

# Human Body, Enhancement, and the Missing Technomoral Virtue

## Cuerpo humano, mejora y la virtud tecnomoral perdida

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**Resumen:** En este artículo evaluamos dos lados del debate sobre la mejora biomédica. Primero, la idea de que la mejora biomédica debería prohibirse sobre la base de que degrada la naturaleza humana; segundo, que la mejora biomédica puede, en principio, eliminar la fuente del mal moral. Al hacerlo, propondremos una noción diferente de la naturaleza humana, lo que llamaremos la idea *agato-teleológica de la naturaleza humana*, y sus implicaciones para una comprensión filosófica del cuerpo humano. Además, señalaremos por qué no parece razonable pensar que la mejora corporal sea suficiente para garantizar el progreso moral. Finalmente, propondremos la idea de que nuestras sociedades tecnológicas necesitan una nueva virtud moral, lo que llamaremos la virtud de la *integridad corporal no conservadora*.

**Palabras clave:** Mejora; biomedicina; humanidad; progreso; virtud.

**Abstract:** In this paper we assess two sides of the debate concerning biomedical enhancement. First, the idea that biomedical enhancement should be prohibited on the grounds that it degrades human nature; second, that biomedical enhancement can in principle remove the source of moral evil. In so doing, we will propose a different notion of human nature, what we shall call the *agato-teleological idea of human nature*, and its implications for a philosophical understanding of the human body. Also, we will point out why it seems unreasonable to think that bodily enhancement is sufficient to guarantee moral progress. Finally, we will propose the idea that our technological societies are in need of a new moral virtue, what we shall call the virtue of *non-conservative bodily integrity*.

**Keywords:** Enhancement; biomedicine; humanity; progress; virtue.

## 1. PRELIMINARIES ON HUMAN NATURE

Talk of modifying the human body through technological (biomedical) means initially raises the specter of state-sponsored eugenics in the form of sterilization. However, as Francis Fukuyama points out, while old, state-run eugenics programs were *ineffective* in their ability to isolate undesirable genetic material and *coercive* given sterilization and experimentation was involuntary, new biomedical technologies may allow for effective genetic screening and the decision to radically modify one's genetic material will be a matter of individual (or the parents') choice (Fukuyama, 2002). The philosophical worries associated with biomedical technologies are more subtle. One such worry is that emerging biomedical technicalities will inevitably lead to the end of humanity (Agar, 2010). Even the very ideas of "post-" and "transhumanism" suggest that human nature, as we know it, is only a temporary, transient feature of the world.

The likelihood and manner in which humanity will be brought to a close is a subject of philosophical and popular reflection. Whereas science-fiction books and films often portray humanity's end through breakthroughs in artificial intelligence and robotics, philosophers and social critics routinely point to the unintended consequences of unchecked experimentation on the human genome. Concerning the latter, much work has been done on what cautionary heuristics should be put in place to avoid such risks (Buchanan, 2011).

The question we wish to consider, however, is more fundamental. We consider whether we change *human nature* by enhancing the body. One interesting position is that since it is human beings who produce these enhancements, such interventions are merely a *technological extension* of human nature (Bostrom, 2003). In this second case, transformative technology is not opposed to human nature but rather is part and parcel to who we are as human beings. That is, *we are naturally transformative and technological beings*. In this sense, as Andy Clark points out, we are "natural-born cyborgs," which means that the prospect of a technologically-enhanced body would simply be nothing else but the new natural outcome of what we have always been (Clark, 2003).

The crux of the problem seems to be how to understand the idea of *human nature* (Trigg, 1999). One strand of literature debate interprets the notion of human nature in a purely biological way. On this interpretation, the debate is framed in terms of the social-ethical-practical effects of harnessing biomedical means to create novel interspecies that involve human cellular material (Robert & Baylis, 2003). Our concern has less to do biological notions like species, and in particular *Homo sapiens*, and more to do with the effects of biomedical technologies on *human nature*.

Our understanding of *human nature* is similar to the *homeostatic property cluster view* of species (Boyd, 1999) and various cluster-concept approaches to defining kinds.<sup>1</sup> In saying that human nature is a “cluster concept”, we are asserting that human nature is characterized by a cluster of properties no single one of which (and no specific set) must be possessed in order to exhibit human nature yet some significant set of which must be possessed to exhibit said nature. To put this negatively, no single set of properties is necessary and sufficient to possess human nature. To put it positively, some critical mass of properties is required to possess human nature to some degree. Following Wilson (1999), in saying that the property clusters of human nature are “homeostatic”, we contend that there is a mechanism that causes the possession of properties in the property cluster increase the likelihood of possessing other properties in the property cluster. That is, having certain human properties increase the likelihood (but yet not determine) having other human properties. For instance, valuing social relations will increase the likelihood of possessing things like honesty and care, or having curiosity will increase the likelihood of being intelligent. Since we contend that the clustering of properties is causal, we claim that there are features in the world that determine whether a being exhibits human nature. The most obvious such features that make possible the possession of having a particular kind of (not necessarily human) body. Nevertheless, our understanding of what it means “to be human” are not the biological properties themselves but those properties that emerge from their complex interaction. While we don’t intend to provide an exhaustive list, such properties include the ability to form complex social relations, use language, rule-following, tool use, deliberation, abstract reasoning, the ability to recognize another’s emotional states, the capacity to suffer (as opposed to merely feel pain), and so on. However, in the particular discussion of whether biomedical enhancements to the body change human nature, we take the morally relevant properties to be *clusters of basic human values*. That is, things human beings value (or desire to desire), e.g., life, friendship, play, work, love, experience of beauty, health, intellectual engagement, and so on (Finnis, 1980; Chappell, 1995; Murphy, 2001; Gomez-Lobo, 2002).

Since our paper is about the ethics of biomedical enhancement and not about defining human nature, our focus here is not on giving an exhaustive list of those human values required for *being human*. However, we wish to make four additional points concerning this conception of human nature.

First, our conception of human nature captures the intuition that being classified as human is *more* than having such-and-such physical characteristics. Dead or permanently lifeless bodies may be biologically human, but they don’t

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<sup>1</sup> What we have in mind are approaches along the lines of Ludwig Wittgenstein’s cluster concept (*Philosophical Investigations* I 66), Hilary Putnam’s (1962, p. 379) use of “cluster terms”, Hull’s (1965) account of taxa names as cluster concepts, Martin Mahner’s use of “science indicators” to demarcate science from pseudo-science and non-science (Mahner, 2013).

possess human nature. At least in this paper, we don't outline what those features are, but note that (i) historically, factors like belonging to a certain race or nation, or believing in a certain religion, or being of a certain gender have been invoked (albeit wrongly) to disqualify individuals from being classified as human and (ii) contemporarily, individuals who behave in a wild, unpredictable, callous, or particularly deviant or inhumane ways are taken to be inhuman. Our conception of human nature captures the underlying intuition behind both approaches, namely that being human is about having a set of higher-order properties emergent from biology.

Second, our conception of those relevant values that comprise human nature is a dispositional one. We take something to be of *value* for someone if and only if it is something that they desire to desire it under the conditions of their fullest imaginative acquaintance (Lewis, 1989, p. 121). What we mean here is not that something is a value for someone if and only if it is *good* or *best* for that person. As individuals, we can and do value things that are not good for us, and the same goes for us as a species. Instead, a human value is what we would desire to desire were we to imagine that thing's fullest possible realization.

Third, our conception of human nature has important *implications for a philosophical understanding of the human body*. According to this understanding of human nature, the contribution that certain parts of the human body plays with respect to the possession of human nature and the achievement of human values is a *functionally intrinsic* relation.<sup>2</sup> That is, the structure of the human body as we have know it disposes an individual to certain human values in a way that other bodies would not. For example, our capacity to see a somewhat wide range of color (along with a variety of other capacities) disposes us to pursue and value painting, sunsets, flowers in a way that other species might not.

Finally, human nature is understood primarily in *agato-teleological terms*. In other words, a being is "human" if that being aspires to certain fundamental moral values or goods in order to flourish. What we want to suggest, then, is that the correct approach to human nature in order to understand better the implications of technological enhancement for our self-understanding is not biological, or based on the set of skills we have as members of the human species; rather, we should understand human nature in light of its definitory fundamental values. Another fundamental aspect of the agato-teleological model of the human is its essential tie to the idea of experience: human nature is defined by those fundamental goods without which our experience stops being *human experience*. This view is agato-teleological because it claims that we are bound to find or lose ourselves depending on the goods we are disposed to realize in our lives. It is also experiential because its validation does not rely on anything external to our lived lives: the reflective

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<sup>2</sup> We say "certain parts" since it is reasonable to believe that not all the features of our body play a functional role in realization of human values. Various biological features may be vestiges of an earlier nature.

appreciation of a certain good as a fundamental good, as a defining good of what we are, is authoritative in and for itself and does not require anything else to be defined as such.

## 2. THE END OF HUMANITY: NEGATIVE CRITIQUES OF BIOMEDICAL ENHANCEMENT AND ITS EFFECT ON HUMAN NATURE

We distinguish between two different philosophical critiques of biomedical modification and its effect on human nature. The first sort of criticisms is a *negative objection*. A negative objection to biomedical enhancement is an argument that concludes that because modifying the human body would have such-and-such effect on human nature, biomedical enhancement should not be pursued at all or in some area. The second sort of criticism is a *positive objection*. A positive objection to biomedical enhancement is an argument that concludes that biomedical enhancement isn't likely to be the method for solving such-and-such problem. In this section, we contextualize our account of human nature against a number of negative objections and point to the type of negative objection we think is most fruitful. In the next section, we consider our account of human nature with respect to one particular positive objection.

Negative objections occupy the vast majority of criticisms leveled against biomedical enhancement. A number of writers on the ethics of human enhancement have pointed that using biomedical technologies to modify human beings is unethical, unwise, or dangerous.

First, there is a general feeling that modifying the human body is somehow perverse. Kass (1997), for example, points out that humans beings feel revulsion or some sort of instinctive hostility to cloning (also known as the "yuck factor"). For Kass (1997), this repugnance toward human cloning is "the emotional expression of deep wisdom, beyond reason's power fully to articulate it" (Kass, 1997, p. 20). We view this intuitive reaction as misguided and due to the evolved preference for essentialist explanations.

Human beings have evolved to deal with a variety of complex problems in real life situations. Decisions need to be made in real-time and so human problem-solving tends to involve a trade-off between speed and accuracy. The study of how human beings make decision in real-time and the various trade-offs made in responding to problems is often referred to as "biases and reasoning heuristics" (Gilovich, Griffin & Kahneman, 2002). The underlying idea behind this area of research is that human beings use heuristics to quickly solve certain problems at the risk of systematic error. The classic example is the use of a *representative* heuristic to evaluate the probability of an unknown event. For example, if we are told that Tek listens to New Age music, meditates every morning, and sees an acupuncturist,

we are inclined to say (incorrectly) it is more probable that Tek is a Reiki healer than a teacher (Tversky & Kahneman, 1974).

Another example of a heuristic is the human mind's preference for essentialist explanations. Essentialism is the view that entities possess a special (usually unobservable) property that determines what they are, guides their development, and shapes their behavior. Essentialism provides individuals a fast and efficient way of solving problems for it can be used to explain a vast number of properties belonging to an individual and it "allows one to exploit the causal structure of the world (of natural kinds, in particular), without necessarily knowing anything about the causes themselves" (Barret, 2001, p. 7). While intuitive, quick, efficient, and useful, essentialist thinking is known to introduce systematic error. People are said to be wrong (or simply oversimplify) when they essentialize the behavior of individuals of certain races or ethnic groups and essentialist thinking is claimed to play a role why intelligent design and creationists resist evolutionary explanations (Blancke & Smed, 2013).

Given that we contend that human nature is not defined in terms of having a specific set of biological properties, the significance of modifying the human body is found in the functional relation between the body and the higher-order properties that make someone human. On our account, it is a *contingent* matter that individuals who possess human nature are also those who have human bodies. We can imagine, for example, an organism that possesses human nature insofar as it possesses a cluster of distinctly human values but, at the same time, possesses no distinctly human biological characteristics. And, we can imagine an individual with all of the biological features of *Homo sapiens* but whose values are so diabolical or perverse that we cannot recognize them as *being human*. Our point then is that when we evaluate the moral significance of a technological modification to the human body, revulsion about creating ungodly, new biological organisms is rooted in essentialist thinking about the *relation* of the human body to human values. That is, our feeling of revulsion is due to the mistaken (albeit natural) belief that the human body is *essential* for the possession of human values. The modification of the former is thought to undermine the latter, and this gives rise to intuitive revulsion (Robert & Baylis, 2003).

A second set of worries with respect to genetic engineering are unintended biological consequences.<sup>3</sup> These sorts of consequences are usually related to the physical extinction of the human race due to some unforeseen result of modifying the human body, e.g. disease, sterilization. While we don't plan on addressing issues relating to biological catastrophe here (Buchanan, 2011), one related worry is

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<sup>3</sup> "The human body and mind, highly complex and delicately balanced as a result of eons of gradual and exacting evolution, are almost certainly at risk from any ill-considered attempt at "improvement." [...] It is far from clear that our delicately integrated natural bodily powers will take kindly to such impositions, however desirable the sought-for change may seem to the intervener" (President's Council on Bioethics, 2003, pp. 287-288).

that continued and rampant genetic manipulation would ultimately lead to the physical extinction of *Homo sapiens* (due to a lack of preference for conventional methods of procreation and preference for certain non-human biological characteristics). Given our understanding of human nature, biological catastrophe aside, the real moral issue with biomedical enhancement has less to do with the *physical extinction of Homo sapiens* and more to do with the *annihilation of the values of human nature*. That is, the primary worry is that we create conditions of life in which realizing our fundamental values would no longer be possible. For this reason, the “Ultimate Harm” of bioenhancement of which Ingmar Persson and Julian Savulescu (2012) speak should not be understood in terms of a physical catastrophe. Rather, the “Ultimate Harm” for humanity is that of a perfectly healthy bodily and environmental status in which the fundamental values constituting human experience are not available any longer.

A final set of worries have to do with the moral and political position of human beings in a world where biomedical enhancement has become the norm. Some point out that the disposition to enhance ourselves through biomedical means is expressive of a general disrespect of nature’s given or of an unhealthy psychological disposition to master or control everything (Habermas, 2003; Sandel, 2007). Still others point out issues relating to the political rights of merely human beings in a state composed of enhanced humans (Fukuyama, 2002, pp. 1-10). Given our interpretation of human nature, we contend that these sorts of ethical-political concerns are the most fundamental threat to human nature since they point out how biomedical technologies might ultimately lead to the destruction human values. Since we contend that certain biomedical modifications to the human body have a functional relation to how human beings are disposed to certain values and their capacity to realize these values, such modifications could in principle eradicate or degrade human nature by way of degrading human values. However, before investigating one particular issue with respect to this topic in the next section, we wish to make two points.

First, some authors suggest that any biomedical alteration of the human body will upset the complex-emergent network of human capacities and this alteration will lead to an undoing of human rights. For example, Fukuyama writes “What is it that we want to protect from any future advances in biotechnology? The answer is, we want to protect the full range of our complex, evolved natures against attempts at self-modification. We do not want to disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it” (Fukuyama, 2002, p. 172). We think this general worry is correct. Human beings should be concerned about the erosion of things they care about, one of which we take to be human rights. However, we think this sort of extreme bio-conservatism is problematic for several reasons. First, it is unclear why just be human beings *are* a certain way supports that they *should* be that way. An individual might be strongly, physically-inclined to drug addiction but not value such a state at all. Second, the above view

seems to rely upon a very rosy view of human nature for it assumes that the human body is stable, complete, and largely satisfactory while individuals stricken with disease, genetic defects, or even minor limitations that interfere with the achievement of what they value might contend that nature is a cruel, wasteful, and inefficient beast. Finally, we take this sort of extreme bio-conservative view to be essentialist and speculative as it proposes a tight connection between the human body and the types of things humans care about. Without further elaboration, there is no reason to think that modifying human beings might make them more capable to realize what they value or better able to discern what it is they really value.

Second, other authors suggest that modifying the human body has a more targeted impact on human nature in terms of the degradation of human values. Biomedical enhancement will lead to erosion of such values as *the capacity to see one's self as free* (that is, to see one's self as an object/product) (Habermas, 2003, p. 63) or the *capacity to be grateful* (Sandel, 2007, p. 29), *to appreciate what is beyond one's control* (Sandel, 2007, pp. 26-27), or *to have shared experiences* (Agar, 2010). Under our conception of human nature, this is the most fruitful line of criticism of biomedical enhancement since it aims to answer the primary moral question with respect to human nature (what effect does bio-tech have on the integrity of human values) without essentializing the human body's relationship to human values. The difficulty with these sorts of approaches, however, is that they tend to rely on a priori reasoning with respect to human psychology that is only convincing to those already convinced of the conclusion. For example, on one interpretation of Sandel's argument against enhancement technologies, Sandel claims that individuals who purpose to develop emerging biotechnologies for the purpose of enhancing human nature desire humans to be perfect, "they crave mastery", and they aim to be "masters of nature" (Sandel, 2007, p. 99). This sort of reasoning is not supported by empirical evidence nor does it criticize the various other motivations one might have to enhance human beings.

### **3. THE 'OTHER' IN ME: A FALSE LIBERALISTIC ASSUMPTION OF MORAL PROGRESS THROUGH BODY ENHANCEMENT**

Positive criticisms of enhancement technologies are much less frequently put forward. Rather than concluding that biomedical enhancement technologies should be prohibited, positive criticisms aim to show that biomedical enhancement isn't likely to be the right approach for solving such-and-such problem. In other words, the goal of this type of criticism is partly to point out that enhancement technologies are not a cure-all for every problem that besets human beings.

What kind of ideological assumptions are at work within the idea and practice of biomedical human enhancement? (Foucault, 1982). One such ideology is what we call the technoscientific view of the body. The technoscientific view of

the body posits a connection between the body and the achievement of one's values, and, in particular a *connection between physical enhancement and moral progress*. In the last twenty years, it has been proposed that biomedical enhancements are capable in principle of modifying our cognitive faculties in a way to remove the source of moral evil and those weaknesses that contribute to moral wrongdoing. What we would like to point out here is that this strategy to tackle the problem of moral evil relies ultimately on an *internalized version of the so-called 'liberal ideology'*. The goal of this section, then, is to criticize one fundamental assumption lurking underneath the technoscientific understanding of the tight connection between body enhancement and moral progress. We argue that this connection mistakenly assumes a 'liberal' framework and applies it to body and morality.

It seems hard to deny that pharmaceutical, genetic, and technological forms of physical enhancement could enable human beings to get rid of some of the obstacles that often prevent them from being capable of sound moral reasoning and acting more morally. The enhancement of an individual's cognitive capacities to recognize traits that are relevant to the assessment of the moral situation (e.g. sympathy, empathy, strength of will, cultural conditions, etc.) and the removal of those that interfere with that situation (e.g. selfishness, laziness, impatience, tiredness, lack of focus) would likely make individuals behave more morally. However, the discussion of these issues focuses usually on whether it is morally legitimate to use biomedical technologies to achieve moral progress. For instance, is it permissible to use the tools of science and technology to bypass the impediments we find in our moral life? That is, would it be morally permissible to undergo a genetic-modification procedure to become a more moral being? (Buchanan, 2010).

One way to answer these questions is to make some distinctions among the effects that biomedical technology has on our moral character. For example, Jason T. Eberl (2015, p. 208) distinguishes between technologies that *assist* versus those that *replace* our moral development. In the case in which enhancement assists the human being in pursuing what is truly good, it is hard to see what would be wrong with it. Saying that strength of will and inner struggle are in themselves more worthy than enhancement by biomedical technologies does not seem to be reasonable: using a method such as enhancement that is supposedly faster, less troublesome, and more efficient in assisting a human being in pursuing the good seems, on the contrary, not less reasonable than appealing to the old-fashioned moral fight. "Life is not", Buchanan (2010, p. 95) writes, "a contest in which the goal is to do everything in the most difficult way". Doubts about the moral legitimacy of enhancement for moral progress emerge in cases where enhancement is intentionally pursued to *replace* the person's agency and responsibility. But believing that enhancement would eradicate all moral merit from the agent seems wrong. As long as enhancement does not conflict with agency, it should be considered moral.

Although instructive, if we limit ourselves to the mere consideration of the ethical issues concerning moral enhancement we might lose sight of a more fundamental problem. The debate between Julian Savulescu and Michael Sandel is instructive at this junction. Savulescu argues in favor of artificial enhancement for the purpose of fostering moral progress (Savulescu, 2007 & Sandel, 2007). Sandel's (2007) contends that the practice of enhancement tends to eradicate the sense of 'giftedness' from our existential self-awareness, turning ourselves into Promethean subjects, and that as a consequence enhancement is illegitimate in all cases. Both authors, however, seem to *assume that the intervention on the body amounts to an intervention on the source of our moral capacities*. But it is not clear that this identification is legitimate. If it is not, then the thesis according to which enhancement might in principle remove the source of moral evil should be rejected.

Some authors have pointed out that enhancing our bodily capacities does not improve our moral life and skills strictly speaking. Fabrice Jotterand makes this point by claiming that if we include our capacity for moral reasoning as a fundamental aspect of our moral skills, then we have to realize that bodily enhancement does seem to have the power to intervene *directly* on this capacity: in fact, moral reasoning is more a matter of knowledge and use of the *moral truths* that ought to govern our conduct than a simply psychological skill. Thus, enhancing our psychological cognitive and emotional skills, including those more relevant for practical reasoning and decision-processes, would not imply *per se* any improvement of our *moral* identity (Jotterand, 2011).

Believing that enhancement can mean by itself an intervention on the source of our moral life is an *illusion*, at least for three reasons. First, the enhancement of physical structures related to agency *does not straightforwardly make an individual more moral*. Assuming a pill to lower our tendency to laziness can equally lead to us doing what is morally good or doing morally evil actions. Physical strength, capacity to focus, lack of laziness, emotional connectedness etc. are psychological features that do not necessarily motivate us to see what is good and reasonable to do and to choose it. As a witty remark found on the wall of a diner says, "Drink more coffee: You will do the same stupid things, but with more energy!".

Second, it does not seem true that our so-called moral faculties are the ultimate source of our moral life and ethical landscape. Most of the time, it seems that the source of our moral pursuits and of our ethical landscape have as more to do with our experiences, our encounters, and the people that have shaped our lives, rather than our capacities. For instance, even a person who has a physical and psychological tendency to being aggressive can understand and practice the virtue of kindness if she has been exposed to an environment full of kind people.

The third reason we take to be the most fundamental. Believing that physical enhancement is the privileged path to the removal of our inclination to dismiss the good is a *naïve view of the sources of moral evil* in human life. It relies, we submit, on a form of *internalization of the liberal ideology from the political and social*

*sphere to the individual and moral sphere.* As authors such as Slavoj Žižek (2009) have pointed out, the ‘liberal ideology’ is that view of social life according to which the ‘other’ is the source of all political and social evil (Žižek, 2009). For the liberal ideology, the individual subject is *perfect in herself*, knows what she wants, wants what she knows, and inevitably pursues the good, and if she cannot realize her good scopes this is simply due to the obstruction that the ‘other’ – other people, society, the State etc.

The project of moral progress via physical enhancement, taken as an overarching theory of the source of moral evil, relies precisely on an analogous ideological assumption. That is, as an individual, I am not absolutely responsible for moral evil. If I am inclined to evil, this is due to some *other* that is not me. In this case, *the ‘other’ is the outdated or not-yet-enhanced body that I find myself temporarily stuck with:* an internalized ‘other’ in the form of an outdated ‘wetware’ that I should enhance or ideally replace.

We reject the liberalistic assumption that the source of moral evil is rooted in an outdated body and the connected claim that merely enhancing the body through biomedical technologies is sufficient to remove the source of moral evil in human beings. In contrast, while we are optimistic that biomedical technologies may play a positive role in the moral enhancement of human beings, we take the root of moral evil to be a more complex phenomena. And, given its complexity, its ultimate eradication cannot be achieved by adopting the framework of liberal ideology.

#### **4. A MISSING “TECHNOMORAL” VIRTUE: THE VIRTUE OF NON-CONSERVATIVE BODILY INTEGRITY**

One last point we would like to make is that, if what we have said is true, it follows that there is a need in our (inevitably) technoscientific life for a *new virtue*, what we call the virtue of *non-conservative bodily integrity*. Alasdair MacIntyre has contributed maybe more than anybody else in recent times to a revival of virtue ethics. His seminal work *After Virtue* contains not only a genealogy of the birth and decline of the idea of virtue, but also a perspective of the possible future role that virtue might play in our societies – and will have to play, according to him (MacIntyre, 2007). MacIntyre’s entire project is then an attempt to re-think the idea of virtue and to show its essential relevance in our contemporary world. This, of course, will require from us not only to rehabilitate a teleological conception of the human being and a related substantive understanding of the human good, including the figure of virtue, but also the discovery of *new particular virtues* – new specific needs that our life might manifest in the ever-changing conditions of our society. Our technological world requires then from us a moral reflection for understanding what new particular virtues might be needed to preserve and enrich our understanding of human flourishing in a technological world.

Moreover, MacIntyre (2007) points out how after the Enlightenment project and the decline of Aristotelianism we will need today a new virtue, a kind of *virtue without name*: the virtue of creating public spaces in which learning the virtues is again possible. This is certainly true in our technoscientific society. The advancement of a technoscientific way of thinking and living, which is not only legitimate but also desirable and advantageous for many reasons, does not rule out the need for understanding better the nature and conditions for our having a genuine human experience – which, we have argued, is dependent upon the possibility of realizing in one’s life fundamental values defining the human being as such. Nevertheless, this is clearly not the central problem for our society. As MacIntyre remarks, our additional critical problem is to *foster places and communities in which identifying, practicing, and learning (traditional and new) virtues might become possible*. In fact, our capacities for practical reasoning are supported not only by our intellectual skills, but by the experiential encounters with concrete people and by the narrative turns that those encounters produce in our self-narration. Keeping this in mind, in this section we want to make one final point: there is the need for a new, fundamental virtue related to our understanding and sense of the human body, what we shall call the virtue of non-conservative bodily integrity (hereafter NCBI); accordingly, cultural and moral advancement of our societies will be possible only as long as the technological development and hybridization of our bodies will be accompanied by the social and political support to concrete contexts (schools, hospitals, homes, sport associations etc.) in which practicing and learning NCBI is possible.

The virtues of the body are usually associated to the perfection of our bodily capacities, e.g., strength, health, dexterity, specific skills, etc. From a broader, Aristotelian point of view, they are understood in relation to the fulfillment of the human life as a whole. A life fully devoted to strengthening the body and developing certain skills for achieving success in a certain sport might not be a life in which the potentialities of the body have been realized fully: not because the body hasn’t been exercised, but because the exercise of the body has taken the place of all other activities and has denied the possibility to other actions and human goods to be realized.

Thus, the framework of virtue ethics applied to the body has been traditionally: “How should I use the body that I have? What is the role and place of the perfection of my body with respect to the whole of human life, to the realization of all its goods?”. As we will see soon, this question must be updated.

In a recent work devoted to the development of a virtue ethics for our technological world, Shannon Vallor speaks of “technomoral” virtues. She writes:

How can humans hope to live well in a world made increasingly more complex and unpredictable by emerging technologies? ... in essence my answer is this: we need to cultivate in ourselves, collectively, a special kind

of moral character, one that expresses what I will call the technomoral virtues (Vallor, 2016, p. 1).

Her constructive work identifies twelve fundamental technomoral virtues (with a bunch of related subvirtues): honesty, self-control, humility, justice, courage, empathy, care, civility, flexibility, perspective, magnanimity, technological wisdom (Vallor, 2016, p. 120). However, she doesn't say much about the body. In today's technoscientific scenario, the ethics *of the body* seems to face a new challenge. That our choices today are inevitably "technomoral choices", (Vallor, 2016, p. 2) as Vallor suggests, seems to imply that also our consideration of the moral life with respect to the body should treat the body as an almost inevitably *technobody*. What shall we do? The body is not simply given anymore; it is modified, enhanced, built. Should we say a categorical no to this option? As we have seen, the wholesale prohibition on the use of biomedical technologies to enhance humans is highly problematic. Not only because the line dividing technological healing and enhancement is vague and shifting (pace Sandel), but also because it is not clear why all forms of enhancement should be rejected. We "enhance" our professions, our houses, our cars ... why shouldn't we enhance our bodies? Rather, the point is that certain forms of enhancement might eventually remove the conditions for having a genuine human experience. It is *those* forms of bodily enhancement that we shall avoid. As we have seen, the body has an intrinsic functional value for the realization of fundamental human goods. Of course, this does not mean that the body cannot be modified at all technologically. On the contrary, this points to the fact that in modifying the body we will have to avoid losing the intrinsic role, or *intrinsic functionality*, that the body has for making human experience flourish.

In addition, this means that, from the ethical point of view, the way in which our body is now is not a moral good in itself. Rather, it is a moral good for the desirable and necessary human ends that it serves – that it serves not as an extrinsic means, but as a *constitutive part*. The body is neither the meaningless stage for an anarchic experimentation of possibilities of hybridization, (Braidotti, 2013) nor an untouchable and unmodifiable given. On the contrary, it is that fundamental dimension of what we are that should be *preserved in its integrity*. However, preserving the integrity of the body does not imply bioconservatism in principle. Preserving the integrity of the human body means that we should at once "keep" (or "watch out for") and "cultivate" its structure (Valera, 2013). In other words, *keeping the integrity of the human body does not mean leaving it untouched, but maintaining it "intact" with respect to its intrinsic functionality for the realization of the fundamental goods of human experience*. Preserving the body does not mean sheltering it from any technological intervention, but rather avoiding taking away from it the intrinsic conditions it embodies to realize the human good. For this reason, NCBI virtue becomes crucial.

It also seems clear that NCBI becomes available only if we create and foster private and public spaces in which such virtue is preserved. This is not an easy task in a world in which the way of thinking and of living is more and more informed by a technoscientific liberal ideology. But the health of our embodied life will be dependent upon the capacity to understand in what cases our bodies, including our hybrid, cyborg-like body, will realize rather than hinder the realization of the agatological aspirations of human experience. This point of view of NCBI creates a multifaceted moral scenario. It might well be that we will have to renounce to technological help and enhancement in certain cases if human experience is at risk. In other cases, enhancement might lead to a more human life. It is also likely that in most cases technological enhancement technologies will be unnecessary and purely optional. For instance, keeping in touch with families and friends through technology is most likely a good thing, and it will become more and more necessary in our globalized and cosmopolitan world, to the point that – maybe – refusing all technology will have most likely as a consequence that we will not be able to live up to our family bonds; nevertheless, using a device implanted in our brain instead of a traditional computer is not necessarily superior and, to some extent, indifferent to the realization of the good at stake.

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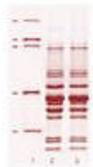
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