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In Defense of Posthuman Vulnerability

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Abstract: Transhumanism is a challenging movement that invites us to rethink what defines humanity, including what we value and regret the most about our existence. Vulnerability is a key concept that require thorough philosophical scrutiny concerning transhumanist proposals. Vulnerability can refer to a universal condition of human life (ontological vulnerability) or, rather, to the specific exposure to certain harms due to particular situations (social vulnerability). Even if we are all vulnerable in the first sense, there are also different sources and levels of vulnerability depending on concrete social circumstances. Recently, Michael Hauskeller (2019) argued about a fundamental incompatibility between transhumanism and vulnerability. He understands vulnerability as an existential category, linked to woundability and mortality. This idea is akin to ontological vulnerability, but it does not notice some important features of social vulnerability. On the other side, transhumanism is a complex and non-homogeneous movement. Here we distinguish between a strong and a weak version of transhumanism. We will propose that the salience of vulnerability is only diminished

in the radical one, while a moderate version can reconcile vulnerability with human enhancement. Thus, vulnerability, a concept that has recently gained much importance as an anthropological category in contemporary ethics, is not necessarily at odds with any transhumanist project.

Keywords: Care, Enhancing Vulnerability, Human Enhancement, Posthuman, Transhumanism, Vulnerability.

1. Introduction

Transhumanism is a challenging movement that invites us to rethink humanity, including what we value and disesteem the most about our existence. Vulnerability is a key concept that requires thorough philosophical scrutiny concerning transhumanist proposals. Recently, Michael Hauskeller (2019) presented an original contribution to the debate about transhumanism and vulnerability. He formulated the concept of 'existential vulnerability', which evokes themes such as human mortality and fragility, thereby pointing to what ancient Greeks called *ephemeroi*—i.e. those who live one day. According to him, transhumanism neglects and pretends to defeat human vulnerability, which makes him suspicious about both the radical life extension and the extreme enhancements that this movement vehemently defends.

Needless to say, vulnerability is not the only human existential value that is allegedly being eroded by transhumanist ideals and by the emergence of new technological advances (see Birnbacher 2010), and yet recent literature has tended to focus in the idea that transhumanist projects menace the precious human vulnerability (Asla 2019, Cannavò 2019, Hauskeller 2019, Llano 2019, Woollard 2019).[1] It seems necessary, therefore, to give weight to the question of to what extent transhumanism defies human beings

[1] In addition to Hauskeller's work, in a former monograph on Transhumanism of *Scientia et Fides* two articles mentioned in passing this topic. Asla (2019) pointed out, from a Thomistic perspective, that human vulnerability is intrinsically ligated to corporeity, i.e. our natural vulnerability stems from our embodied existence, which *only* the most radical attempts of transhumanism could undermine. Moreover, Woollard (2019) vindicates the relevance of vulnerability in its relationship with suffering from a philosophy of cancer point of view.

as vulnerable beings. Moreover, we should take seriously the question of whether prospective transhuman or posthuman existence would represent a significant decrease in what we understand as vulnerability.

In this article, we claim both that transhumanism can be compatible with a curtailment of certain vulnerabilities and that vulnerability is an ineradicable feature of any kind of human or posthuman existence. The article is divided in four parts. First, we will clarify the concept of vulnerability addressing the most significant theories that have focused on its ethical importance in the last decades. Our characterization recognizes that vulnerability is a relevant part of the human condition, but we do not consider that this can be an argument *per se* against enhancing and changing the human species. After that, we distinguish between a strong and a weak version of transhumanism. We will propose that the salience of vulnerability is only diminished in the radical one, while a moderate version can reconcile vulnerability with human enhancement. Finally, we will conclude that it is possible to defend a vulnerability-friendly transhumanism, in which vulnerability turns into an inspiring category (not an insurmountable constraint) for human enhancement projects.

2. Rethinking vulnerability: conceptual clarifications

Vulnerability is a concept increasingly employed in contemporary ethics discourse. Etymologically, as Hauskeller (2019) points out, it refers to the possibility of being wounded (Latin *vulnus* means 'wound'), thereby evoking the idea of openness to harm and of, eventually, death. In the last decades, vulnerability has been a category present in public policy documents and ethical guidelines, such as the well-known *Belmont Report* (1978) or the European Commission's four *Basic Principles in Bioethics and Biolaw* (1995–1998, Rendtorff 2002). However, despite this growing attention to the issue, commentators (Bracken Roche et al. 2017, Ten Have 2017) usually agree on the lack of systematic and comprehensive academic account of human vulnerability and the need of further clarification on the topic. According to Mackenzie, Rogers, and Dodds (2014), the most detailed analyses of the

concept of vulnerability have been produced within three domains: bioethics (see, for example, Kipnis 2001, Luna 2006 or Ten Have 2016); feminist ethics, especially the ethics of care paradigm (see Kittay 1999, Fineman 2004 and 2008, Held 2006, or Tronto 1993 and 2013) and postmodern political thought, which links vulnerability with other key concepts, such as corporeity and precariousness (Butler 2004). Vulnerability is thus a work-in-progress anthropological, ethical and political category which is set to become pivotal for the proliferating discourses concerning the human condition.

In his article *Ephemeroi – Human Vulnerability, Transhumanism, and the Meaning of Life* (2019), Michael Hauskeller employs the idea of human vulnerability as a central account on his critique against transhumanism, focusing on what he calls "existential vulnerability". Indeed, the concept of vulnerability he is describing is rooted in the existential experience of being human. He posits that only the beings which exist (in a philosophical, existential sense) can in fact be vulnerable. In other words, vulnerability has to do with being conscious of one's own fragility, one's own temporality, and the identity as a being similar but different from other beings, who are also vulnerable.

It is possible to identify three main elements within Hauskeller's concept of vulnerability: (*i*) the possibility of being wounded, which is linked to mortality; (*ii*) self-perception as a source of vulnerability and (*iii*) the importance of the relationships with others. So, first of all vulnerability corresponds to the possibility of being wounded. In this sense, Hauskeller understands vulnerability as a "function of our mortality" (10-11); in some way, all harms we can suffer remind us of the inevitable truth of death and take us away from fantasies of omnipotence.

Secondly, Hauskeller highlights the importance of self-perception of vulnerability. Not everything that can be damaged is vulnerable. Life can only be taken away from living beings; and, moreover, these beings need to be at least to some extent aware of their existence, which makes them value it. Mortality, a central component of Hauskeller's vulnerability account, does not mean only the possibility of ceasing to exist in the world (a rock can also crash and "lose" its previous way of being in the world); it also implies an acknowledgment of this possibility that deploys on the course of life. As

Hauskeller shows, such acknowledgment is qualitatively different from any other. It is a radical existential condition for human beings and it involves a serious difficulty for being consequently assumed, because it is nothing less than the fundamental menace to our being. That difficulty is what can explain that we sometimes behave as if we or others were non-vulnerable, even if this is a blatant fantasy.

The importance of the vulnerability of others, not only one's own, is what leads us to the third point. Hauskeller (2019, 14) emphasizes the problem of the absence of others' concerns about one's own death. If nobody cares about me, even if I do, my existence loses something intuitively valuable. As we will see, the interdependence between human beings is a central issue in recent vulnerability literature—vulnerability indicates that we radically need each other to sustain a valuable life and a decent death.

In vulnerability studies, it is typical to distinguish between two different notions.[2] On the one hand, *ontological vulnerability* is related to what makes us aware of the shared, universal imperfection and fragility of all human beings (Nussbaum 1986, Butler 2004, Fineman 2004 and 2008). This main idea denies the misleading anthropological conceptions that presume that some way of total independence is possible within human life. Martha Albertson Fineman (2008, 1) states that "vulnerability is—and should be understood to be—universal and constant, inherent in the human condition."

On the other hand, *social vulnerability* focuses on different levels of vulnerability, that is, the variation of the dangers one is exposed to, due to the specific context she is immersed in. Usually, the situation experienced by each person is related to socio-economic factors—e.g., some are more exposed to poverty or violence due to race discrimination. Following this view, we can talk about "vulnerable groups", that is, people whose situations

[2] In a different terminology than the one utilized here, Onora O'Neill (1996) distinguishes between persistent vulnerability and variable or selective vulnerability. There is also a different but equally dualistic categorization between intrinsic and contingent vulnerability, that is, the difference between an inevitable and "natural" vulnerability and another one caused by contingent social factors (Schroeder & Gefenas 2009). Sometimes this categorization overlaps the main one between ontological and social vulnerability, but we will not refer to it in order to clarify our argument.

make them more likely to suffer certain harms compared with the rest of the population. Some major works on this field have been developed by Florencia Luna (2006)[3] and Robert E. Goodin (1985), among others. One of the most influential definitions of vulnerability of this sort first appeared in the CIOMS *International Ethical Guidelines for Biomedical Research Involving Human Subjects* (1993). In this document, vulnerable people are characterized as "those incapable of protecting their own interests" (CIOMS 2002, Guideline 13, unprefixed pages).

That said, Hauskeller's existential vulnerability seems to be akin to the idea of ontological vulnerability. He focuses on the shared, intrinsic fragility of human beings *qua* human beings. In doing so, he unmasks the quests for achieving invulnerability as what they are: incompatible with our human condition. This is a common objective in ontological vulnerability literature, and it can help us to build more rigorous and fruitful anthropological models.

Indeed, as critics have shown (Fineman 2008, Delgado Rodríguez 2017), the "vulnerable groups" view implies the risk of misunderstanding what is like to be vulnerable. If some people are part of the "vulnerable groups", the rest do not; it can lead us to the mistake of conceiving non-members of vulnerable collectives as homogeneously invulnerable. This is why becoming aware of the shared vulnerability of all humanity is so relevant, neglecting those anthropological conceptions that presume some kind of invulnerability or full-blown independence in human condition.

However, we cannot deny that some people, as a matter of fact, are more exposed to certain harms than others. For example, being a person with a functional diversity implies that the opportunities for freedom of movement are reduced in comparison with a person with average level capacities. Being a woman exposes oneself to different acts of violence, due to gender, than being a man does. Being a child involves a very high level of dependence on adults, which implies a great vulnerability to their

[3] Luna (2009) proposed one of the most refined analysis of social vulnerability. She defends the use of the "layers" metaphor instead of the "labels" one, in order to avoid some of the problems that arise from characterize certain groups as "essentially" vulnerable (stigmatization, paternalism, marginalization).

(good and bad) decisions. We need an account of vulnerability that distinguishes between the different situations a person can be embedded in, recognizing the diversity of human life. Vulnerability is not just mortality, but also the possibility of being harmed in physical and emotional ways; it is the recognition of our shared interdependence[4] as human beings. We will all die someday, but the quality of the life that precedes death can vary significantly, and an adequate account of human vulnerability can help us to recognize the factors that make some lives more vulnerable than others and to work for diminishing these inequalities.

Hauskeller is right on the relevance of undertaking the universal vulnerable condition inherent to human life, and we also concur with the idea that any futuristic project regarding human species, as the transhumanist project is, could never deny this fact if it wants to be a feasible and worth-pursuing proposal. Yet, we do not agree that there is an incompatibility between the transhumanist aspirations *per se* and a rigorous acknowledgment of human vulnerability. Instead, we advocate for a conception of vulnerability which directly links human condition with the aspiration of reducing harm and precariousness in human lives. This aspiration has traditionally been pursued by medicine through its therapeutic endeavor. Even though vulnerability is commonly related to disease, there is a significant difference between a healthy human (potentially wounded) and an infirm one (actually wounded). Whether the transhumanist purpose of human enhancement—namely, improving the capabilities of healthy people by technological means—can also be aligned with this aspiration will be addressed in the next section.

Focusing on an idea of vulnerability capable of assuming both the shared fragility of human life and the different threats one can confront depending on particular situations, we glimpse a common tendency of human history: the pursuit of diminishing harm and peril. Vulnerability means interdependence; when we realize that we radically need each other

[4] The relationship between "vulnerability" and "dependency" is not an obvious one. We have no enough space to develop this issue in here, but we align with the idea of interdependence as a consequence of vulnerability. For further exploration on the topic, see Kittay (1999) and Dodds (2014).

to survive (and, also, to have a valuable life), we associate to create safer and more enjoyable ways-of-life in which we can better get over the harms we are exposed to due to our frail condition. Of course, we can never definitely defeat imperfection; at the very least, one day we will die. But this does not mean we do not strive to make our lives more long-lasting, comfortable and secure. As stated by Alfredo Marcos (2016), a responsible acknowledgment of vulnerability should avoid denial but also conformism: "this vulnerability must be recognized [...] and at the same time mitigated" (Marcos 2016, 43).

Some authors have proposed the idea of shared vulnerability as a fruitful basis for solidarity and equality. Judith Butler (2004) defends the potential of the awareness of common vulnerability to encourage empathy and association. Vulnerability is, in her view, a condition inherent to being human. That does not mean that all of us are exposed to the same perils; rather than that, it helps us understand different situations experienced by different people. Eva F. Kittay (2005) fosters an account of human dignity rooted in the shared vulnerability and the consequent common need for care, namely, our interdependence. Since we are all fragile (on different levels depending on moments and situations) and we are all also needy from others' care, we are all equally worthy and we have a balanced responsibility regarding others' needs. Mackenzie, Rogers, and Dodds (2014) see vulnerability as a consequence of three aspects of the human condition: embodiment, emotional and psychological dependence on others, and exposure to conditions of the (natural or not) environment. Ten Have (2016) also underlies the positive aspects of vulnerability, related to openness, potentiality to change, and basis for the development of valuable relationships.

Specifically, Mark Coeckelbergh's (2011) insights on posthuman vulnerability can shed light on the possibility of understanding a version of transhumanism compatible with the acknowledgment of human vulnerability. Coeckelbergh highlights the unavoidable human vulnerability and denies the feasibility of a version of transhumanism that intends to reach invulnerability. Still, he does not infer from it that the transhumanist project by itself is naive or impossible. Instead, he identifies different kinds and sources of vulnerability, showing that a posthuman future could possibly

avoid some of them, but probably will face some different ones; and, also, defending that we cannot possibly escape from some of the actual ones. As he states:

> Vulnerability is not a matter of 'external' dangers that threaten or tyrannize us, but that have nothing to do with what we are; instead, it is bound up with our relational, technological and transient kind of being – human or posthuman. (Coeckelbergh 2011, 8).

Transhumanist projects need to take a serious account of human vulnerability. Yet, this does not mean to renounce the ambitious aim of reducing risks and harms through technological development, even if in the very long run it changes what we presently are as a species. This means, on the contrary, that we need to interrogate ourselves about what type of source of peril are we going to tackle and how each endeavor can best meet objectives aligned with aspirations of equality and justice.

Therefore, the concept of vulnerability we have developed here could be compatible with some versions of transhumanism. It is a formulation that (*a*) understands both universal and contextual condition of vulnerable human life; (*b*) takes vulnerability as an opportunity to become aware of the radical interdependence intrinsic to human life; (*c*) implies the tentative legitimacy of any project which aims to make life the less hazardous and the less insecure as possible, looking for the best quality of life that we can reasonably achieve; (*d*) trusts in the creative capacity of human beings to make life better, taking vulnerability as an inevitable flip side of this freedom; and (*e*) defends that even if we are aware that total invulnerability is an impossible ideal, we may well pursue a world with less vulnerability, knowing that we would maybe be vulnerable in some new different ways.

3. Two interpretations of transhumanism

There is no doubt that transhumanism is often perceived as paradigm incompatible with a vulnerable form of life such as the human. As Coeckelbergh (2011, 7) said: "the transhumanist project can be interpreted as

a particularly hostile response to (human) vulnerability that probably has no parallel in human history." Yet, transhumanism is manifestly a plural movement that sometimes diverges when it comes to its many theoretical positions, practical interests and particular controversies (Diéguez 2017). It is important to note, starting from such premise, that there is not necessarily a unanimous stance about the importance (or insignificance) of vulnerability in the discussion of transcending technologically human limitations.

For that reason, a fine-grained analysis is required to avoid lumping together different conceptions. In this section, we will address a strong and a weak version of transhumanism. We think that Hauskeller and other commentators engage in a radical sort of transhumanism when it comes to analyze vulnerability. We will concede that in the strong version the salience of vulnerability is substantially diminished. For us, this downplaying of human vulnerability is difficult to accept. We will show, moreover, that *some degree* of vulnerability would be an ineradicable feature of posthuman existence, as some authors had suggested (Bostrom 2008b, Birnbacher 2010, Coeckelbergh 2011). In short, the aspiration to eliminate vulnerability is not only normatively problematic, but also unachievable. On the other hand, we will present a weak version of transhumanism in which the significance of vulnerability is not denied, but instead becomes itself an impulse of change to make human lives better, even if it drives humanity to enhance its biological condition and, consequently, to accelerate the conversion into a new species.

The strong version of transhumanism

To give us an idea of the prospects of a sort of radical version of transhumanism we shall pay attention to the next fragments, written by two of the most prominent representatives of this movement. Consider the following one, from Max More:

> Mother Nature, truly we are grateful for what you have made us. (…) However, with all due respect, we must say that you have in many ways done a poor job with the human constitution. You have made us vulnerable to disease

> and damage. You compel us to age and die – just as we're beginning to attain wisdom. (…) What you have made us is glorious, yet deeply flawed. (…) We have decided that it is time to amend the human constitution. (…) We will no longer tolerate the tyranny of aging and death (…) We will expand our perceptual range (…) We will improve on our neural organization and capacity, expanding our working memory, and enhancing our intelligence. (…) We will take charge over our genetic programming and achieve mastery over our biological, and neurological processes. (…) While we pursue mastery of our own biochemistry (…) These amendments to our constitution will transition us from a human to a posthuman condition (…) (More 2013 [1999], 449-459).

Let's now consider this one, written by Nick Bostrom:

> Have you ever known a moment of bliss? (…) If you have experienced such a moment, experienced *the best type* of such a moment, (…) And yet, what you had in your best moment is not close to what I have now – a beckoning scintilla at most. (…) My consciousness is wide and deep, my life long. (…) The transformation is profound, but it can be as gradual as the growth that made the baby you were into the adult you think you are. (…) I urge on you nothing more, nothing less, than reconfigured physical situation. (…) *Secure life!* (…) *Upgrade cognition!* (…) *Elevate well-being!* (…) Pleasure! A few grains of this magic ingredient are worth more than a king's treasure, and we have it aplenty here in Utopia. (…) Utopia is the hope that the scattered fragments of good that we come across from time to time in our lives can be put together, one day, to reveal the shape of a new kind of life. The kind of life that yours should have been. (…) Human life, at its best, is fantastic. I'm asking you to create something even greater (Bostrom 2008a, 1-7, italics in original source).

The former texts are noteworthy examples of this revolutionary version of transhumanism. *Letter to Mother Nature* (More 2013 [1999]) and *Letter from Utopia* (Bostrom 2008a) are passionate missives that display a visionary attitude about a possible idyllic human future. Transhumanism is, in this sense, a movement that exhibits remarkable utopian tendencies (Hauskeller 2014). It is interesting to note that in those utopian visions it underlies a conceptual devaluation of the human species, in which the brighter the posthuman future seems to be, the bleaker our current existence looks

(Hauskeller 2012, 44-46). Consequently, this theoretical framework not only points to the foreseeable splendor that a radical technological enhancement could bring about, but it also intends to show the deficiencies of the human constitution that we should overcome.

Transhumanism is, moreover, a notorious future-oriented movement. One of the paradigms that transhumanism embraces is *longtermism*, that is, directing our current actions in consideration of their impact on the very distant future. The far-reaching evolutionary stages that should be pursued start in the human and continue with the transhuman until arriving to the posthuman. *Transhumans* are considerably enhanced humans, who still are not far from its predecessors, but who exceed them remarkably in cognitive, emotional and physical abilities and in health span.[5] In other words, they are considered "transitional humans" because they are a halfway evolutionary point between humans and posthumans (More 1993; Porter 2017, 238). Posthuman existence is the real aim of transhumanism. Radical technological enhancements would lead to a substantially different form of being, whose way of life is difficult to imagine for humans (Bostrom 2008a, 2008b).

Posthumans, according to Bostrom (2008b, 108), greatly surpass human general capacities such as in healthspan, cognition, and emotion. Furthermore, if irremediable natural death lurks behind every human life, posthumans[6] seem to be indifferent to aging and to the biological vulnerabilities that lead to disease and to decease. Another main proposal of transhumanism is *mind uploading* (More, 1993). This idea consists in

[5] Note that this type of variation could still be intra-specific in some cases: the sapiens of the Pleistocene could see contemporary humans like transhumans. Of course, drawing the line between intra-specific enhancement and species-changing enhancement is a challenging controversy that, however, escapes the objectives of this article. This puzzling issue leads to a kind of identity problem: for *us*, humans, it is difficult to guess what would be valuable for a hypothetical novel species resulting from a radical transhumanist endeavor. We thank an anonymous reviewer for pressing us on this topic.

[6] This sense of the word 'posthuman', as may have been noticed, is quite different from the use that make some authors rooted in the postmodern feminist tradition, such as Halberstam & Livingston (1995), Hayles (1999), Braidotti (2013), etc. According to them, we are already posthumans in the sense that we are not anymore the 'human' subject that the so-considered traditional anthropocentric, sexist, specist, and racist humanism has constructed. See Rueda (2020a) for some differences and similarities between transhumanism and philosophical posthumanism.

uploading the human mind to a cybernetic substrate to evade biological death and to achieve a sort of digital *amortality*.[7] As Bostrom (2008a, 3) affirms, human body is a deathtrap. Human body is, moreover, an evident source of pain and suffering due to its physiological nature—an inescapable characteristic of every sentient animal. Accordingly, David Pearce (2015 [1995]) proposed from a negative utilitarian transhumanist perspective to abolish suffering in all sentient beings through genetic engineering and nanotechnologies. Thus, Pearce's posthumans will have completely excluded all kind of suffering from their lives.

In this context, two preliminary consequences must be noted in relation to vulnerability. First, the ideal that guides transhumanist ambitions (i.e. the posthuman) represents a type of existence in which human-type bodily vulnerabilities are substantially diminished. If human existential and *ontological vulnerability* consists in being woundable, frail and mortal (Hauskeller 2019), posthumans can be considered without a hint of doubt as *less* vulnerable beings. In addition, if transhumanism is an evolutionary project, and it certainly is (More 2013), then the decrease in vulnerability will inevitably be gradual. Hence, transhumans are more ontologically vulnerable in comparison with posthumans, but less vulnerable than humans. It is important to acknowledge that vulnerability, even in its ontological sense, is not an all or nothing category, but a scalar concept with different grey colors.

Second, transhumanist projects might affect what we previously have characterized as *social vulnerability*. Many authors have warned about the perils of societal disruption, the increase of inequalities and the creation of new hierarchies since the beginning of the human enhancement debate. For instance, the development of genetic engineering might lead to the creation of a New Breed (Harris 1992), a population divide between the GenRich and

[7] A common mistake is to label this aspiration as a search for 'immortality', which intrinsically means the impossibility of death. Posthumans, even if they are uploaded into a virtual cloud, an android or a supercomputer, will still have present the possibility of death, either as an optional choice or as an external menace. See Coeckelbergh (2011) for some external risks that make posthuman existence still vulnerable to death. See also García-Barranquero (2021) for another perspective on the "immortalist fallacy" of transhumanist's mind uploading.

the GenPoor (Silver 1997), "a full-scale class war" between the enhanced and the not enhanced (Fukuyama 2002, 16), or even to the violent genocide of the inferior human species (Annas et al. 2002). Although most empirical predictions about the prospective uncertain impact of genetic enhancement technologies at a societal level are contestable, one must take account of the fear that such interventions might have grave deleterious effects, such as unequal promotion and disruption of the social equilibrium (Llano 2019, 43; Cannavò 2019, 12).

Therefore, it is fundamental to bear in mind that enhancement technologies may create new kinds of social vulnerabilities or that may deepen the current ones. In the hypothetical and speculative scenario that radical enhancement will lead to a future conflict between different moral statuses and potential diverging interests between the long-standing sapiens and its "ungrateful successors" (either transhumans or posthumans), the notion of social vulnerability would become more prominent precisely because of its relational and context-sensitive dimension. Human enhancement might create in this sense some vulnerable collectives. Of course, this is not an unbeatable argument against transhumanism (inasmuch as it is ultimately a solvable problem) but rather the acknowledgment that transhumanist proposals might have an impact that goes beyond the ontological aspect of vulnerability, reaching the social one.

At this point, it seems clear that in the strong version of transhumanism both ontological and social vulnerability have a deserved place in the debate. Radical transhumanism entails a diminished sense of ontological vulnerability, especially a decrease in human-type ontological vulnerabilities. Posthumans would then be, all things considered, *less* vulnerable than humans. However, the question of whether posthuman existence would exclude any kind of vulnerability remains to be solved. In the previous section we have suggested, following Coeckelbergh (2011), that it is highly doubtful that such would be the case. Certainly, posthumans will be vulnerable, but in a very different way than us. In this respect, Nick Bostrom (2008b, 132) stated that "[a] posthuman could be vulnerable, dependent, and limited." Others like Birnbacher had pointed out in the same vein that:

> *Universal* properties like embodiment, mortality or vulnerability are too unspecific to single human nature out from the "natures" of other kinds of animals, and they are unlikely to be transcended even by the wildest posthumanist dreams. Even if the life-span of a "posthuman" humanity exceeds that of present humanity by a considerable time or if their health and safety far exceed ours, "posthumans" will still be embodied, mortal and vulnerable (Birnbacher 2010, 102, italic in original source).

In conclusion, there is not a category such as 'ontological invulnerability' that posthumans could achieve. The quest for posthumanity has been coupled sometimes with a longing for *perfection*. Indeed, some critics have overstated the relevance of the term 'perfection' in the general debate of human enhancement (Kass 2003; Sandel 2007). Nevertheless, transhumanists seldom (or never) use the word 'perfection' to describe posthuman existence, probably because it is an extremely vague concept. Perfection, whatever it means, should not be used concerning human enhancement if it is characterized as invulnerability. Posthumans would neither be perfect nor invulnerable. Would anyone say that the gods of Olympus were not vulnerable? No doubt they were vulnerable in their own way. Vulnerability is not a human-exclusive category. Still, to what extent the decrease of posthuman vulnerability might be close to zero is an open question that would require further examination, a task that exceeds the aims of this article.

The weak version of transhumanism

The yearning for reducing different types of vulnerabilities is part and parcel of human history. In this section, we will offer another interpretation of transhumanism that we believe can be compatible with both (*a*) the aspiration of mitigating certain vulnerabilities (*b*) and the acknowledgement that vulnerability is a valuable component of human and other forms of life—including transhuman and posthuman ones. We will first start characterizing this kind of weak transhumanism that is reconcilable with the saliency of vulnerability.

Transhumanism can contribute to the long historical (but not necessarily progressive) continuum that assumes the societal importance of taking over

human vulnerabilities. However, this version should be devoid of some of the excesses that we think are present in the radical version—and risk to be also present in the moderate one. Three components should be specially excluded: (*i*) evolutionary eagerness, (*ii*) high-tech enhancement fetishism, and (*iii*) utopian commitments. But in addition to these shortcomings, there are some lessons to be learned.

First, the *evolutionary eagerness* that transhumanism exhibits should be abandoned. Although the pace of natural evolution is unhurried and its random mutations do not care about human welfare, the prospect of an overarching conversion into a novel transhuman or posthuman species is self-defeating in the near and the medium-term. It might be possible, if so, only in the very long-term future, but there is the risk of leaving a part of humanity behind. At the moment we only can decide the first steps that might lead to that process (see Jonas, 1984 [1979]). On the other hand, the deflation of self-directed evolution does not mean that we should reject biological and genetic enhancements. The cumulative impact of enhancement technologies may accelerate, in fact, the creation of a novel descendant of the human species. After all, *Homo sapiens* is not the end-point of evolution, but it is a transient being that in some time is inevitably doomed to perish, like any other biological species. The case against 'altering' the species, moreover, goes hand in hand with the inconsistency of 'alter-ing' form of lives that are in constant change, as Juengst had exceptionally manifested:

> Species are not static collections of organisms that can be 'preserved' against change like a can of fruit; they wax and wane with every birth and death and their genetic complexions shift across time and space. In our case, almost everything we do as humans affects that process (Juengst 2009, 50).

Second, we should avoid what we call the *high-tech enhancement fetishism*. The technophilic attitude of the strong version of transhumanism may lead to a bias in favor of cutting-edge technological interventions. Biomedical enhancements need not have any priority *per se* over other types of actions that improve the well-being of the human population. Throughout history, the most effective and widely accepted practices and institutions concerning

the care of human vulnerabilities have primarily been environmental and social interventions, such as family caring, architecture, traditional medicine, cooperative economy, and so on. This entails that cultural inheritance had changed our biological constitution and our genome, that is, "we have been enhancing human nature for donkeys' years without shivering much at all" (Lewens 2015, 17). Now, novel technologies might make a significant contribution to that process. Several emerging enhancement technologies, however, raise legitimate precautionary concerns. The more uncertain the potential risks and benefits of these technologies are, the more important traditional environmental arrangements will continue to be considered. Again, this does not preclude that the potential of environmental and social practices sometimes is limited. On some occasions, we should consider making changes in our biological constitution that go beyond therapeutic interventions.

Third, the *utopian tendency* of transhumanism should be tempered. Hauskeller has identified the characteristics of that trend elsewhere (2012, 2014). The siren songs of progress can sink reasonable biotechnological proposals for change. Defending that "enhancement (in terms of change) is better in and of itself" had been so-called a *progress bias*[8] (Hofmann 2017, 8). Another difficulty lies in what changes of the human constitution are for the better. As it is often said, "all progress is change, but not all change is progress." It seems to be widely accepted, nevertheless, the importance of healing disease, preventing disabilities or, shortly, using gene editing to correct single gene disorders, probably because we have a clearer idea (compared to the terminological vagueness of 'enhancement') of what these phenomena are. Surely, the epistemological and ethical challenge of the ordinary social indeterminacy of enhancement (either in quantitative or qualitative sense) might be overcome. Bioprogressive movements like transhumanism can increasingly reach a wider audience about what we can accept for 'enhancements' and why these changes are for the better.

[8] Hofmann uses that expression in contraposition to the *status-quo-bias* developed by Bostrom and Ord (2006).

Accordingly, this weak version of transhumanism might become a candidate to be considered in the shared endeavor of taking care of human vulnerabilities. This non-radical variant supports two important consideration for the ethical relevance of vulnerability: (*a*) its role triggering valuable caring relationships, and (*b*) recalling the structural social interdependence of human and posthuman lives. For the first, consider the following text, in which a puzzling fact of vulnerability was anticipated by Parens in the dawn of the human enhancement debate:

> When we are carried away by our benevolent desires to reduce the suffering of vulnerable people and, less benevolently, their cost to society, we forget that the vulnerability of others not only burdens us (though it surely does so), but also elicits from us the awesome capacity to care for others. Although—and I cannot be too emphatic about this—it would be a profound mistake to romanticize the need to care for vulnerable others and the need of vulnerable others to be cared for, it would be equally mistaken to ignore the goodness that those relationships can possess (Parens 1995, 147).

The enduring struggle with vulnerabilities is paradoxical because, on the one hand, in our attempt to alleviate them we are implicitly acknowledging that they burden both the vulnerable individual and society and, on the other hand, we think that something valuable elicits from the fact of taking care of vulnerabilities. For Parens (1995), there is goodness in fragility. Yet, that goodness is not necessarily conferred by the fact itself of being frail or vulnerable. Being severely ill does not bestow a special kind of goodness, it rather is a misfortune that hardly anyone wants for themselves. It is also true that we allocate a lot of resources to mitigate fragility. However, vulnerability is one of the bedrocks of the most meaningful human relationships that we establish. Childrearing, caring for the sick, cohabiting with a pet, or helping others are intrinsically valuable for a lot of people and those activities are in some way trigger out by different types of vulnerability. Human enhancement technologies should not diminish, consequently, the human disposition to care others (in the broadest sense of the term). It might also be possible that in the future some technologies might enhance human disposition to

care[9] while decreasing the most flagrant vulnerabilities. In short, caring should be part of posthuman existence.

The second reason is related to the previous one. Care and being cared is the acknowledgment of human interdependence. Admittedly, humans are not self-sufficient beings. We are vulnerable in part because we depend on each other. Certainly, humans are not self-sustaining animals, our survival success and our quality of life depends on others. Vulnerability is also the basis of other social commitments and institutions[10] that make our life worthy. Transhumans or posthumans, no matter how many enhancements they accumulate, will surely be beings who live in society. If the posthuman is a kind of Robinson Crusoe, it would be a life where many valuable things would be lost. Indeed, empowerment does not lead to self-isolation, but to a more robust reinforcement of our social bonds. A non-radical variant of transhumanism might make compatible the aspiration of using enhancement technologies to opening life opportunities (i.e. making people more autonomous in a relational, vulnerability-friendly sense) without endorsing the myth of self-sufficiency.

In the previous section, we have stated that even if enhancements lead to 'transcend' the human species, our successors *will* remain vulnerable in their own way. In this section, however, we are making a very different statement. Here, we are arguing that our potential successors *should* preserve certain kinds of vulnerabilities. Human vulnerabilities deploy valuable caring relations and interdependent social infrastructures that our prospective heirs could consider a positive inheritance. Of course, the debate on enhancing vulnerability is in its infancy and public deliberation on it will grow as enhancement technologies advance. Nevertheless, in this weak version of transhumanism, Hauskeller's and other authors' concerns about vulnerability

[9] One of the most contentious debates on human enhancement of the last decade has been the issue of moral enhancement. Here, we leave open the possibility that the enhancement of the tendency to care can be inserted in that controversy. For a recent summary of the daunting ethical debate about moral enhancement, see Rueda (2020b, 281–285) and Rueda and Lara (2020).

[10] In this article, we leave out another important issue, which is that our institutions and societies can also be vulnerable. Moreover, our planetary existence might be considered as vulnerable, as recently postulated by Bostrom (2019) in his article *The Vulnerable World Hypothesis* concerning global existential risks.

should be deflated. Thereby, transhumanism may become an unexpected ally. The onus of proof is now on the opponents who want to deny it a welcome.

4. Conclusion: celebrating (post)human vulnerability

The idea of vulnerability leads to two acknowledgments. In its ontological sense, it recalls in the impossibility of becoming immune to harm and eventually death, as Hauskeller (2019) pointed out. In that sense, the search for invulnerability is wishful thinking. On the other hand, in its social meaning, it shows that we should not try to achieve complete invulnerability, because it is precisely the realization of vulnerability which allows us to take care of each other. We need to assess both sides of the coin concerning transhumanist projects. That said, the pivotal role of vulnerability does not prevent us from trying to reduce those vulnerabilities susceptible of being addressed by enhancement. Consequently, the types of vulnerabilities resulting from enhancement projects should be at the core of the debate about transhumanism.

Moreover, according to Hauskeller, vulnerability is something to be celebrated:

> Now we can enjoy and celebrate being alive. And to the extent that being vulnerable in many different ways is part of being alive, we can also enjoy and celebrate our very vulnerability. (…) That requires courage and a different sort of strength, not the strength of the autonomous and self-sufficient being that transhumanists long to become, but the strength of those who are brave enough to live with imperfection and adversity, who don't shy away from the risk of getting hurt and who are mindful of the suffering of others. It is the strength of a vulnerable being that is not afraid of its own and others' vulnerability (Hauskeller 2019, 19).

Celebrating vulnerability is a wise attitude in humans—the *ephemeroi* (i.e. those who live one day). Our finitude, our mortality, and our woundability are reminders of the fugacity and frailty of life: *tempus fugit*, we will perish sooner or later. The acknowledgment of those facts might prompt to live less

unsatisfied. After all, human vulnerability is not only a source of suffering, but also of joy; as Nussbaum (1986) explains, vulnerability is part of our condition as creative and open beings.

We could even remind that vulnerability is not a human-exclusive category. Transhumans or posthumans should not be deprived of it. Nick Bostrom (2005) defended in his seminal article *In Defense of Posthuman Dignity* that dignity is not exclusive of human beings, and that human dignity does not rival or compete against posthuman dignity, but both of them are actually compatible and complementary. We think that it should be the same with regard to the debate on vulnerability. Vulnerability can take multiple and unexpected forms depending on a multitude of factors that range from the pure chance to the realm of human actions. The differences and similarities between human vulnerability and the one future transhumans or posthumans may possess will depend on the choices we make. One thing is certain: at the least, they will be vulnerable—at the best, they will appreciate it.

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