The Philosophical Debate upon Human Enhancement and the Question of Public Interest

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El debate filosófico sobre la mejora humana y la cuestión del interés público

Abstract: The ethical debate on human enhancement is one of the major topics of bioethics. In this article I dealt with a twofold bioethical point of view, scholarly bioethics and "bioethics in the making". I focus on the ethical claim that arises from "bioethics in the making" that calls for the inclusion of the moral reasons that are matter of concern for the public in order to enrich scholarly bioethics with more reflexivity. In so doing, I outline three philosophical approaches: speculative ethics within posthumanism, the philosophical anthropology of "being at-risk" of Coeckelbergh, and the ethics of enhanced warfighters of Lin, Mehlman and Abney. I then analyze several philosophical arguments present in those works that do not allow to reflect in-depth the role of public interest within scholarly bioethics.

Resumen: El debate ético sobre la mejora humana es uno de los temas más candentes de la bioética. En este artículo abordo la bioética desde un doble punto de vista, la bioética académica y la bioética en la práctica. Me centro en la exigencia de la bioética práctica que reclama la inclusión de las razones morales que interesan a la opinión pública como modo de enriquecer la bioética académica con más reflexividad. Para ello, presento tres enfoques filosóficos: la ética especulativa del posthumanismo, la antropología filosófica del "estar en-riesgo" de Coeckelbergh y la ética de los militares objeto de mejoramiento de Lin, Mehlman y Abney. Analizo, seguidamente, algunos argumentos filosóficos presentes en esos trabajos que no permiten una reflexión seria sobre el papel del interés público en la bioética académica.

1. Bioethical "in the making" and scholarly bioethics

The ethical debate on human enhancement is one of the major topics of bioethics. Enhancing human capabilities can be considered at least from a twofold bioethical point of view. The first one consists of considering bioethics as a new "industry" within clinical practice, body-advisers committees and so on. It gathers clinical and research bioethics committees, bioethics boards and interdisciplinary panels. Those committees are a type of activity entangled with science, technology and regulatory policy within a nation -e.g. United Kingdom or United States- or a political and economical partnership of states, as the European Union. This is the point of view of "bioethics in the making."

Bioethical assessments within "bioethics in the making" are articulated with scientific claims, technical possibilities, risk assessments, regulatory issues and public evaluation (Jasanoff, 2003; Schicktanz, Schweda & Wynne, 2012). Those national, regional and international institutions tackle both procedural and substantial questions that give rise to policy guidelines and moral

advices, which are the products of ethical case deliberation (Steinkamp, Gordijn & Ten Have, 2008). Furthermore, "bioethics in the making" includes different kinds of actors –ethicists, scientists, doctors, patients, lay-citizens, and so on– and it can be featured by an interdisciplinary approach. The *President's Council on Bioethics,* created in 2001 by G. Bush, the "Science with and for Society" Programme launched by the European Commission within 2020 Horizon –the EU framework on research and innovation– and the "Committee on Bioethics" of the European Council are examples of the intersection of bioethics, regulation, public issues and scientific governance.

The second point of view refers to scholarly bioethics, which is more philosophical and operates mainly as a form of theoretical debate. Racine, Martin Rubio, Chandler, Forlini and Lucke (2014) include in scholarly bioethics studies in law, moral philosophy, and political theory. For present purposes, I will refer to scholarly bioethics mainly for philosophical reflection upon human enhancement. In this context, philosophical considerations and ethical deliberations are interested: firstly, in the comprehension of enhancements, secondly in the assessment of enhancement techniques, and thirdly, in the justification for or against current enhancement practices.

This article will focus on how three different scholarly approaches cope with the question of the relationship between human enhancement and public interest. The first one is the speculative approach within posthumanism. The second one is an anthropological approach that operates from a philosophical point of view and refuses empirical confirmation or refutation. This is the case of Coeckelbergh (2013; 2014). Finally, this paper focuses on the philosophical justification for enhancement techniques in the context of military issues.

In contrast with "bioethics in the making", I will argue that scholarly bioethics does not regard enough the question of how present and future techniques of enhancement matter for the public. Consequently, scholarly bioethics does not consider valuable reasons that stem from the public in order to understand and assess so-called enhancement techniques. I will support the idea that methodologies, deliberative strategies, argumentations and findings that arise from moral philosophy and philosophical discourses upon the enhancement debate are valuable. Nevertheless, I will stress the idea that scholarly bioethics and philosophical approaches operate without paying enough attention to the entanglement of moral reasons with risk assessment, regulatory policies and public interest. Those elements, which are key

points for "bioethics in the making", are as we will see little problematized if not ignored by scholarly bioethics. This lack of reflection leads to both philosophical and empirical misconceptions that negatively affect scholarly bioethics. In this article I will highlight some of those problems for scholarly bioethics and philosophical discourses on the enhancement debate. I will focus exclusively on the question of the public interest and how scholarly bioethics and philosophy tackle the meaning and the role of the public within the enhancement debate.

2. Speculative ethics within posthumanism

From the point of view of scholarly bioethics, the enhancement of human capabilities is one of the major topics of this academic discipline. The ethical debate on human enhancement relates to an impressive array of techniques, which stem from biomedical sciences and nanotechnology. The bioethical inquiry on human enhancement draws attention to new scenarios where present and future possibilities of improvement for humanity are intertwined with feelings of wisdom and optimism. Speculative ethics within posthumanism, or pro-enhancement branch, welcomes improvements of human functioning (Bostrom 2005a; 2005b; Savulescu 2009). In this sense, speculative ethics has played an important role in the tasks of designing, imaging and envisioning future scenarios where a new humanity is featured by capacities unknown until now (Bostrom, 2005a; 2005b; Roache, 2008). In the case of mood and cognitive enhancement, for instance, biomedical industry develops pharmaceutical neuroenhancements, that is, so-called "smart drugs" such as Modafinil, Methylphenidate, Propranolol and Oxytocin, among others, which might boost our memory, suppress negative memories or emotional memories, make us more alert, smarter, sharper and faster (Sahakian & Labuzzeta 2013; Enk, 2013; Forlini & Racine, 2009).

Speculative ethics within the philosophical debate upon human enhancement plays the role of justifying the moral reasons why enhancement should be promoted. It draws a future where some promises of enhancement might be accomplished and where human will experience moral, cognitive and physical enhancement. Therefore, proponents of bioethics, such as Bostrom (2005a; 2005b) and Roache (2008), argue that speculation of scientific and technological projects at

a very early stage is necessary in order to conduct scientific and technological efforts to the best ends (see Roache 2008, 323). Recently, Bostrom & Roache (2011) develop a more moderate discourse in some respects about the ethical concerns of cognitive enhancements and the role of the public. On the one hand, they propose an ethical principle in order to assess cognitive enhancements, that is, "the broader the target capacity, the greater the potential positive effects of even a small degree of enhancement" (Bostrom & Roache, 2001, 140). This principle gives rise to the political recommendation of promoting cognitive enhancements and even subsidize them for the poor in order to reach economical, social and cultural benefits. The role of the public is twofold in their view: on the one hand, the public interest is what would be increased and satisfied if the use of safe enhancements were widespread. On the other, Bostrom and Roache consider, in contrast with the principle stated above, that the public interest would be satisfied if "individuals decide for themselves whether and how to enhance" (Bostrom & Roache, 2001, 144).

In spite of those moderate reflections, I identify three problems within the strategies of speculation, which aim to strengthen desirable future scenarios for humanity. The first one is that the speculative bioethical inquiry on human enhancement can be featured by an incomplete empirical turn. Ethicists, on the one hand, concentrate on analyzing ethical values that might be promoted by future developments of science and technology, that is, they show the reasons why the so-called enhancers should improve human autonomy, authenticity, well-being, and so on. But ethicists do not pay enough attention to ongoing issues within neuroenhancements research such as safety and effectiveness. Laboratory studies on pharmaceutical neuroenhancements are still in progress. Some so-called neuroenhancements are still far from being proved as working in the long term and safe for healthy individuals. Racine et al. (2014) argue that speculation is partly built on false assumptions of the safety and effectiveness of enhancers. In their view, the context of discussion about so-called cognitive enhancers "is marked by an absence of clear and convincing evidence about efficacy and prevalence" (Racine et al., 2014, 329). They conclude, on the one hand, that the credibility of bioethics that adopts a speculative and anticipatory approach gets affected by this lack of empirical support and, on the other, that speculation may encourage the public to adopt an uncritical approach (Racine et al., 2014, 326).

Nordmann (2008), Nordmann and Rip (2009) and King, Whitaker & Jones (2011, 240) also support the critique of speculative ethics since it ignores emerging issues within scientific research and focuses on future scenarios of progress for humanity. For instance, Modafinil (or Provigil) is considered to be a drug that works as a cognitive enhancer. Scholars in the academic debate see Modafinil as a moral good (Sahakian & Labuzzeta, 2013). For students, Modafinil is a "study drug", which they use in order to improve their results. The use of Modafinil certainly improves concentration, alertness and mental task-orientation in healthy people in the short term. However, the use of Modafinil entails certain scientific and political controversies that should be shaped not only by the academic discussion, but also by the ethical and public debate. Scientific evidence shows that Modafinil is a cognitive enhancer in the short term, but there is a lack of evidence in the long term. Certain studies suggest that children should not use Modafinil because their brain is still developing (Sahakian & Labuzzeta). In addition, Modafinil could potentially be addictive.

The second problem is that the incomplete empirical turn leads to a misconception of risks and an underestimation of the moral competence of the non-experts (the public in general) in the ethical debate. The false idea that feeds the speculative discourse of some posthumanists is that science works for the discovery of enhancements and ethics has the role of promoting those improvements at the very early stage of technoscientific projects, thinking and justifying for society why those enhancements are moral goods. As Racine et al. (2014) argue, some methods of reasoning are not always convenient for the ethical debate on human enhancement. The main problem of speculation is thus that it disregards if the public is socially and psychological keen to accept so-called enhancement techniques. That is, it is not clear if some of the biomedical enhancement practices that spread over (western) societies are freely accepted or if they are the product of moral, social or psychological coercion. In the case of cognitive enhancement, Forlini and Racine (2009) show that the reasons why students, parents and society justified the use of drugs such as Rytalin or Provigil were the result of a mix of conditions: the threat of being in worse conditions at a competitive context, hopes and wisdom of upgrading results, confidence on biomedical and neuropharmaceutical drugs and so on.

Speculative bioethics is far for being concerned with public issues that are at the core of cognitive enhancements such as coercion, awareness of medical risks and so on. Bostrom and Roache suspect that controversies surrounding "unconventional

means of cognitive enhancement are largely due to the fact that they are currently novel and experimental rather than to any problem inherent in the technologies themselves" (Bostrom & Roache, 2011, 141). But their claim is quite controversial and it is also empirically unsupported (see Forlini & Racine, 2009). Calls that arise from "Bioethics in the making", on the contrary, are deeply concerned with such issues. In this sense, Schicktanz et al. (2012) develop an ethical approach that should be summarized with the expression of "public understanding of ethics." They pay attention, in contrast with speculative ethics, to the methodological and normative relevance of lay-persons in everyday life regarding controversial issues within biomedicine as well as the necessity of public deliberation in this context, as a way to enrich bioethics. Ethical reflections on human enhancement should be aware of moral reasons for or against enhancements that stem from lay-persons or not specialists. The ethical justification for enhancements thus could enrich ethical framing and deliberations if it includes moral reasons from the public instead of thinking for the public without taking it into account. In sum, speculative ethics disregards bioethical claims that arise from the "public understanding of ethics." This relates to "foreshortening of the conditional", the main critique received by speculative ethics (see Nordmann, 2007; Nordmann & Rip, 2009; King et al., 2011). As we will see, the "foreshortening of the conditional" leads to the third problem within speculative ethics, that is, speculation promotes uncritically technological determinism (Kelly 2006; Racine et al., 2014).

Nordmann develops his critique to speculative ethics arguing that ethical claims that aim to supporting human enhancement are affected by an "if-and-then syndrome" (Nordmann, 2007, 32). That is, speculative ethics presupposes in the first part of the sentence (the 'if') that science and technology would be able to discover drugs and biomedical techniques that would improve human functioning. But what looks like merely possible and hypothetical in the first half of the sentence appears, in the second half (the 'then') as a matter of fact, that is as something inevitable that serves to support and justify enhancements from an ethical point of view (Nordmann & Rip, 2009, 273). Many consequences steem from this critique addressed to speculative ethics and posthumanism. I will summarize only the most salient for present purposes. Firstly, the "if and then" syndrome downplays the ethical reflection upon ongoing biomedical developments that are pressing issues for ethics and the public.

Secondly, "the foreshortening of the conditional" that underlies speculative ethics ignores risks and uncertainties that surround the development of new biomedical and technological techniques.

Thirdly, this lack of reflection upon risks and uncertainties becomes an epistemological problem, that is, the ill informed or not enough informed presumption about the development of future scenarios for biomedicine, patients and citizens options affects the ethical justification for enhancements as well as the credibility of scholarly bioethics (King et al., 2011, 140).

Finally, the "if and then syndrome" leads to technological determinism in the realm of the enhancement debate, that is, the philosophical belief that technoscience will find solution to technoscientific problems such as current risks and uncertainties within biomedical techniques (Kelly, 2006). The threat that arise from this claim, in words of Kelly, is that "bioethics has become a means of fitting "the human" to the ends of biotechnology rather than a discourse or a mechanism through which appropriate human needs and ends, appropriate to governing the construction of biotechnology, are sought" (Kelly, 2006, 71).

Following the work of philosopher of technology Langdom Winner, Kelly argues that the relationship among ethics, technology and politics have received scant attention. As a result, bioethics would promote "ethical somnambulism". A practical way to deal with this somnambulism should be to promote reflexivity in order to tackle with the uncritical attention to emergent ethics of technological and biotechnological systems (Kelly, 2006, 77). The question of the entanglement among biomedical techniques in the context of human enhancement, the governance of biomedical development, the political regulation and public interest become central issues for an appropriate ethical inquiry. Thus the governance of technoscience, politics and ethics are all part of the same issue.

The future envisioned by speculative ethics is featured by individual, social and cultural advantages for the enhanced humans. What poses a problem regarding posthumanism within speculative ethics, in my view, is that individual or cultural attitudes of disagreements, resistance or opposition to the so-called enhancements are interpreted as a kind of non-rational refusal of both technoscientific and moral progress. As a consequence, firstly, there is not enough room for a public debate on en-

hancements within posthumanism. Secondly, speculative ethics reproduces in some respect the arguments used at the beginning of the twenty-first century regarding the regulation of OG crops by the supporters of such biotechnological developments (Jasanoff, 2000). The promotion of enhancements and the use of speculative ethics are justified –as the GM crops were justified– by calls to rationality and scientific progress; whereas the refusal of enhancements –as the GM crops– were conceived as the opposition to knowledge and progress. However, this dualistic opposition between, on the one hand, rationalism, progress and science against irrationality, ignorance and conservatism, on the other hand, is under pressure. Part of the solution, regarding the issue of public interest, consists of regarding theoretical justifications, as the present one, and practical experiences that take into account the public interest within the governance of biomedical techniques. Unfortunately, the issue of public participation and deliberative scenarios for enriching the philosophical and ethical frame of human enhancement go beyond the extent of this article (see García Díaz, 2014). However, another part of the solution arises from a common issue that appears in all different works mentioned in this section (see Kelly, 2006; Nordmann, 2007; Nordmann & Rip, 2009; King et al., 2011; Schicktanz et al., 2012; Racine et al., 2014), that is, the necessity of enriching bioethical inquiry with more reflexivity. In effect, bioethics should be more open to empirical studies about the governance of biomedical techniques and include the public opinion and moral reasons that stem from the public as a source for framing ethical issues regarding human enhancement through biomedical techniques.

3. Existential reflections on the vulnerability of human nature

Posthumanism and speculative ethics have recently received attention from the anthropological philosophy of Coeckelberg (2011; 2013). This philosopher develops an existential, not existentialist, approach in order to understand how new technologies, e.g. enhancement techniques, transform human vulnerabilities (Coelkerbergh, 2013, 33). He regards humans as being always "at risk", which means that we are intrinsically vulnerable. Natural threats, environmental and living conditions, cognitive tasks or emotional answers are experienced as risks due to our vulnerable nature (Coelckerbergh, 2013, 2). Humanity thus is conceived in terms of how different types of risks are faced. In this sense, Coeckelberg argues that the history of

technological innovations can be featured as the history of human fighting with our vulnerabilities. We, humans, struggle against our vulnerabilities, that is, the human refusal against natural and constructed risks is essentially constitutive of human nature. At the core of his anthropological conception lays the idea that technology co-produce humanity. Furthermore, he is inspired by philosophers such as Heidegger, Idhe or Bruno Latour.

Coeckelbergh develops thus a normative anthropological approach in order to deal with, first, how to understand humans, secondly, how to give sense to the relationship between humans and technology, and third, how to think individually and socially about risks and new vulnerabilities for humans that arise from new technologies and biomedical enhancement techniques. What is valuable in his philosophy is how Coeckelbergh is interested in avoiding two philosophical understandings of humanity that are mainstream in the ethical debate of human enhancement, that is, posthumanism and bioconservatism. The philosophical approach of Coeckelbergh contributes to enrich theoretical reflections upon human nature and to illuminate missing aspects of philosophical reflections on humanity within "bioethical in the making". In this sense, Coeckelbergh refuses the idea that evolutionary biology can give an answer to the question of human nature. Coeckelbergh's ideas do not fit with the naturalistic bias that, in his view, underlies posthumanism and the rational humanism that shapes transhumanism –the radical philosophy, which seeks to transform human nature through enhancement techniques and aims invulnerability–. Science cannot exclusively give an answer of what defines humanity. The individual constitution of humanity should be featured, in his view, as existential and the social constitution of humanity as relational (see Coeckelbergh 2011, 7; 2013, 33-35). The existential approach he offers us focuses more on *how we live* than on of *what we are*. He wants "to account the intuition that there is something that is common to what is to be human" (Coeckelbergh, 2013, 32). He also seeks to leave room for human freedom, that is, he refuses to define humanity exclusively in terms of psychological, social and cultural influences. In spite of the social and cultural processes that shape the answer to *who* and *what we are*, Coeckelbergh draws attention to the fact that we experience the world from a first-person perspective. Human nature, in his view and in accordance with anthropology and philosophy of technology of Bruno Latour (see Latour, 1994), is entangled with technology. In sum, nature and culture, humanity and technology are not radically separated.

Phenomenology and pragmatism are the philosophical background that underlies Coelckerbergh's anthropological approach.

The central issue for this philosopher thus is that dealing with risks, due to our vulnerable constitution, is an open-ended task for humans. In his view, posthumanists believe wrongly that new technological or biomedical enhancements are ways to cope with risks and means to transcend human vulnerability. Coeckelbergh's existential approach fights the idea that human vulnerability is only a problem for subjects that could be solved by means of objects such as technologies, drugs or biomedical techniques. Coeckelbergh thus refuses the "end-mean" style of reasoning in ethics and he argues that new technical and biomedical innovations will create the emergence of new risks for humans. Although this philosopher does not define himself as an opponent of the enhancement of human capabilities through biomedical techniques or drugs, he fiercely criticizes the ethical background of posthumanism argued mainly by Bostrom (2005a; 2005b), who in his "Transhumanist Declaration" stated: "Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of aging, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet Earth" (Bostrom, 2005b, 21).

According to Coeckelbergh, Bostrom seeks human invulnerability. However, this call will necessarily fail because human vulnerabilities can only be transformed but never eliminated or diminished (Coeckelbergh, 2011, 2; 2013, 95). As he says: "If we consider the history of medical technology, we observe that for every disease new technology helps to prevent or cure, there is at least one new disease that escapes our techno-scientific control. We can win one battle, but we can never win the war" (Coeckelbergh, 2011, 3).

Again, Coeckelbergh claims should be understood from his main objective which consists of dismantling the idea that one day, a future and less vulnerable (post)humanity will exist. His philosophy, however, is also against conservative ideas found in detractors of human enhancement. For Coeckelbergh, scholars who refuse enhancement techniques in the name of human authenticity, and in the name of respect to what is given by nature or God to humans are wrong. Their claims arise from an essentialist point of view. Bio and infoconservatives are anchored in a wrong understanding of humans. Bioconservatives –those who refuses human en-

hancement regardless of which technology it is involved, as Kass and Fukuyama –as well as infoconservatives –those who do not want that infotechnologies change human being, as Habermas –do fail in accounting the relationship between humans and technology, as explained above. They cannot explain the relational and changing condition of humans and how humanity has evolved facing threats and risks through technology. Humanity cannot be exclusively described regarding a fixed human nature. Human beings evolve with technologies and transform thanks to new technologies themselves, their relation with nature, culture and other beings.

Coeckelbergh's illuminating work refuses to tackle "risk" in objective terms as something taken for granted and as something opposed to subjective appraisal. He tries to go beyond the modern gap between objects and subjects. "Risk" and "vulnerability" are concepts that say something about the relationship between subjects and objects (Coeckelbergh, 2013, 8). The best way to conceptualize "risk" and "vulnerability" demands in his view an existential and phenomenological approach. Therefore, he criticizes both scientific and social paradigms of "risk assessment" since, on the one hand, scientific understanding and evaluation of risks conceive risks as "matter of facts", that is as something exclusively objective. On the other, for Coeckelbergh social paradigms of risk assessment stick to the idea that risks are mainly social constructions or "matter of concern". In both cases, risks are disconnected from human vulnerability and risks are considered as something out of the subject.

Unfortunately, Coeckelbergh is exclusively concerned with the theoretical question of what human should become in a posthuman future. He disregards empirical cases of so-called enhancement techniques and focuses mainly in the *a priori* claim that bioethical calls for the justification of enhancement are wrong constructed. This lack of empirical data undermines credibility to his ethical and political proposal for thinking the ethics of human enhancement. Coeckelbergh normative anthropology of vulnerability intertwines political and ethical questions about enhancement issues. He poses the question of "which vulnerability transformations we want" (Coeckelbergh 2013, 87). This call relates directly to the idea that we should discuss the common world we want to live in, an idea that is also found in the object-oriented philosophy of Bruno Latour (Latour, 1999). Coeckelbergh thus tackles ethical issues on human enhancement focusing on human vulnerability and on what is supposed to be a public interest, that is, the question of for whom something is a risk or which human vulnerability we want to diminish and supersede, and for what

reasons something is a risk. He gives some clues about the ethics of human enhancement and he relates his concerns with the approach of capabilities of Martha Nussbaum (see Coeckelbergh, 2013, 168-70) as well as with the idea of justice as fairness of Rawls (see Coeckelbergh, 2013, 160-4). However, regarding socio-technical controversies of human enhancement, Coeckelbergh it is not interested in ethical, political, social and regulative issues that deal with risks nor with aspects which are traceable, quantifiable and tractable in objective terms. He also does not pronounce himself in favor of or against specific enhancement techniques.

What is more, the question of public interest that should arise from Coeckelbergh's stress on "which vulnerability transformations we want" is paradoxically missing. He doesn't pay attention to how to deal with public concerns on specific enhancements. He doesn't ask questions such as: how do we want to improve our cognitive functioning? Or do we want to fight fatigue or bad mood with pills? Those (controversial) issues should not be disregarded if Coeckelbergh seriously believes that risks and vulnerabilities should be understood as something constitutive to human technological condition. If risks and vulnerabilities cannot be considered from an external point of view to the subject as facts that can be scientifically identified, quantified and managed but as concepts for someone and for something, we should pose the question why there is not room in his inquiry for the issue of the role of public discussion, public debate or public framing of risks.

Apart from this, Coelckebergh's work is valuable. His findings on the relation of the ethics of human enhancement and the philosophy of technology are very useful in order to think the ethical dimension of enhancing human capabilities.

4. The ethical justification of ongoing applications of enhancement techniques in the military arena

The third philosophical inquiry that this article will deal with focuses on the Greenwall Report "Enhanced Warfighters: Risk, Ethics, and Law" by Lin, Mehlman and Abney (2013), which develops an analysis in-depth on ethical, regulatory issues and risks. Most of the findings within this Report focus on the enhancement of human capabilities required for the very specific arena of the US Army. The word "enhancement" employed by Lin et al. is used as a synonym of "upgrading". The enhancement of

warfighters means to upgrade the basic human condition in order to become stronger, more aware, more durable or adaptive. The aim is to gain special competitive advantages. In this context, the ethics of enhancement does not relate to the promotion of those specific improvements out of military professional tasks and duties.

The Greenwall Report details how enhancements have been used over the military history and seeks to justify why some drugs (although sometimes illegal in the civil sphere without a physician prescription such as amphetamines) count as enhancements. The response of Lin et al. is that, if drugs promote alertness, concentration and more accurate responses to decision-making process during operations, they are good means for military purposes. The use of biomedical enhancements and its regulation, for instance the prohibition of amphetamines after 2002 (when four Canadian soldiers were killed and eight wounded in a friendly fire incident in Afghanistan (Lin et al., 2013, 5) and the implementation of Modafinil, also called "go pills", as smart drugs that prevents soldiers from sleep deprivation and that improves pilot abilities, do not comfortably fit current model of civil and military medical care but are still justified in terms of military goals.

Most of the ideas of Lin, Mehlman and Abney are concerned with the legitimation and justification of current and futures practices in the domain of the improvement of soldiers' capacities. Warfighters are considered as individuals that accept the loss of autonomy and freedom in order to face challenges that stem from military requirements (see Lin et al., 2013, 43-45). Philosophical questions concerning individual liberties and personal autonomy are thus missing. As we can see, firstly, the Greenwall Report points out key questions concerning present and future enhancements such as the use of amphetamines or Modafinil. Secondly, Lin et al. offer a contextual approach of enhancement in the military arena that can be featured as a professional-oriented one. The ethics of enhanced warfighters calls for a justification of enhancements as long as they exclusively contribute to maximize military targets, aims and values. Competitive advantages over enemies have the highest priority. From this point of view, biomedical considerations as well as risks comprehension are intersected and limited with military purposes. Ethics of enhanced warfighters, thirdly, gets enriched with virtuous ethics (see Lin et al., 2013, 78-80).

The question of public interest is disregarded in this professional-oriented approach to enhancement. The public is mentioned in terms of what could create controversy

or could be against military practices. Public concerns on enhancement are evaluated as threats for military purposes. The Lin, Mehlman and Abney's Report sticks to a public knowledge deficit-model that explains that, due to ignorance, public opinion should be educated in order to assess professional uses of enhancement in the military arena. In their words, state that: "public awareness also could stimulate an open discussion about the ethics and legality of military enhancement that could reduce public opposition" (Lin et al., 2013, 75).

On balance, Lin, Mehlman and Abney do not take into account philosophical questions concerning individual liberties and personal autonomy or the question of public interest. However, what is enriching for the philosophical debate upon human enhancement is how the philosophical background of their work, which is developed by Abney elsewhere (see Abney, 2013), leads us to rethinking the role of ethical expertise. According to him, there are two different types of sciences: the natural, defined by the absence of human agency within scientific explanation, and the social or teleological sciences, which includes human agency as part of the scientific explanation sought. This sort of demarcation criterion serves to justify why bioethics is not a natural science and, therefore, why philosophical insights are needed in order to address correctly bioethical issues, such as the enhancement of human functioning. Bioethics is concerned with the interaction of scientific research and human agency and that there is nothing natural about this interplay at all; "so the "natural-artificial" distinction is irrelevant to any and all vexed issues in bioethics" (Abney, 2013, 33). Thus, according to Lin, Mehlman and Abney, we should blur the frontier between the natural and unnatural and external and internal distinction as a way to carry ethical expertise out. What we also learn is that bioethical expertise consists of a dialogue between experts from the scientific realm and experts of teleological sciences such as social sciences and philosophy.

Nevertheless, the nature of ethical expertise is a quiet and vivid debate that relates directly with the issues addressed in this article. The question of how philosophers and ethicists discuss with scientists, lawyers, social scientists and the public in order to frame, clarify the meaning of bioethical issues, and assess them is a key issue that underlies the distinction of scholarly bioethics and "bioethics in the making." Following Weinstein (1994, 63) there is at least one sense of bioethical expertise that is uncontroversial, which is the expertise of descriptive bioethics. The study of bioethical beliefs is feasible and someone can make justified claims in this domain. The problem with bioethical expertise, as a kind of ethical expertise, arises from the domain that pertains

to the making of moral judgments, that is, normative ethics. In this sense, Weinstein argues that such an ethical expertise does exist. In his words: "If epistemic expertise is understood to be a capacity to provide strong justification for claims in a domain, I submit that it is legitimate to speak of expertise even if there is disagreement among normative ethicists" (Weinstein, 1994, 67). Scholarly bioethics provides strong justification for normative claims when those claims are constructed by appeals to ethical rules, principles and theories. Then it exists a bioethical expertise within the Greenwall Report "Enhanced Warfighters: Risk, Ethics, and Law." And this epistemic expertise can be contrasted, criticized and enriched theoretically by philosophical discussion. But the issues at stake in the Greenwall Report are pressing and their importance goes beyond the theoretical debate. The issues discussed above such as the exclusion of public interest, the idea that warfighters can legitimately lose their autonomy and the use of different philosophical and ethical frames in order to think and justify current practices transcend the theoretical debate. This is an issue of "bioethics in the making" that demands not only philosophical debate, but also social, political and public deliberation.

In this sense, I agree with Martha Nussbaum when she refuses the idea that philosophers and ethicists have expert judgments in normative issues that deserve more credibility than lay-persons in the public debate. According to her, the goal of professional philosophy should be philosophical framing, clarifications and reflections of issues at stake (see Nusbaumm, 2002, 510-12). Philosophers have the duty to serve the public good by means of enriching the public culture with philosophical findings. Other illuminating reflections regarding the nature of ethical expertise and its relation to non-ethical experts are found in Steimkanmp et al. (2008). Those scholars argue that ethicists are not mere problem-solvers who can address ethical issues exclusively through the application of methods of ethical argumentation. Due to the complexity of problems that stem from clinical and practical bioethics, ethicists should clarify and frame moral problems by collaborating and cooperating with non-ethicists, that is, scientists, lay-persons and other social actors. The complementary styles of argumentation are then sought as a means to improve the deliberation about clinical ethical issues (Steimkanmp et al., 2008, 186). And finally, from the "ethics of public understanding of ethics" Schicktanz, et al., 2012) we learn that in order to improve the social, political, scientific and ethical governance of science, it is suitable to include the voices of those who are concerned by ongoing scientific research. I shall not develop here the relationship between the ethics of "public understanding of ethics"

and deliberative ethics and deliberative politics arguments such as found in Gutmann and Thompsom and political philosopher I. Marion Young, respectively (see García Díaz, 2104). In any case, I believe that the enhancement issues could be enriched by adding more reflexivity and by the inclusion of how the public frames ethical issues as a way to address the philosophical debate upon human enhancement.

5. Conclusions

In this article I have dealt with a twofold bioethical point of view, scholarly bioethics and "bioethics in the making". The first is theoretical and includes valuable insights and reflections upon the ethical issues that relate to the biomedical enhancement techniques. I have focused on the ethical claim that arises from "bioethics in the making" that calls for the inclusion of the moral reasons that are matter of concern for the public in order to enrich scholarly bioethics with more reflexivity (see also Kelly, 2006; Nordmann, 2007; Nordmann & Rip, 2009; King et al., 2011; Schicktanz et al., 2012; Racine et al. & Lucke 2014). In so doing, I have outlined three philosophical approaches: speculative ethics within posthumanism, the philosophical anthropology of "being at-risk" of Coeckelbergh, and the ethics of enhanced warfighters of Lin, Mehlman and Abney. Firstly, I have tackled three philosophical problems present in speculative ethics: the incomplete empirical turn, the misconception of risks and underestimation of the moral competence of the non-experts (the public) in the ethical debate, and the risk of technological determinism and moral somnambulism. I have sketched the philosophical findings of the existential anthropological approach of Coeckelbergh in order to deal with the concept of humanity and with issues such as authenticity and human vulnerability. I have criticized the exclusion of empirical data for addressing ethical issues on human enhancement. I have also highlighted how the question of public interest is paradoxically missing in his philosophy whereas the question of "which vulnerability transformations we want" appears crucial to him. Finally, I have interplayed the ethics of enhanced warfighters with the issue of the nature of ethics expertise. I have argued that normative ethical expertise exists and that the work of Lin, Mehlman and Abney is an example of it. But normative ethical expertise of such a kind remains in a theoretical debate. The pressing issues that the Greenwall Report focuses on deserves more reflexivity, which includes collective learning experiences among different kinds of actors as well as the public framing of issues.

The question of the public interest within scholarly bioethics has been outlined as follows. Speculative ethics is a theoretical reflection that argues the best for individual, societies and progress, without considering enough moral concerns that stem from the public. The ethics of human enhancement of Coeckelbergh seems to call for a public deliberation about how we want to live, and which risks we find tolerable. Finally, the Greenwall Report seeks to use ethical expertise for justifying what is good, valuable and morally justified in the specific arena of the Army. The ethical expertise within the work Lin, Mehlman and Abney is supposed to be an authoritative discourse that excludes the public opinion as part of the issues at stake.

Finally, this article leaves several philosophical questions open. The first one relates to the "is-ought" problem. The inclusion of empirical data about public concerns, values and moral reasons regarding biomedical enhancement techniques in order to enrich ethical reflection gets directly affected by the need of thinking in-depth the relationship between ethical argumentation and empirical data. Although I have not tackled directly this issue, in previous sections I have dealt with philosophical issues and I have highlighted the importance of philosophical insights. Then, I do not believe that a complete empirical turn in bioethics is necessary. The second one relates to the relationship between scholarly bioethical expertise and the construction of a more enriching "bioethical in the making expertise." In this context, more collaborative work should be done. What I have modestly argued in this article, that is, that more reflexivity for bioethics could be reached by including the public more seriously, calls thus for the reflection on suitable means to fit this task theoretically and practically.

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