

What is the virtue in biomedicine? A study through analysis of some types of philosophical argument against/for human genetic intervention

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1. Introduction

The problem of genetic intervention into human being is one of the most important battlefields under bioethicists. Many of them see the field as a test case for the plausibility of their own theories and participate in it, partly motivated by some righteous indignation to "hubris" and partly by the intention to rectify the vague (mostly critical) argumentation from the philosophical perspectives.

Both emotion and strict reasoning, I dare to say here, are needed to explore the problem; what kinds of genetic intervention are morally acceptable, at least for two reasons; because we are not uninterested observers but sympathizing participants as members of human communities, so that we cannot ignore the elements of emotion in judging the morality of the intervention, whether from the utilitarian viewpoint or from that of justice; and because we should discuss it anyway from *moral* point of view without ignoring the scientific facts and technological developments, though at the same time not being only subjected to them.

But we should not pursue hastily "pros and cons" of the discussion either, but define the situation of debate as clearly as possible. That's why I would like here to analyze some types of philosophical argument against/for human genetic intervention, especially by clarifying (and criticizing) arguments of some prominent authors in the field of bioethics.

Through this analysis I would like to point out some aspects of the "virtue in biomedicine." The ethics of medicine itself has a long tradition since Hippocrates and is being more detailed and divergent in the recent development of medicine, which includes the development of biotechnology and could result in the structural change of socio-economic systems as well as of academic faculties.¹ It seems that we are also required to review the traditional self-understanding of human

1 The structural transformation now taking place could be characterized as follows: "From bioethics (oriented to informed consent and self-determination) to biopolitics (research of 'genomic inner

beings. The following passages in an article do suggest these structural changes:

[...] to the extent that the medical community regards a learning disability as a medical problem, gene therapy intended to raise a child's IQ might be classified as therapeutic. Would a child's inability to concentrate also fall into this category? What about a difficulty in retaining information?²

This suggestion about fluidization of distinction between therapy and enhancement implies a radical structural change of society never seen before which is taking place with increasing possibility of biomedicine. Coping with these problems from moral point of view needs not only referring to fairness (how to allocate scarce medical resources) or *moral obligation* but also relying on socially accepted self-understanding of human being, as well as *moral value* or *virtue* including individual-existential, unforced decision about one's own life.

In the following I will at first investigate arguments of some prominent authors of bioethics concerning genetic engineering or human enhancement. Positions of Michael Sandel (2), Jürgen Habermas (3), Allen Buchanan (4) are critically analyzed and then the highly honored position of Hans Jonas about the virtue of medicine is referred to (5). Elements of these positions are then critically combined to some aspects of precondition for biomedical development in order to answer the question; what is the virtue in biomedicine (6)?

2. An uncertainty in Michael Sandel's argument

Michael Sandel criticizes the "autonomy argument" *against* genetic intervention (especially human enhancement including cloning) which argues that it violates the child's right to autonomy because it deprives the child of his/her right to an open future by choosing in advance his/her genetic makeup, as follows:

At first glance, the autonomy argument seems to capture what is troubling about human cloning and other forms of genetic engineering. But it is not persuasive, for two reasons. First, it wrongly implies that, absent a designing parent, children are free to choose their physical characteristics for themselves. But none of us chooses our own genetic inheritance. The alternative to a cloned or genetically enhanced child is not one whose future is unbiased and unbound by particular talents, but a child at the mercy of the genetic lottery. / Second, even if a concern for autonomy explains some of our worries about made-to-order children, it cannot explain our moral hesitation about people who seek genetic enhancements for themselves. [...] The moral quandary arises when people use such therapy not to

nature' of human being aiming at public health as well as personalized medicine)," "From biology to bioscience (which is now equivalent to or partly surpasses the field of medicine)," "From genetics (since Mendel) to genomics (since Watson & Crick or since Human Genome Project)." Shohei Yonemoto (2006), *Baioporitikus: Jintai o kanri suru towa douiu kotoka* [Biopolitics: What does it mean to manage the human body?], Tokyo, pp. 13-27, pp. 40-59.

2 Ray Bohlin (2000), "Genetic Intervention: Ethical Challenges Ahead," <https://cbhd.org/content/genetic-intervention-ethical-challenges-ahead>

cure a disease but to reach beyond health, to enhance their physical or cognitive capacities, to lift themselves above the norm.³

This argument seems to me not to be sufficient as critics to “autonomy argument.” *First*, the autonomy argument does *not* necessarily “implies” in the first place that without (i.e. “absent”) genetic intervention the child’s right to autonomy wouldn’t be violated, much less that then “children are free to choose their physical characteristics for themselves.” The former is *logically* self-evident, because the assertion that “genetic intervention violates the child’s right to autonomy” aren’t equivalent to the assertion that “without genetic intervention the child’s right to autonomy wouldn’t be violated”—another types of intervention, for example educational, also can violate it! And the latter is (so to speak) *ontologically* self-evident, because even if any intervention does *not* occur, the children are *not* free to choose their physical characteristics for themselves. First of all they are born with some *natural* characteristics anyway, which they cannot principally “choose.” This impossibility of choice is independent of whether parents intend or implement the genetic intervention into their children or not. Furthermore, “choosing” (or altering by cosmetic surgery or genetic enhancement) one’s own physical characteristics does not depend solely on birth condition (here; with/without intervention) but mostly on one’s own decision.

This uncertainty seems to me to arise from the ambiguity of Sandel’s definition of “autonomy argument,” because concerning the *second*, in itself seemingly plausible argument against “made-to-order children” or enhancement he slides into the discussion about “autonomy” another type of discussion about “fairness” and treats the both as on the same level.⁴ But the fact is: there are (at least two) different types of “liberal” argument which result in the opposite positions from each other especially concerning genetic intervention. As a matter of fact, *Habermas*, as an advocate of liberal argument argues *against* the genetic intervention (especially PGD; preimplantation genetic diagnosis) and actually on the basis of the principle of *autonomy*, whereas another liberal theorists (Rawls, Dworkin, Ager, Buchanan etc.) support “liberal eugenics” on the basis of the principle of *fairness*. That means: the “autonomy argument” does not always imply “fairness argument,” both of which Sandel does not distinguish clearly enough from each other.

Sandel criticizes now also the “fairness argument” as follows:

But the fairness argument against enhancement has a fatal flaw. It has always been the case that some athletes are better endowed, genetically, than others. And yet we do not consider the natural inequality of genetic endowments to undermine the fairness of competitive sports. From the standpoint of fairness, enhanced genetic differences are no worse than natural ones. Moreover, assuming they are safe, genetic enhancements could be made available to all. If genetic enhancement in sports is morally objectionable, it must be for

3 Michael J. Sandel (2009), *The Case against Perfection: Ethics in the age of genetic engineering*, Harvard University Press, pp. 7-8.

4 “In liberal societies, they [men and women who have unease to the scientific development] reach first for the language of autonomy, fairness, and individual rights.” *Ibid.*, p. 9.

reasons other than fairness.⁵

This argumentation is also directed to liberal theorists, but it turns out that it cannot always be the case, because liberals can also (or mostly) be advocates, not opponents of “liberal” eugenics even on the basis of the principle of fairness. Here seems to be an uncertainty caused by a theoretical strategy. Sandel, an advocate of communitarianism or virtue ethics, would like to treat principally different types of liberal argument as on the same ground and overcome the limit of *it* (not *them*, autonomy argument *and* fairness argument but *the* liberal argument) by his own theory (here the one concerning “giftedness”). Although he does not name each theorist in the cited passages, his argumentation articulated not so clearly causes some inconveniences. Above all, the difference between opponents (Habermas etc.) and advocates (Rawls etc.) as well as different types of argument against/for human genetic intervention are effaced. This uncertainty could make the positive elements of his “giftedness” argument from viewpoint of virtue less persuasive.

3. Autonomy argument: Jürgen Habermas and “being oneself (*Selbstsein*)”

In Habermas’ argument the distinction between “the grown (*das Gewachsene*)” and “the made (*das Gemachte*)” plays an important role. And this framework implies exactly how the language of autonomy should be used as an argument *against* genetic intervention, especially PGD or human enhancement. For Habermas this distinction determines two different modes of human action and without the former the meaning of the action itself would be unclarified:

To the degree that the evolution of the species, proceeding by random selection, comes within the reach of the interventions of genetic engineering and, thus, of actions we have to answer for, the categories of what is *manufactured* and what has *come to be by nature*, which in the lifeworld still retain their demarcating power, dedifferentiated. For us, this distinction is self-evident because it refers to familiar modes of action: the technical use made of matter, on the one hand, and the cultivating or therapeutic attitude toward organic nature, on the other hand. The care we take when we deal with self-maintaining systems, whose self-regulation we might disrupt, bears witness not only to a *cognitive* consideration for the inherent dynamic of the process of life. The closer we are to the species dealt with, the more clearly this consideration is intermingled also with a *practical* concern, a kind of respect. The empathy, or “resonant comprehension [*mitschwingendes Verständnis*],” we show for the violability [*Verletzbarkeit*] of organic life, acting as a check [*Hemmschwelle*] upon our practical dealings, is obviously grounded in the sensitivity of our own body and in the distinction we make between any kind of subjectivity, however rudimentary, and the world of objects which can merely be manipulated.⁶

This distinction is also a presupposition for autonomy as such. Only when the original condition

5 Ibid., pp. 12–13.

6 Jürgen Habermas (2003), *The Future of Human Nature*, Polity Press/Blackwell, pp. 46–47.

of one's birth remains untouched by any intention of someone else (parents, physicians or genetic engineers), the one can identify his/her person with his/her body:

What is true for action is true for discourse: Her yes and no counts because and inasmuch as it is the person *herself* who is behind her intensions, initiatives, and aspirations. If we see ourselves as moral persons, we intuitively assume that since we are inexchangeable, we act and judge *in propria persona*—that it is our own voice speaking and no other. It is for this “capacity of being oneself [*Selbstseinkönnen*]” that the “intension of another person” intruding upon our life history through the genetic program primarily turn out to be disruptive. The capacity of being oneself requires that the person be at home, so to speak, in her own body [*im eigenen Leib gewissermaßen zu Hause*]. The body is the medium for incarnating the personal mode of existence [*Verkörperung personaler Existenz*] in such a way that any kind of [objectifying, reifying] self-reference [*vergegenständlichende Selbstreferenz*], as for instance first person sentences, is not only unnecessary, but meaningless. [... I]t [the person's incarnation in the body] also compels us to differentiate between actions we ascribe to ourselves and actions we ascribe to others. But bodily existence [*leibliche Existenz*] enables the person to distinguish between these perspectives only on condition that she identifies with her body [*dass die Person sich mit ihrem Leib identifiziert*]. And for the person to feel one with her body [*mit ihrem Leib eins fühlen*], it seems that this body has to be experienced as something natural [*als naturwüchsig erfahren werden*]—as a continuation of the organic, self-regenerative life from which the person was born [*als die Fortsetzung des organischen, sich selbst regenerierenden Lebens, aus dem heraus die Person geboren worden ist*].⁷

It is very important that for a person to be oneself [*Selbstsein*], just on which one's autonomy as well as distinction between one's own responsibility and others' are founded, requires (the consciousness of) the identity of the person with his/her body which at the same time accompanies feeling at home in one's own body. Such a special kind of identity, to be conscious of which begins only with the dawning possibility of genetic intervention,⁸ is thought to become distorted by the realization of genetic intervention which interferes with the natural process of birth and thereby inserts others' intention into one's body and so makes the undisturbed consciousness-formation of the identity much more difficult. The structure of responsibility concerning the biological-genetic condition of one's birth becomes so complicated,⁹ that the

7 Ibid., pp. 57-58.

8 “What hitherto was ‘given’ as organic nature, and could at most ‘bred,’ now shifts to the realm of artifacts and their production. [...] The decoding of the human genome opens up the prospect of interventions that cast a peculiar light on a condition of our normative self-understanding, a condition that, although natural and thus far unthematized, now turns out nonetheless to be essential.” Ibid., p. 12-13.

9 “The program designer carries out one-sided act for which there can be no well-founded assumption of consent, disposing over the genetic factors of another in the paternalistic intention of setting the course, in relevant aspects, of the life history of the dependent person. The latter may interpret, but not revise or undo this intention. The consequences are irreversible because the paternalistic intention is laid down in a disarming genetic program instead of being communicatively mediated by a socializing

traditional “mine and thine” in the civil society would have to be radically rewritten.

Habermas sees such kind of “future of human nature” as difficult to be justified, so that he emphasizes the emergence of human individuals by breaking their ties to “nature” before birth (which doesn’t know *any* distinction between person and thing, mind and body, self and others etc.) and the development of “culture,” which is independent of natural contingencies and also becomes only possible as constructions by (mentally as well as physically) independent persons:

We can achieve continuity in the vicissitudes of a life history [*Wandel der Lebensgeschichte*] only because we may refer, for establishing the difference between what *we* are [*was wir sind*] and what happens *to us* [*was mit uns geschieht*], to a bodily existence which is itself the continuation of a natural fate going back beyond the socialization process. The fact that this natural fate, this past before our past, so to speak, is not at our human disposal seems to be essential for our awareness of freedom—but is it also essential for the capacity, as such, of being oneself [*Selbstseinkönnen als solches*]?¹⁰

This argument of autonomy (and reciprocal responsibility) is established philosophically solid. It is based on the philosophy of *subjectivity* (individuality, identity and autonomy). Therefore without a radical revision of subjectivity itself in a normative sense, that is, without inventing a new type of the idea of humanity, it seems that the genetic intervention to human nature, esp. the human enhancement, could not be justified on a solid philosophical basis.

4. Fairness argument: Allen Buchanan and “enhancement as a (normal) tool”

Since 2000, the year of publication of the renowned book *From Chance to Choice*,¹¹ Allen Buchanan is one of the most prominent philosophical advocates of enhancement. He relies there in general on John Rawls’ justice theory, although whose orientation to “the greatest advantage of the worst off” (Difference Principle) is modified by Buchanan to adjust to the need for reasoning justifiable enhancement. Then he refers to Rawls’ idea that “it would be impermissible to base a person’s entitlement to a share of social goods on the mere fact that he happens to have been more fortunate in the genetic lottery,” and that “natural inequalities require redress or compensation as a matter of justice.”¹² According to Buchanan this idea of Rawls should be so modified, that the idea of justice (as fairness) covers also the field of natural assets:

practice which can be subjected to reappraisal by the person ‘raised’. / The irreversible nature of the consequences arising from one-sided acts of genetic manipulation saddles the person who thinks himself capable of making this choice with a problematical responsibility. [...] Eugenic programming establishes a permanent dependence between persons who know that one of them is principally barred from changing *social* places with the other. But this kind of social dependence, which is irreversible because it was established by ascription, is foreign to the reciprocal and symmetrical relations of mutual recognition proper to a moral and legal community of free and equal persons.” Ibid., pp. 64-65.

¹⁰ Ibid., p. 60.

¹¹ Allen Buchanan, Dan W. Brock, Norman Daniels, & Daniel Wikler (2000), *From Chance to Choice. Genetics and Justice*, Cambridge University Press.

¹² Ibid., p. 68.

[...] equal opportunity not only requires that competition be fair; it also requires efforts to bring people up to the threshold of normal functioning that enables them to compete under conditions of fairness. This allows a consistent appeal to equal opportunity as a moral foundation for the right to health care [...] and with it the thesis that equal opportunity must somehow counteract all natural inequalities, not just those constitute diseases.¹³

Here appears the idea of Buchanan clearly that the justifiable genetic intervention needs not to be confined to negative, therapeutic intervention (treatment and/or prevention of disease) but could be, or should be extended to positive intervention, namely enhancement in the ordinary sense (in opposite to therapy). But this perspective is modified in his recent work *Beyond Humanity?*,¹⁴ where he uses the term “enhancement” in a (too) broad sense as follows:

Human beings have always tried to enhance themselves—to improve their mental, physical, and emotional capacities. The invention of writing, for example, was a dramatic enhancement of our cognitive powers; the development of the method and practices of science was another.¹⁵

Biomedical enhancement, which makes it possible to transform “ourselves perhaps more profoundly—and certainly more deliberately—than ever before,”¹⁶ is defined in a “relatively uncontroversial”¹⁷ form simply as “applying biomedical science, which aims to improve an existing capacity that most or all normal human beings typically have, or to create a new capacity, by acting directly on the body or brain.”¹⁸

This (too) broad definition makes the point of discussion vaguer because the problem to be asked for is not the moral justifiability of biomedical enhancement *in general* (although it seems at first glance to be the case in Sandel’s argument) but of *some* types of genetic intervention. Concerning this point Buchanan presents indeed some modes of biomedical enhancements; (1) selection of embryos for implantation according to genotype; (2) genetic engineering of embryos, by insertion of human or nonhuman animal genes or artificial chromosomes; (3) administration of drugs (e.g., cognitive enhancement drugs); (4) implantation of genetically engineered tissue or organs; and (5) brain-computer interface technologies, using nanotechnology to connect neural tissue with electronic circuits.¹⁹ But there are some deficits in his discussion about biomedical enhancement:

Firstly, by declaring of concentration on the third point (administration of drugs)²⁰ as an empirical evidence of his reasoning, he seems to withdraw from the front of discussion about

13 Ibid., p. 74.

14 Allen Buchanan (2011), *Beyond Humanity? The Ethics of Biomedical Enhancement*, Oxford University Press.

15 Ibid., xi (Preface).

16 Ibid.

17 Ibid., p. 23.

18 Ibid.

19 Ibid., p. 25.

20 Ibid., pp. 27–28.

the other problems. Secondly, he does not justify the very idea of altering intendedly the human genomes by means of genetic engineering, whereas he emphasizes the evolutionary fact that “literacy and institutions, although not biomedical enhancements, have had profound impacts on the human genome: they have laid the groundwork for developments that have brought together formerly isolated various human populations, allowing genetic combinations that would not otherwise occurred.”²¹ But the actual, historical and unconscious influences of cultural evolution on the biological evolution as *indirect* results are principally different from the reverse, *direct* influence. Intended, planned and systematic alteration (i.e. “programming”) of human genome which could be possible only as authoritative/liberal eugenics cannot be justified by this biological-cultural fact, but the separated discussion and justification are needed. Thirdly, by the too broad definition of the enhancement, his reasoning loses much of its plausibility: his criticism of Sandel’s anti-enhancement-argument on the basis of the “gratitude” for “the given” distracts the discussion from the central point:

In fact [...] the harshest criticisms of biomedical enhancement appear to apply to enhancement *per se*, whether biomedical or not. This striking generality ought to make us wary of what I described earlier as the anti-enhancement position—the rejection of biomedical enhancements as such—because it means that if we accept that view, we would not only have to reject cognitive enhancement drugs, but must also regard literacy, institutions, and the agrarian revolution in a highly unfavorable light as well.²²

Sandel *does not* (or *cannot*) of course *as a matter of fact* deny the significance of “literacy, institutions, and the agrarian revolution” as achievements of cultural (and in its secondary effects; biological) evolution of human beings. From criticizing *some* sorts of genetic intervention which intend enhancement, man cannot conclude *logically* that *all* kinds of enhancement, here in the broadest sense, should be rejected.

The problem seems to me to have resulted from a slight (but serious) modification of definition of “enhancement” from the (at least in the context of bioethics) ordinary usage as an antipode of “therapeutic genetic intervention” to a too broad sense as “improving as such.” Such kind of “generalization,” or—I’d like here to say— “normalization”²³ in the definition of “enhancement” distorts the debate on the central point; what kinds of genetic intervention are to be morally acceptable, which Buchanan himself originally intends to explore from his standpoint of fairness-liberalism.

21 Ibid., p. 24. The passage goes as follows: “The agrarian revolution and the development of cities that it made possible have also changed the human gene pool, by subjecting human beings to diseases that have selected for disease resistant genes.”

22 Ibid., p. 26.

23 “In the context of a democratically constituted pluralistic society where every citizen has an equal right to an autonomous conduct of life, practices of enhancing eugenics cannot be ‘normalized’ in a legitimate way, because the selection of desirable dispositions cannot be *a priori* dissociated from the prejudgement of specific life-projects.” Jürgen Habermas, *The Future of Human Nature*, p. 66.

5. Virtue in the development of medicine: Hans Jonas and “devotion (*Hingabe*)”

A suspicion about anti-enhancement argument lies in that it (or an interpreted version of it maybe in a too exaggerated form) could assert that the natural, the given must not be altered. Of course the natural, the given and also the realm of giftedness do continue to exist in midst of cultivation of nature, but the extent or the range of them changes (maybe narrows) in accordance with the technological development because intentionally controllable spheres are being widen and many diseases once thought incurable are now overcome and have become so controllable, that the situation without them are even considered as “normal.”

We should then rely not only on an abstract idea of the given in general but search for a precise distinction of the uncontrollable and the controllable, the natural and the cultural. It is important then to realize that not only statically unchangeable things, especially the natural origin of “the grown (*das Gewachsene*)” as opposed to “the made (*das Gemachte*),” but also gradually improved conditions, namely the accumulation of the cultural and scientific-technological knowledges, can be incorporated into the realm of “the given.”

In this sense the argument of Hans Jonas concerning the biomedical ethics²⁴ is worth paying attention to because he takes systematically the moral structure of development of medicine into account. According to him the development of medicine depends primarily on the informed, more or less heroic decision by free will on the side of persons concerned, which goes over the mutual, consensual relationship²⁵ and requires above all the researchers and the physicians themselves to come to the decision (especially to the decision of experimenting with one’s own subject), neither the patients themselves nor the subordinates, let alone poor people or criminals.²⁶ That means: some kinds of “self-sacrifice” or “devotion”²⁷ are needed for the development of medicine, which

24 Hans Jonas (1987), *Technik, Medizin und Ethik. Praxis des Prinzips Verantwortung*, Suhrkamp. Esp., chapter 6; *Im Dienste des medizinischen Fortschritts: Über Versuche an menschlichen Subjekten*. See also the English version (1969); “Philosophical Reflections on Experiments with Human Subjects,” *Daedalus*, 98/2.

25 “Indeed, we must look outside the sphere of the social contract, outside the whole realm of public rights and duties, for the motivations and norms by which we can expect ever again the upwelling of a will to give what nobody—neither society, nor fellow man, nor posterity—is entitled to. There are such dimensions in man with trans-social wellsprings of conduct, and I have already pointed to the paradox, or mystery, that society cannot prosper without them, that it must draw on them, but cannot command them.” *Ibid.*, pp. 128–129 (Eng., pp. 231–232).

26 *Ibid.*, pp. 132–137 (Eng., pp. 234–238). Jonas names the principle adopted here the rule of “descending order [*abstengende Reihe*]” and characterizes it as opposed to the “social utility standard” (“availability and expendability”) because the number of researchers who have on their bodies themselves the very disease which he/she would like to explore or cure at the same time and which he/she treats as a “case” for the general progress of therapy are very scarce and insofar not easily “available [*verfügbar*]” nor “expendable [*aufwendbar*].”

27 “These are some of the difficulties hidden in the conceptual framework indicated by the terms ‘society-individual,’ ‘interest,’ and ‘rights.’ But we also spoke of a moral call, and this points to another dimension—not indeed divorced from the societal sphere, but transcending it. And there is something even beyond that: true sacrifice from highest devotion [*wahre Aufopferung aus höchster Hingabe*], for which there are no laws or rules except that it must be absolutely free.” *Ibid.*, pp. 114–115 (Eng.,

occur in morally legitimated forms on the one hand only on the basis of informed consent, which takes place most ideally on the side of the interested parties themselves who are most interested in and therefore even responsible for the development *itself*. Patients on the other hand have interest primarily only in the recovery from *their own* disease, not in developing treatment of the relevant disease *in general*.

It is true that there may be or—in a restricted sense—should be cases where a patient be treated even as a “means” (or at least as a “case”) for others (patients of the same disease or the public who could suffer from it in a near future), so that they can take the lessons from *this* patient. But he/she remains “end in itself” as far as it matters the personal, responsible relationship between the patient and the physician. Nevertheless we should not ignore the fact that by being diagnosed and treated a patient *participates* in the whole progress of the medical praxis (science and technology), from the accumulation of which he/she also takes benefits. That does *not* of course mean that a patient *must* devote himself/herself to the development or that a kind of “right” should be granted to another real or possible patient to let that patient to do so, but the intra-and-intergenerational depending relationship cannot be ignored on which *both* the public *and* the individuals enjoy the fruits of medical services. That’s why the historical and cultural connotations of “the given” are important, which although *cannot* be conceived as a matter of *right* but only as *devotion on free will*.

6. What is the virtue in biomedicine?

From the analysis mentioned above, it results that there could be at least three limitations (or preconditions) to human genetic intervention; 1) autonomy (undisturbed formation of personal identity as well as informed consent in a full sense, i.e. devotion to public interest, public health on the basis of free will,) 2) equality (fairness of access to therapy, symmetry of responsibility and consciousness as equal participants in social cooperation), 3) solidarity of values (including 1. and 2. as well as acceptable limits to technological development on the basis of self-understanding of human being [*Menschenbild*]).

What does “solidarity” then originally mean? Does it presuppose only “chance” in contrast to “choice”? It is true that the system of health insurance depends on the contingency of whether

p. 222). “We may well say of somebody that he ought to have come to the succor of B, to have shared with him in his need, and the like. But we may not say that he ought to have given his life for him. To have done so would be praiseworthy; not to have done so is not blameworthy. It cannot be asked of him; if he fails to do so, he reneges on no duty. But he may say of himself, and only he, that he ought to have given his life. This ‘ought’ is strictly between him and himself, or between him and God; no outside party—fellow man or society—can appropriate its voice. It can humbly receive the supererogatory gifts from the free enactment of it. / We must, in other words, distinguish between moral obligation and the much larger sphere of moral value. ([...] The highest are in a region beyond duty and claim. [...]) The ethical dimension far exceeds that of the moral law and reaches into the sublime solitude of dedication [*erhabene Einsamkeit von Hingabe*] and ultimate commitment [*letzter Selbstwahl*], away from all reckoning and rule—in short, into the sphere of the holy. From there alone can the offer of self-sacrifice [*Selbstaufopferung*] genuinely spring, and this—its source—must be honored religiously.” Ibid., pp. 130–131 (Eng., pp. 232–233).

a man suffers from some kind of disease (esp. cancer and heart diseases) or not, otherwise it would result in too wide a gap between too much insurance fees for to-be “patients” and (maybe) no expenditure for to-be persons “without any risk,” what destroys the very foundation of insurance²⁸. But the range or the depth of “chance” supposed also in this case is not in itself fixed to some static conditions. Just the opposite is the case and the given conditions, to which we owe ourselves and for which we are to be grateful, change in accordance with the cultural and technological development. The concern for the PGD that this procedure accelerates the discrimination against handicapped people seems to rely partly on this static view of “the given” (partly on the grounded fear of the egocentric humanity; “hubris”). But is it *principally* hard for us to overcome this kind of concern?

The difficulty seems to me, on the one hand, not so great, as to have to deny the possible compatibility as such both of implementation of some kind of genetic intervention and eliminating discrimination.²⁹ A more serious problem seems, on the other hand, rather to lie in the *asymmetry of responsibility* which could result from the implementation of the genetic intervention, what Sandel as well as Habermas pointed out. This problem should be considered from viewpoints both of the technological security and of the consciousness. Though the latter should not be too literally taken seriously and should not be too exaggerated, but it is true that the concern lies at the same time in a deeper level than it seems at first glance.

It is important that the solidarity (which includes here both autonomy and equality) be explored and understood in this “deeper” sense. The concept “devotion” of Jonas plays here an important role, but not always strictly in the definition of his own (unidirectional, voluntary, heroic decision to give). Could Patient, who cannot and must not be regarded only as a “means” or a “case” for another (potential or actual) patient but primarily only as an “end in itself,” not be understood (in a deeper sense) as a “fellow” who shares the pains with us? Are not both the procedure of therapy and of preventing diseases kinds of “cooperation” not only between the patient and the physician, but also between the patient and the others? Couldn’t we understand the situation so, as if the solidarity between the patient and the others might be strengthened when we see the patient as at least potentially and indirectly “devoting” his/her body to the “public realm” by doing his/her best with healthcare workers and his/her family in order that the following others can also do their best with surrounding people? Only that kind of “devotion” and “cooperation” could result

28 That’s why genetic discrimination is legally prohibited in the USA. Sandel, *The Case against Perfection: Ethics in the age of genetic engineering*, p. 90.

29 “[...] Solche Entsolidarisierungsgefahren sind sehr ernst zu nehmen, sicher aber keine zwingende Folge der Präimplantationsdiagnostik. Nichts hindert eine Gesellschaft, die Präimplantationsdiagnostik zulässt, zwangsläufig daran, eine gute Integrationspolitik für behinderte und kranke Gesellschaftsmitglieder zu verfolgen und dafür die geeigneten sozialen Institutionen bereitzustellen. Allerdings kann eine Gesellschaft, die ethisch für den Einsatz von Präimplantationsdiagnostik reif genug ist, nur eine solche sein, in der behinderten Menschen und den sie betreuenden Familien ein hohes Maß an Solidarität und Integrationsbereitschaft entgegengebracht wird.” Michael Quante (2011), *Würde und Wert des menschlichen Lebens: das Beispiel der Präimplantationsdiagnostik*, Preprints of the Centre for Advanced Study in Bioethics Münster 2011/19.

https://www.uni-muenster.de/imperia/md/content/kfg-normenbegruendung/intern/publikationen/quante/19_quante_-_w_rde_und_wert_pid.pdf

in improvements of medical praxis including biomedical technologies. Or at least doesn't the static view of "the given" also in biomedicine mean only that the "the given" level of medical care must be accepted calmly as a "fate" ?

Such kind of *unintended* "devotion," though only interpreted from outside in a negative sense, but from the perspective of participants in the medical "cooperation" in the widest sense, can be seen in the following passage:

[...] gene therapy seemed poised to revolutionize medicine in the early 1990s. Many bright young clinical investigators joined the effort to develop appropriate applications. However, researchers' early enthusiasm gradually faded, because of their huge challenges [concerning 1) delivery of the desired DNA to the nucleus of the target cells by inactivated viruses; 2) transcription of the inserted DNA into RNA, which produces the designed protein product; and 3) immune system, which seeks out and destroys the cells expressing the therapeutic genes]. / Despite those obstacles, researchers pressed on. Then, in 1999, tragedy struck. An 18-year-old volunteer in an *in vivo* [on living organisms and cells] gene therapy experiment to treat a missing enzyme in the liver died suddenly, just three days after being infused with the therapeutic virus. The young man [...] apparently died from a massive activation of his immune system in response to this foreign substance. / A detailed investigation of the circumstances revealed that certain safeguard had not been fully adhered to. Worse yet, the principal investigator of the study appeared to have a potential conflict of interest: his involvement in a biotechnology company. It was the end of innocence for gene therapy researchers. They were inured to frustration, but they had never expected to do any real harm.³⁰

This story suggests two important ethical aspects of biomedical development: 1) not mandatory, but gratuitous character,³¹ which owes mostly to the free, authentic will and the good faith both

30 Francis S. Collins (2010), *The language of life: DNA and the revolution in personalized medicine*, Harper Perennial, pp. 255-257.

31 "[...] were it not for what I have called the essentially 'gratuitous' [*fakultativ*] nature of the whole enterprise of progress, as against the mandatory [*obligatorisch*] respect for invasion-proof selfhood [*unverletzliche Privatsphäre*], the simplest answer would be to keep the whole population enrolled, and let the lot, or an equivalent of draft boards, decide which of each category will at any one time be called up for "service" [German version; ... *entscheiden zu lassen, wer aus jeder Kategorie jeweils zum »Dienst« einberufen wird*]. [...] We are agreed that ours is not one such and should not become one. [...] How then can our mandatory faith be honored when the recruitment for experimentation goes outside the scientific community, as it must in honoring another commitment of no mean dignity? [German version; *Wie können wir dann jenem obligatorischen Respekt treu bleiben, wenn wir gleichzeitig einem anderen Werte von nicht geringerem Rang das seine geben wollen?*] Jonas, *Technik, Medizin und Ethik*, p. 133 (Eng., pp. 234-235). "To a pure experiment, by contrast [to the case, where the patient is the beneficiary], undertaken to gain knowledge, the difference of success and failure is not germane, only that of conclusiveness and inconclusiveness. The 'negative' result has as much to teach as the 'positive.' Also, the true experiment is an act distinct from the uses later made of the findings. And, most important, the subject experimented on is distinct from the eventual beneficiaries of those findings: He lets himself be used as a means toward an end external to himself (even if he should at some later time happen to

of researchers and of patients; 2) the precondition for the development that the situation of research and treatment must not be accompanied with any conflict of interest. The latter is related to the “fairness” argument, whereas the former to the “virtue” argument.

7. Conclusion

The problem; how to cope with the fluidization of distinction between therapy and enhancement as presented above is not solved yet. But a possible answer (or a presupposition to the answer) from the standpoint of this study lies in the following; that in spite of the fluidization the distinction of both must be respected and can be maintained; and that the therapy must therefore be prioritized definitely to the enhancement. That means: the physical health of people (both individuals and social groups) must not be put behind the intension of improving physical traits, intellectual abilities or mental dispositions. It is true that the problem; what is not only “intellectually,” “mentally” but also “physically” healthy or “normal” condition, depends on the social- and cultural contexts as well as on the development of technology. But it doesn’t change the situation that the genetic intervention as well as administration of cognitive enhancement drugs for enhancement, when implemented as public tools, is naturally of different character from measures for public health and diagnosis-treatment.

This situation can be (in a schematic understanding)³² so expressed: human genetic intervention should be limited primarily to the somatic cell gene therapy, whereas other interventions; cure or prevention of diseases to germline as well as somatic-and germline enhancement of capabilities should not be accepted as public measures. That means: the social effort of conquering the diseases should not be confused with or disturbed by the pursuing “longer life,” “stronger body,” or “smarter intellect” and so forth, which should be pursued most of all by cultural, *indirect* means, not by means of *direct* intervention into the biological basis of human being. Solidarity, which is based on common self-understanding of human being, and which could be supposedly also strengthened by the results of genetic investigations, should not be nevertheless undermined by the ambitious and fancy-like ideas of improving human being *as a whole*, which is no other than eugenics. Though it can be based on an individual free will (autonomy), it is not sure if this “liberal eugenics” is compatible with the social claim for equality and solidarity or not.

be among the beneficiaries himself). With respect to his own present needs and his own good, the act is gratuitous.” Footnote only in English version, p. 247.

32 Allen R. Dyer (1997), *The Ethics of Human Genetic Intervention: A Postmodern Perspective*, *Experimental Neurology* 144, p. 168.

https://www.researchgate.net/publication/14092499_The_Ethics_of_Human_Genetic_Intervention_A_Postmodern_Perspective