none. The medically most effective route would be prophylactic, including predictive genetic exams (to identify and treat illness) and, for persons about to become parents, prenatal gene transfer (to eliminate congenital disabilities, reduce susceptibility to disease, and strengthen the immune system). If this route is blocked to the poorest communities of the world, we may well observe a new „dialektische Verschlingung von Aufklärung und Herrschaft.“