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Frankenstein and the law: some reflexions on transhumanism.

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Abstract

Even if transhumanism theory, defined as the converged use of nanotechnologies, biotechnologies, information technology and cognitive sciences in order to “enhance” humanity, has already been the topic of numerous discussions from a philosophical or societal approach, few legal analyses have tried to draw a map of its application and boundaries. This study aims to demonstrate that the transhumanism provokes multiple legal issues at the international and European level. The study uses the famous work of Mary Shelley – Frankenstein - as an introduction and a parallelism to the modern transhumanist ambitions. In the first part, the author considers the legal implications of the transhumanism as an idea: the possible conflict with the principle of dignity, with the principle of equality or with the regulation on freedom of speech. On the second part, the author examines the practical consequences of transhumanism (about intellect, ageing, even death itself) and their legal framework. The third part, on the opposite, investigates how the transhumanism approach could have some positive effects on legal theory, mainly how transhumanism creates the suitable background for a reflexion towards a definition of some fundamental legal concepts, such as humanity.

1. Introduction

The term “Transhumanism” first appeared in 1957, in an essay from the evolutionary biologist and eugenicist Julian Huxley¹. Transhumanism could be described in brief as the distinctive philosophy which considers that human evolution should no longer be left to Mother Nature alone, or in other words, that the human condition can be artificially improved. It does not constitute a science, since this philosophy defines itself by its outcome, and all means are welcome in transhumanism, from biological modifications and neuroscience applications to computer science. Even if its tenets have largely been inspired by science fiction literature, it is commonly believed that this issue has allowed the domain of fantasy to enter the field of probabilities. Nowadays transhumanism is supported by dedicated foundations such as “H+”². H+, formerly named the World Transhumanist Association until 2008, was founded in 1998 by Nick Bostrom and David Pearce, with the mission to promote and defend the values of transhumanism in the society.

It might at first sight seem pointless to discuss transhumanism and the law. The law normally regulates present issues and most of the time past issues, as a system of governance of a given society. This however would mask the fact that transhumanism is already part of our present society, first of all as an idea, which may – or may not – be expressed, published, politicized and also of course as a series of experiences.

¹ Julian Huxley, *New Bottles for New Wine*. London: Chatto & Windus, 1957, pp. 13-17. The author explained that: “The human species can, if it wishes, transcend itself — not just sporadically, an individual here in one way, an individual there in another way, but in its entirety, as humanity. We need a name for this new belief. Perhaps transhumanism will serve: man remaining man, but trans-cending himself, by realizing new possibilities of and for his human nature.”

² “HumanityPlus”. Their website: <http://humanityplus.org>

This study aims to analyze this relationship between transhumanism and the law. However, more importantly, it will not extend as far as a theoretical analysis of the moral (or otherwise) justification of transhumanism. This highly sensitive debate has certainly some merit and has already begun in a global environment, starting out from the principle that a distinction should be drawn between the law and morality.

The Frankenstein³ myth seems a good starting point for a discussion of this topic, since this famous story describes the issues involved here with the most accuracy. In this time of countless remakes and adaptations, it should be worthy to remind that Mary Shelley wrote in 1818 a novel named “Frankenstein or The Modern Prometheus”, which describes the dramatic and successful efforts of a scientist to give life to a creature. It is something of a cliché to say that the real monster was not the creature itself but its creator. Transhumanism highlights a different aspect of the question “what status should we give to the creature?”. What does it mean to be human, or in other words, what are the boundaries of the human condition? Characteristically, Shelley wrote in the novel: “How dangerous is the acquirement of knowledge and how much happier that man is who believes his native town to be the world, than he who aspires to be greater than his nature will allow”. However, a fundamental distinction needs to be established between the classical discussion of Frankenstein’s work and transhumanism. Frankenstein – and the title itself highlights the fact – belongs to the Prometheus myth. Not through courage, but by means of science, something divine is stolen: fire here, an ability to create life there. Transhumanism is then affiliated to Prometheus and Frankenstein with the exception of the references to God. In Prometheus, the god’s presence is explicit and Prometheus has to brave Zeus himself. In Frankenstein, God is present in each moment of the scientist’s thoughts, in his refusal to baptize it or when he calls it the Devil’s work. However, in transhumanism, religious questions are apparently left aside or could it be that the faith has just moved to other spheres? It is not just about the already old-established philosophy of scientism, which aimed to describe the world in all its aspects in purely mathematical terms, nor about one human being playing God through madness or genius: transhumanism refers to the systematic use of science to replace nature as a referent for the human condition⁴. This could be related to the view that transhumanism is a kind of “secular eschatology”⁵. It has even been maintained that, because it questions the meaning of life and death and man’s role within the Universe and uses scientific answers to traditional religious questions, transhumanism could even claim the legal status of a religion⁶. This religious dimension of transhumanism fascinates the scholars by its paradoxes: a religion without god, a secularist faith⁷. Indeed, transhumanism aims to enhance the human body, but that implies even to give extraordinary abilities to the individual and also to free humanity from the burden of ageing and even natural death. As a faith, then, transhumanism belongs in definitive to this filiation from Prometheus and through Frankenstein. However, given that we have known since the time of Aristotle that humanity as a concept is not separable from the concept of society, transhumanism, therefore, has to be interpreted first of all as a societal current. We will analyze first how the law imposes limits on the concrete realization of the transhumanist utopia, but also, on the other hand, how this movement will force the jurist to reconsider the notion of humanity.

³ Mary Shelley, *Frankenstein; or, The Modern Prometheus*, London 1818.

⁴ Most of the time, the titles of their works are eloquent in themselves. For instance, Lee Silver’s books are entitled “Challenging nature” or “Remaking Eden”.

⁵ Arizona State University, <http://transhumanism.asu.edu/themes/eschatology.php>

⁶ Steven Goldberg, *Does the Wall Still Stand? The Implications of Transhumanism for the Separation of Church and State*, Georgetown University Law Center, available from http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1109&context=fwps_papers

⁷ Hava Tirosh-Samuelson, *Transhumanism as a secularist faith*, *Zygon*, Vol. 47, Issue 4, December 2012, p.710–734.

2. The legal impediments to the realization of transhuman techniques

Transhumanism aims to change humanity, because in its view, humanity suffers from a number of flaws which can be “corrected”. To transform humanity in this way, four main sciences are called upon to contribute, not separately and independently but working together⁸. This is known as the NBIC convergence phenomenon⁹: nanotechnologies, biotechnologies, information technology and cognitive science. Therefore, rather than adopting the traditional analysis of the various transhuman sciences by category, it seems more interesting to review the concept and its legal issues on the basis of its two main characteristics: the philosophy of human transcendence and the aims of body enhancement.

2.1. The danger of transhumanism as an idea

2.1.1. Strengths and flaws of the principle of dignity

The first and most obvious legal and philosophical¹⁰ principle used to counter the proposals of transhumanism¹¹ consists in the principle of human dignity. It has been said that dignity is both the most invoked concept and the less defined one in bioethics¹². Nevertheless, transhumanist enthusiasts such as Nick Bostrom have seen the obstacle and propose a new concept of posthuman dignity, whereas enhancements do not put in danger the principle of dignity but at the contrary strengthen it¹³. Others disagree with this proposal, adopting the view that this concept of posthuman dignity is not compatible with the legal framework applicable to the concept of dignity¹⁴.

It is by consequence necessary to analyze exactly the field of application and boundaries of this principle. The concept could, depending on the author, refer to the concept of autonomy or the sanctity of life, or again a set of human goods¹⁵. The notion of autonomy here should not be reduced to the mere concept of choice, as the circumstances of the choice may violate the autonomy of the person¹⁶. David Feldman adopts another approach and distinguishes between three broad senses of the concept of dignity: the dignity of the species, the dignity of groups and the dignity of individuals¹⁷.

The principle has been lately embodied in EU law in the Charter of Fundamental Rights of the European Union. The principle of human dignity occupies a very symbolic and characteristic position in the Charter. Indeed the first article of the Charter, which, as we know, has had full legal effect since the Treaty of Lisbon¹⁸, states slightly enigmatically that “Human dignity is inviolable. It must be respected and protected”. The principle of dignity is placed even before the right to life (Article 2) whereas Article 3, entitled “Right to integrity of the person” refers to the right to integrity¹⁹ and to the prohibition of eugenic

⁸ Bert Gordijn, Ruth F. Chadwick (ed.), *Medical Enhancement and Posthumanity*, Springer, 2008. The concept of NBIC convergence is described however as “still quite nebulous” (p.228).

⁹ Gregor Wolbring, *Why NBIC? Why human performance enhancement?* *Innovation: The European Journal of Social Science Research*, Vol. 21, Issue 1, 2008, p.25-40.

¹⁰ For Kant, the principle applies to all reasonable human beings, as the human condition must always be considered as an end in itself and not just a means.

¹¹ C.G. Weeramantry, *Justice without Frontiers: Furthering Human Rights*, Kluwer Law International, The Hague, 89-99.

¹² Leslie Meltzer Henry, *Deciphering Dignity*, *The American Journal of Bioethics*, Vol. 10, Issue 7, 2010, p.59-61.

¹³ Nick Bostrom, *In defense of the posthuman dignity*, *Bioethics*, Vol. 19, Issue 3, June 2005, p.202-214.

¹⁴ Fabrice Jotterand, *Human dignity and transhumanism*, *The American Journal of Bioethics*, Vol. 10, Issue 7, 2010.

¹⁵ Matthew C. Jordan, *Bioethics and “Human Dignity”*, *J Med Philos* (2010) 35 (2): 180-196.

¹⁶ Denise G. Reaume, *Dignity, Choice, and Circumstances* in Christopher McCrudden (ed.), *Understanding Human Dignity*, Oxford University Press (British Academy Series), 2013, part IV, 33.

¹⁷ David Feldman, *Human Dignity as a Legal Value*, *Public Law* (1999), pp. 682-702.

¹⁸ On the application of EU law by member states, at least. The charter will not apply to fields outside the competences of the EU.

¹⁹ “1. Everyone has the right to respect for his or her physical and mental integrity. 2. In the fields of medicine and biology, the following must be respected in particular: (a) the free and informed consent of the person concerned,

practices and cloning. While unclear in its definition, this principle is ranked above other human rights in hierarchical terms, since it is commonly admitted that exceptions and restrictions which are deemed to be legitimate on a specific human right will not apply if they violate the principle of dignity. In other words, the principle is absolute. It has been applied for instance by the European Court of Justice to legitimize the banning of paintball guns in Germany²⁰, based on the argument that shooting other human beings for fun, even with fake guns, was not really a good idea in the post-WWII era in Germany.

The issue concerning transhumanism is to determine how the principle of human dignity, which has hitherto been defined in terms of protecting an individual against oppressive conduct, could be extended to prohibiting an individual from consciously manipulating his own body in a way which violates human dignity. We can see that there is a substantial shift in scope between the dignity of the person and the dignity of his body. In other words, is the dignity of the body, and by extension of the human biological identity, embodied in the principle of human dignity?

An answer can be found in the decision of the European Court in the case of *Brüstle v Greenpeace eV*²¹. The question here was that of determining whether EU law permitted the patenting of a process allowing for the production, from stem cells extracted from human embryos, of an almost unlimited quantity of isolated and purified precursor cells having neural or glial properties. The challenge was therefore to define what the concept of a “human embryo” means. The European Court used the principle of dignity as a guideline for its decision and concluded on a very broad definition of the human embryo. Many pro-life organizations have declared this decision a victory and a first step towards a legal recognition of the embryo as a person²². However, a close reading will reveal that the court’s position is exactly the opposite. As explained by the Advocate-General in his opinion, “Human dignity is a principle which must be applied not only to an existing human person, to a child who has been born, but also to the human body from the first stage in its development, i.e. from fertilization.”²³. That means that from a legal point of view, the embryo is not a person but is still a part of a human body. Moreover, and this is extremely important in terms of the discussion regarding transhumanism, the judges have extended the application of the principle of dignity from the person to their body.

It can also be concluded that the general feeling that the principle of human dignity constitutes a primary obstacle to the realizations of transhumanism has been recently confirmed in the case law established by *Brüstle v Greenpeace eV*. However, this “sacralization of the body” also attracts some criticism, based on the argument that the principle of dignity is being transformed from a philosophical idea into a legal concept, even though nobody knows exactly what dignity means. For instance, some scholars advocate the idea of replacing the principle of dignity by the concept of respect for autonomy²⁴, which is less invasive of individual freedoms. In point of fact, the principle of autonomy makes its appearance in the Universal Declaration on Bioethics and Human Rights²⁵, close to the principle of dignity, and is described as “the autonomy of persons to make decisions, while taking responsibility for those decisions and respecting the autonomy of others”. This right could potentially counterbalance the principle of dignity in the issue of the legality of transhuman enhancements.

according to the procedures laid down by law, (b) the prohibition of eugenic practices, in particular those aiming at the selection of persons, (c) the prohibition on making the human body and its parts as such a source of financial gain, (d) the prohibition of the reproductive cloning of human beings”

²⁰ CJEU, *Omega Spielhallen- und Automatenaufstellungs-GmbH* (Case C-36/02).

²¹ CJEU Grand Chamber in *Brüstle v Greenpeace eV* (C-34/10), 2011.

²² For instance, the website “oneofus” carries the banner headline: “The human embryo is “One of Us”: help us to protect and respect its dignity and integrity” as a clear reference to the decision.

²³ AG Opinion of 10 March 2011, Case C-34/10 *Oliver Brüstle v Greenpeace eV*, Advocate-General Bot, para 96.

²⁴ Ruth Macklin (en), Dignity is a useless concept [archive], *British Medical Journal*, 2003; 327: 1419-1420.

²⁵ UNESCO, Universal Declaration on Bioethics and Human Rights, 2005, in Article 5.

Others scholars have aggressively questioned the very existence of the principle of dignity as a legal framework, which is so uncertain that it can justify one thing and its opposite²⁶. In conclusion, the principle of dignity constitutes a broad principle and opposing it to the broad idea of transhumanism would result to dead end discussions about the necessity of definition of the principle, or suspicion about its “creepily Judeo-Christian” origin²⁷. An empirical approach would rather be preferred, a case-to-case analysis which would compare the benefits of an enhancement to the potential danger to the concept of human person in order to decide of the application of a deontological “principle of dignity” to solve bioethical problems²⁸ posed by the transhumanism. In this idea, for each new enhancement technology, it would be necessary to evaluate the impacts of its exercise on the rights of members of the community²⁹.

2.1.2. The principle of equality, the first casualty of the theory of transhumanism

Transhumanism is a political philosophy in the sense that it claims to apply to the whole of society. Nevertheless, as it obviously cannot apply authoritatively, it seeks to create, even temporarily, a disparity between “enhanced persons” and the rest. Let us assume that the science is ready and that the technology of “enhancement” is available and on the market. The implication would be that the traditional and fundamental right of equality of opportunity is violated, according to some philosophers such as Francis Fukuyama³⁰. At the opposite, others take the view that the principle of equality is a false obstacle, since enhanced and non enhanced beings would both count as a person, with the same rights and duties³¹.

In other words, we need to analyze furthermore the notion of equality in order to define its application to the idea of transhumanism. Equality of opportunity must first of all be understood as a synonym of non-discrimination: the banning of policy decisions based arbitrarily on sex, age, race, social origin or condition, a concept which can be found in numerous international and national legislations, for example at EU level, with the Racial Equality Directive³². The concept of race has however hitherto long been repudiated at a biological level. In legal terminology, therefore, the concept of racial discrimination is defined subjectively as the will to discriminate against somebody on the basis of their physical distinctions. Equality also plays a fundamental role, whether in public civil law, as the principle of citizens’ equality, or also in common law for example, in the form of equity. However, transhumanism does not aim to delimit a “race” but rather to create a new species.

In this context, transhumanism raises a new issue: the use of technological means to enhance some abilities does indeed clearly violate the concept of equality but at the same time it cannot be seen as a form of discrimination. In other words, transhumanism does not aim to segregate one category of people directly, but on the other hand proposes an improvement to the human condition. The issue is that this improvement will however create a *de facto* discrimination between the person who uses it and others. Thus Fukuyama concluded categorically here that “The first victim of transhumanism is equality”³³. This opposition of the enhanced vs the non-enhanced person has been characterized as artificial by the transhumanist scholars. Indeed, in their view, an enhanced person would be enlightened enough not to use

²⁶ Anne-Marie Le Pourhiet, *Touche pas à mon Préambule !*, Le Figaro, 24 mai 2008.

²⁷ Charles Foster, *Human dignity in bioethics and law*, J Med Ethics medethics-2013-101339, 13 December 2013.

²⁸ Matthew C. Jordan, *Bioethics and “Human Dignity”*, op. cit.

²⁹ Roger Brownsword, *Regulating Human Enhancement: Things Can Only Get Better?*, Law, Innovation and Technology 06/2009; 1(1):125-152.

³⁰ Francis Fukuyama, *Our Posthuman Future*, 2002.

³¹ James Wilson, *Transhumanism and moral equality*, Bioethics, Volume 21, Issue 8, pages 419–425, October 2007.

³² Directive 2000/43/EC. of 29 June 2000 implementing the principle of equal treatment between persons, irrespective of their racial or ethnic origin.

³³ Francis Fukuyama, *Transhumanism*, 2004, available at www.foreignpolicy.com/articles/2004/09/01/transhumanism

his advantage in such way to dominate the non-enhanced³⁴. Other transhumanists insist on the point that eventually the technology would be cheap enough for the all society to have access to it.

From a legal viewpoint, we are obliged to consider that an element of uncertainty exists on the discussion of the conformity of the transhumanism theory with the principle of equality. It has been written that “It is far from clear that we have a consensus in the human rights community about which inequalities in health constitute inequities or how egalitarian a society must be to conform to the requirements of a social order in which all human rights can be realized”³⁵. For instance, the Universal Declaration on the Human Genome and Human Rights³⁶ reflects this difficulty. Whereas Article 6 forbids discrimination based on genetic characteristics³⁷ and Article 10 states that research applications concerning the human genome must respect human rights³⁸, at the same time, Article 12 explains that everybody should have access to “advances in biology, genetics and medicine”³⁹.

In conclusion, human biological and genetic enhancements, in terms of the principle of equality of opportunity, do not strictly speaking create discrimination (Article 6) and can even be considered as a right (Article 12). We could even state that the principle of equality should protect the enhanced persons. To refer to the Frankenstein creature, it is revealing that the good doctor clearly discriminated it, depriving it even the right to have a name.

The principle of equality analysis refers in definitive to the idea that the benefits of human enhancement will not be evenly distributed among the population, which is more economical than legal related. However, in some cases, according to the chosen enhancement, a specific policy should be developed (for instance, see discussions further about the concept of intellect enhancement).

This tension between human enhancement and economical discrimination is also reflected in the current debate about the patentability of the human enhancements⁴⁰. A general exclusion of patentability of the human enhancement in abstracto does not find a legal basis, but in a case-to-case basis a human enhancement patent could be ruled as void, based on Article 6 of the Biotechnology Directive⁴¹ and Article 53 of the European Patent Convention. The Article 6 of the Biotech Directive states that : “1. Inventions shall be considered unpatentable where their commercial exploitation would be contrary to ordre public or morality; however, exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation. 2. On the basis of paragraph 1, the following, in particular, shall be considered unpatentable: (a) processes for cloning human beings; (b) processes for modifying the germ line genetic identity of human beings; (c) uses of human embryos for industrial or commercial purposes; (d) processes for modifying the genetic identity of animals which are likely to cause them suffering without any substantial medical benefit to man or animal, and also animals resulting from such processes” whereas the

³⁴ Nicholas Agar, *Humanity's End*, 2010, MIT Press, chapter 8.

³⁵ Alicia Ely Yamin, *Shades of dignity: Exploring the demands of equality in applying human rights frameworks to health*, *Health and human rights*, Volume 11, Issue 2.

³⁶ UNESCO, *Universal Declaration on the Human Genome and Human Rights*, 11 November 1997, adopted unanimously.

³⁷ “No one shall be subjected to discrimination based on genetic characteristics that is intended to infringe or has the effect of infringing human rights, fundamental freedoms and human dignity”.

³⁸ “No research or, in particular in the fields of biology, genetics and medicine, should prevail over respect for the human rights, fundamental freedoms and human dignity of individuals or, where applicable, of groups of people”.

³⁹ “(a) Benefits from advances in biology, genetics and medicine, concerning the human genome, shall be made available to all, with due regard for the dignity and human rights of each individual.

(b) Freedom of research, which is necessary for the progress of knowledge, is part of freedom of thought. The applications of research, including applications in biology, genetics and medicine, concerning the human genome, shall seek to offer relief from suffering and improve the health of individuals and humankind as a whole”.

⁴⁰ Maurice Schellekens, Petroula Vantsiouri, *Patentability of Human Enhancements*, *Law, Innovation and Technology*, Volume 5, Number 2, December 2013, pp. 190-213(24).

⁴¹ Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the legal protection of biotechnological inventions.

Article 53 of the EPC refers also to morality and “ordre public”, but adds to the exclusion list the “methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body”.

2.1.3. Eugenism, hate speech and the legal boundaries of freedom of communication

Transhumanism sometimes takes the form of a discussion, whereas some voluntary genetic modifications would appear to be beneficial to human beings. These modifications could in extreme cases lead to the creation of a new human subspecies. The situation could be seen as ironic: after almost a century of efforts on the part of biologists to prove that we can find more genetic differences between persons of the same cultural and ethnic category than between persons who are presumably from two distinct races, science is ready to create real racial differences for the first time. The idea of introducing genetic changes in order to improve our society is familiar to us as the theory of eugenics, which was used by the Nazis but not by them alone. One might have thought, and it has been argued⁴², that any discussion of eugenics has been an anachronism since the Holocaust and the exposure of its terrifying effects. On the other hand, in doing so, we might overestimate the rationality of humanity and the ability of science to discover new techniques of eugenism.

Science no longer needs the miracle of a peculiar storm to recreate life, as it did in the Frankenstein novel. The specific science of synthetic biology or “algeny” (a neologism created in 1966 from combining the words alchemy and gene)⁴³ proposes to transcend the limitation of evolution theory and to manually recombine the genes. Transhumanists simply apply this idea (theoretically) to the human body when considering how far it is possible to enhance human abilities through algeny. From a legal aspect, this kind of discussion, independently of the reality or not of its applications, could give rise to some issues related to hate speech. Hate speech will be taken here as a generic category of offenses created in most European countries which limitate the freedom of speech in some peculiar cases whereas the communication of an idea would constitute a real threat to the society.

Based on the famous theory of meme⁴⁴, it has been suggested that ideas are conveyed in the same way as genes or also micro-organisms in a biological organism. In other words, ideas are not inert but can replicate themselves, often unconsciously⁴⁵. This memetic explanation of the propagation of ideas could be applied by extension to racist ideas⁴⁶. We can conclude this analogy with the concept that eugenism, together with racism and negationism, fall into the category of a virus. Arguments based on rational ideas cannot by definition stem their proliferation. Therefore, many countries have adopted what might be described as an immune response and penalize the public communication of such ideas. We could for example cite additional protocol 189 of the European Convention of Human Rights⁴⁷, which applies to the specific medium of the Internet.

The question then, is a really simple one: is transhumanism as a theory illegal (from a European law approach), as it violates the legislation on the prohibition of racist speeches? Even if the theory is in fact racist in a very strict sense, as it serves the purpose of crossing the species boundary line of the old *homo*

⁴² Robert L. Hayman, Presumptions of justice: Law, politics, and the mentally retarded parent, Harvard Law Review (1990). 103 (6): 1209.

⁴³ Joshua Lederberg, Experimental Genetics and Human Evolution, Bulletin of the Atomic Scientists, October 1996, p. 6.

⁴⁴ Richard Dawkins, The selfish Gene, (192) 1989.

⁴⁵ Jeffrey Evans, Are We Buyers or Hosts--A Memetic Approach to the First Amendment; Stake, 52 Ala. L. Rev. 1213 (2000-2001).

⁴⁶ Caleb Rosado, The Multiple Futures Of Racism—Beyond The Myth Of Race Through A New Paradigm For Resolution In The Third Millennium, Futures Research Quarterly, vol. 15, No. 1, pp. 29-62, Spring 1999.

⁴⁷ Council of Europe, ETS no189, Additional Protocol to the Convention on Cybercrime, concerning the criminalisation of acts of a racist and xenophobic nature committed through computer systems, Strasbourg, 28.I.2003

sapiens sapiens species, we are obliged to consider that it was not within the remit of national and European lawmakers to intervene in such fields. Transhumanists give a lot of attention to (a certain form of) ethics and the concept of supremacy of a species or the idea to replace the species with a new one are rejected by the members of transhumanist organization. An individualist approach based on the autonomy of the person is preferred⁴⁸. As reasoning by analogy is by definition prohibited in criminal law, the conclusion is that the transhumanism philosophy cannot be assimilated from a legal point of view to racist speech and the freedom of expression logically prevails. It seems fair to note that for transhumanists, on the contrary, the argument that we must preserve the "integrity" (their quotation marks) of the human genome, which sounds eerily similar to old-fashioned racist arguments against miscegenation⁴⁹.

2.2. The issues raised by transhumanism as a solution

Frankenstein's monster was not only alive, but rougher and stronger. The main transhumanist paradigm is to transform humanity by way of enhancements. The book "Converging Technologies for Improving Human Performance, Nanotechnology, Biotechnology, Information technology and cognitive science"⁵⁰ is divided into various headings which could be the main components of transhumanist policy. They are "expanding human cognition and communication", "improving human health and physical capabilities", "enhancing group and societal outcomes", "national security" and "unifying science and education". Let us take a quick look at the most legally sensitive issues: enhancement of the intellect, anti-ageing processes and denying death.

2.2.1. The intellect

Magic pills which enhance the cognitive abilities, a neuronal interface with memorizing and processing services, biological implants or modification, all the four NBIC propose or aim to propose a way to enhance intelligence in the near future. It is in itself characteristic of the transhumanist's philosophy, which detaches the person from his body and thereby transforms the body into a tool. Also, the general idea of intelligence as a quantifiable characteristic denotes a purely mechanical approach, which does not fully reflect reality: what kind of intelligence? What does the concept of intelligence itself mean? It does not matter how many times it has been stated how inept the shortcut of likening intelligence to the IQ quotient is⁵¹, the myth of limited brain utilization (usually described as 10% of its full virtual capacity) is so seductive that it resists every logical attempt at rationalization⁵².

But let us imagine that one or a combination of techniques are successful in developing human cognitive abilities⁵³. Some might say that humanity could do with more intelligence. Nevertheless, some issues quickly become apparent. For instance, a lot of teachers know how difficult it has become to convince students to switch off their cell phone. They surely understand that they will not be able to communicate with others or of course to use it for cheating purposes but instinctively they are unwilling to forego this

⁴⁸ Nick Bostrom, in Gregory R. Hansell, William Grassie, H+/-: Transhumanism and Its Critics, Metanexus Institute, 2011, p.63.

⁴⁹ James Hughes, executive director of the Institute for Ethics and Emerging Technologies, interviewed in 2006, by Ronald Bailey, The Right to Human Enhancement And also uplifting animals and the rapture of the nerds, Reason.com.

⁵⁰ Mihail C. Roco, William Sims Bainbridge (ed.), Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information technology and cognitive science, Dordrecht, The Netherlands: Kluwer Academic Publishers (currently Springer), 2003, 428p, available here: http://www.wtec.org/ConvergingTechnologies/Report/NBIC_report.pdf

⁵¹ Nick Collins, IQ tests 'do not reflect intelligence', 19 December 2012, The Telegraph.

⁵² Patrick J. Kiger, Are you really only using 10 percent of your brain?, accessible at <http://science.howstuffworks.com/life/ten-percent-of-brain.htm>

⁵³ As with the drugs Ritalin, Bromocriptine, Donepezil, and Modafinil, which are already known to boost mental performance.

link to their device even temporarily, and this relationship slowly transforms in some cases into a form of psychological dependency. An explanation within the framework of this study of the transhumanist mechanism would be to consider that in some way the cell phone has ceased to be a device in its own right and has instead become part of the body, thus achieving the status of a body extension. Now, let us imagine a student equipped with a neuronal interface or a drug with cognitive enhancement properties. There would be a high level of dependency. Already in 1977, Martin Heidegger stated that “The essence of modern technology lies in Enframing”⁵⁴, in the sense of destining and danger. He means that technology “disguises the nearness of world that nears in the thing”⁵⁵ and his words could certainly be useful as a demonstration of the naïve conceptualization of technology that is embraced by transhumanists. In response to the issue of dependency to the technology, the principle of equality as seen above does not possess the legal certainty to rule the topic. Nevertheless, it has already been worked out that among the three basic available policies, i.e. prohibition, *laissez-faire* and discouraging use, only the third one would correspond to the principles of liberal democracy⁵⁶. Prohibition would be ineffective, where no negative side-effects for the individual can be demonstrated. On the other hand, *laissez-faire* would lead to a form of indirect social coercion: the mandatory consumption of a drug for instance, in order to stay competitive. Thus, some scholars are already wondering whether the non-consumption of a drug of this kind could be used to prove negligence, on the part of a surgeon for instance, or more generally to create a new kind of standard of care within the framework of civil liability⁵⁷. The policy of discouraging use means that the regulation of cognitive enhancement methods would be articulated in an “Economic Disincentives Model” composed of special taxes for manufactures, fees for users, and a licensing procedure. For certain activities, the analogy with anti-doping procedures could also be useful. However, economic coercion would still exist to a certain degree, creating a gap between those who could afford the enhancements and those who could not, unless of course we see the appearance of a human right to intelligence, as a positive obligation imposed to the State? Indeed, it could be included in the - already affirmed and protected as a human right⁵⁸ - right to education, which could be defined also and amongst other things as the individual’s right to develop his intellect. However, from a practical aspect, it still seems improbable, since, as we said above, the notion itself of intelligence is far too elusive. This specific transhumanist approach corresponds in definitive to some naïve idea of the human brain assimilated to a computer which should be rejected.

2.2.2. Ageing

Ageing has become a pathology⁵⁹. Together with the enhancement of intelligence, combating ageing, which is seen as comparable to death, is one of the first goals of the transhumanist, an aim they justify with the assumption that this is the enhancement that humanity dreams of acquiring, whether consciously or not⁶⁰. The anti-ageing technology has progressively ceased to belong to Science-fiction and we can cite for instance the work of the transhumanist Audrey De Grey on regenerative medicine but also his views about the “pro-ageing trance”, that is a common psychological blockage against life extension techniques which he explains as a process of strategy which peoples use in order to cope with ageing⁶¹. The very first words of Fossel’s book on ageing and reversing cell senescence are very characteristics: “The major danger of

⁵⁴ Martin Heidegger, *The Question Concerning Technology*, 1977, p.25.

⁵⁵ Op. cit. p47.

⁵⁶ Veljko Dubljević, *Cognitive Enhancement, Rational Choice and Justification*, Neuroethics, April 2013, Volume 6, Issue 1, pp 179-187.

⁵⁷ Nicole Vincent, *The Challenges Posed to Private Law by Emerging Cognitive Enhancement Technologies*, FICHL publication series 11 (2011), p.511.

⁵⁸ [Klaus Dieter Beiter](#), *The Protection of the Right to Education by International Law, Including a Systematic Analysis of Article 13 of the International Covenant on Economic, Social and Cultural Rights*, Brill, 2005.

⁵⁹ Michael Fossel, *Cells, Aging, and Human Decease*, New York: Oxford university Press, 2004.

⁶⁰ Gregory Stock, *Redesigning humans: Choosing our genes, changing our Future*, Mariner Books, 2003.

⁶¹ Aubrey de Grey, Michael Rae, *Ending Aging: The Rejuvenation Breakthroughs That Could Reverse Human Aging in Our Lifetime*, St. Martin's Press, 2008.

technology is not that we may play God, but that we may refuse to work at being fully human". The ultimate boundary of Frankenstein's myth, the fear of the wrath of God, is now overcome and the scientists wonder: since life expectancy has doubled during the last century, why not double it more?⁶²

However, from a legal and political point of view, a society without ageing could look more like a dystopia. Obviously there are no laws that forbid people from living longer and healthier lives and in the contrary the right to health is internationally recognized⁶³, even if some scholars discuss the pertinence of his insertion as a legal norm⁶⁴. However the mechanisms of society are based on the implicit assumption of a renewal of the generations, and that the retirement period of an individual will be shorter than their working life. A lot of practical, societal, economical and moral concerns lead some scholars to the conclusion that the anti-ageing research should be limited⁶⁵.

However, it could be difficult and even impossible to find a legal basis for this policy. Nevertheless, a sudden and huge life extension could considerably destabilize the legal system. For instance, family law, inheritance law and social security law would all have to be reconceived, not to mention copyright law (protection currently lasts 70 years *post auctoris mortem* and scholars are already wondering how to save the public domain⁶⁶). Just to stress some issues, about social security law, the transhumanist approach to ageing will obviously put in peril the retired-working population ratio. As regards modern family law, how complex could the situation become with a accumulation of great grandparent visiting right? Also inheritance law would be in crisis: if we refer to the economists' analysis, nowadays more than over intergenerational transfers account for the vast majority of capital aggregation⁶⁷, that is that past wealth and inheritance are bound to play a key role for aggregate wealth accumulation⁶⁸.

Questions of overpopulation would also arise as vital resources grew scarcer each year. At the same time, the right to give birth, and the right to have access to vital resources are also fundamental human rights and their virtual cohabitation with the transhumanist redefinition of age would pose serious legal and political dilemmas if this vision turned into a reality. Finally, it has also been affirmed that many of our greatest creations resulted from the recognition of our own mortality⁶⁹.

2.2.3. Death

One way to combat age and ultimately death is also "simply" to replace old parts of the human body with biological or artificial replacements. Sometimes identified as a component of transhumanism, the use of prostheses is in fact as old as the world. The legal aspects of the question are well known, and for instance it is not possible in most countries to confiscate an installed prosthesis, as it has achieved by extension the status of a part of the human body. It has to be reminded that "As it is well known, European States share a substantially uniform position as to the exact definition of the notion of death, which is considered as brain

⁶² National Institute on Aging, The Future of Human Life Expectancy: Have We Reached the Ceiling or is the Sky the Limit?, Research Highlights in the Demography and Economics of Aging, March 2006.

⁶³ Article 25 of the United Nations' Universal Declaration of Human Rights 1948 states that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services."

⁶⁴ Philip Barlow, Health care is not a human right, BMJ. Jul 31, 1999; 319(7205): 321.

⁶⁵ Larry Temkin, "Is Living Longer Living Better?" in Julian Savulescu, Ruud ter Meulen, and Guy Kahane eds., Enhancing Human Capacities, (Oxford: Wiley-Blackwell, 2011).

⁶⁶ Lucie M. C. R. Guibault, P. B. Hugenholtz (ed.), The future of the Public Domain, Identifying the Commons in Information Law, Kluwer Law International, 2006.

⁶⁷ Laurence J. Kotlikoff, Lawrence H. Summers, The Role of Intergenerational Transfers in Aggregate Capital Accumulation, NBER Working Paper No. 445 (Also Reprint No. r0215), February 1980.

⁶⁸ Thomas Piketty, On the Long-Run Evolution of Inheritance - France 1820-2050, Quarterly Journal of Economics, vol.61(3), 2011, pp.1071-1131.

⁶⁹ Leon Kass, Mortality and Morality: The Virtues of Finitude, in Toward a More Natural Science (Mankato: The Free Press, 1985), p. 299-317.

death.”⁷⁰ We will not discuss the transhumanist solution of mind-uploading⁷¹, which for now is clearly in the realms of science fiction, but it cannot be denied that the other transhumanist solution to death has seen the beginning of a brand-new industry, whose legal status is still yet to be decided, that of “cryonics”⁷². The main idea is to preserve the body of an individual at very low temperature (because of the cost, often only the head is kept), in the hope that in the future, medical science will be able to resuscitate them. Even if cryonics technology is not by itself a body enhancement, it is still in phase and has been adopted by the transhuman philosophers as one of the means towards the achievement of a transhumanist society. Indeed, the cryonics ultimately aim to offer a new and revolutionary ability to mankind: to resuscitate.

By definition, the procedure can only be used after death, otherwise it is deemed to constitute depending on the legal system of each country the criminal offence of murder or assisted suicide. Multiple legal issues arise on the topic of cryonics. First of all, the procedure itself could be classified as a form of fraud, since a professional is exploiting a patient’s hope of future revival, mostly in the absence of any existing technology or technology emerging in the near future that is capable of reviving a patient using this technique. Cryonics societies such as Accor reply that for the offense of consumer fraud to be relevant, a deception has to be proven. And for transhumanist, no deception occurs, since “there are no known credible technical arguments that lead one to conclude that cryonics, carried out under good conditions today, would not work”⁷³. The line of distinction between false hope and faith is a subtle one that the cryonic contract would have to reflect expressly in order to avoid to be voidable.

Most cryonics also include a “standby procedure”, which means that a medical team artificially restores blood circulation and breathing, using techniques similar to cardiopulmonary resuscitation as soon as possible after the heart stops. In the absence of the patient’s consent, every contact is deemed to give rise to liability for assault (under common law) or non-contractual liability for negligence (under civil law), where the act is not conceived in the best interests of the patient, and here, it is doubtful or at the least debatable how far the standby procedure corresponds to the best interests of the patient, at the moment that death is unavoidable. This debate is closely related to the discussions on “advance health care directives”, sometimes also called living will. Persons who fear to lose their decision-making capacity in the future express in a written document their will as regards as the preferred treatment. The legal rationae of this act is based on the right to self-determination⁷⁴. The article 9 of the biomedicine Convention of the Council of Europe⁷⁵ states that “The previously expressed wishes relating to a medical intervention by a patient who is not, at the time of the intervention, in a state to express his or her wishes shall be taken into account”. Still, the ambiguous formulation of the article gives place to numerous interpretations and the legal validity of such a contract is still uncertain in Europe. Furthermore, and more importantly, the only legal status existing in most European countries between life and death is that of missing persons, who in some circumstances are classified as deceased persons until they surface again in society. Then, paradoxically, from a legal point of view, the most difficult issue is not the one of the eventual social reinsertion of the person in case of a successful reanimation, but the one of the status of his body in the meantime. A body preserved under cryonic conditions is therefore a dead body, with specific regulations to protect its dignity. Consequently, in the majority of countries, cryonics is not a legal method of disposing of a corpse, as usually only burial, cremation and donation to science are allowed. According to the country,

⁷⁰ Angela Di Stasi, Human dignity: from cornerstone in international human right law to cornerstone in international biolaw? in Stefania Negri (ed), *Self-Determination, Dignity and End-of-Life Care, Regulating Advance Directives in International and Comparative Perspective*, Leiden: Koninklijke Brill NV, 2012, p.5.

⁷¹ Anders Sandberg, Nick Boström, *Whole Brain Emulation: A Roadmap*. Technical Report, 3. Future of Humanity Institute, Oxford University (2008).

⁷² David Shaw, "Cryoethics: Seeking Life After Death" (2009) *Bioethics*, 23(9): 515-521.

⁷³ <http://www.alcor.org/cryomyths.html#myth1>

⁷⁴ Roberto Andorno, Nikola Biller-Andorno, Susanne Brauer, *Advance Health Care Directives: towards a Coordinated European Policy?*, *European Journal of Health Law* 16 (2009) 207-227.

⁷⁵ Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, ETS164, 1997.

various criminal offenses such as “abuse of the dead body” or “disturbance of the peace of the dead” could also be applicable.

This issue has arrived to the courts, for instance in France. In a case, the refrigerated bodies of a married couple (who were passionate about cryonic technology) were kept in the basement storage in their château. The administration gave injunction to the son to proceed to a decent burial. The administrative court, in first instance, ruled against the son, by application of the national law on dead body disposition. However, the Supreme administrative court reversed this decision and replaced it with a two-step reasoning⁷⁶. First, in virtue of the article 9 of the European Convention on Human Rights, the will of the couple is deemed to constitute the expression of their faith and therefore it may prevail upon national legislation about the disposing of corpses (and here again we see how transhumanism appears as a form of secular eschatology). Then, the court adds that the exercise of this human right is limited by questions of public policy and therefore a national legislation which authorizes only cremation or burial as available mode of disposal of a corpse corresponds to policy of public health and, by consequence, is not disproportionate to the limitation of human rights.

3. Transhumanism, a vector for legal changes

Even if most of the practical applications of transhumanism infringe one or more fundamental human principles, and call for strict regulation, the concept itself appears to be a rich vector for discussion of a notion which was previously regarded as obvious and not in need of any definition.

3.1. The concept of kindred

In recent decades, the concept of family has witnessed many changes. While transhumanism promotes DNA modification, independently of the principle of dignity analyzed above, this philosophy is participating in its way in the current redefinition of the concept of family.

For instance, the issue of the “three-parent baby” is characteristic of this phenomenon. More precisely, “The process of producing a three-parent baby involves taking the nucleus of one egg and inserting it into the cytoplasm of another egg which has had its nucleus removed, but still contains mitochondrial DNA, and then fertilizing the hybrid egg with a sperm. The purpose of the procedure is to remove a nucleus from a cell with defective mitochondria and place it in a donor cell with healthy mitochondria, which after fertilization will contain a nucleus with genetic material from only the two parents”. In concrete terms the donor participates in 0.1% of the genetic material of the future baby by means of mitochondrial transfer. The inference is that the very concept of a biological parent is slowly but surely becoming an anachronism. In most countries, the technique has been banned to protect the welfare of the child⁷⁷, and in definitive terms and implicitly, the concept of the biological family itself. As an indication of change in mentalities, Great Britain is preparing to be the first Western country to allow this practice⁷⁸. This, together with many other contemporary revolutions in attitudes (gay marriage and adoption) could lead to a redefinition of the legal framework of the family, whereby the concept becomes a form of quasi-contractual attachment.

3.2. The concept of a human

It is generally admitted that the philosophy of transhumanism should be seen as an invitation to redefine the notion of humanity⁷⁹. Likewise, an analysis of the legal framework of transhumanism should prompt

⁷⁶ Conseil d'État, n° 260307, 06/01/2006.

⁷⁷ Maxine Frith, Ban on scientists trying to create three-parent baby, *The Independent*, 14 October 2003.

⁷⁸ James Gallagher, UK government backs three-person IVF, *BBC News*, 27 June 2013.

⁷⁹ Timothy F Murphy, The ethic of impossible and possible changes to human nature, *Bioethics*, Volume 26, Issue 4, pages 191–197, May 2012.

reflexion on the legal notion of humanity. However, transhumanism is not (just) a form of posthumanism, defined here as the philosophy which aims to replace humanity. Transhumanists do not refute their acceptance of humanity but offer a new definition based entirely on the human's personality, and therefore detached from the body. The goal of redefining the concept of a human being is explicit in most transhumanist work. For instance, Nick Bostrom describes transhumanism in these terms: "Transhumanists view human nature as a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways. Current humanity need not be the endpoint of evolution. Transhumanists hope that by responsible use of science, technology, and other rational means we shall eventually manage to become posthuman, beings with vastly greater capacities than present human beings have"⁸⁰.

This theory could be linked to the theory of "*homo communicans*"⁸¹. The classical theories of communication, such as the black box, are used in a radically different field: the definition of the essence of humanity. This means that research into human ontology is denied as part of the black box, while only the input and output, wherein lie the communication skills, are relevant. Consequently, the human is defined by its level and quality of communication skills.

In the light of the theory of *homo communicans*, how should we interpret the Universal Declaration on Bioethics and Human Rights, which begins with this declaration: "Conscious of the unique capacity of human beings to reflect upon their own existence and on their environment, to perceive injustice, to avoid danger, to assume responsibility, to seek cooperation and to exhibit the moral sense that gives expression to ethical principles"⁸²?

These definitions throw the biological identity of humanity into an oblivion, with consequences which are not only rhetorical. For instance, the story of Chimpanzee Tommy suggests societal transformation. In 2013, one group of activists, the Nonhuman Rights Project, filed a law suit in New York for violation of the *habeas corpus* laws (protection against arbitrary detention)⁸³. In this case, the victim was a chimpanzee, which had been living in a small cage for the last 10 years. They do not claim that Tommy is a human being, at least not directly, but they called for him to be given the status of a legal person. One of their arguments was that a chimpanzee is able to "speak", as studies show that big apes can learn the basics of sign language and can also learn 360 different "lexigrams" (symbolic word representations)⁸⁴. Therefore, they have advanced communication skills, they can use them in cooperation with one another, and to paraphrase the universal declaration on bioethics and human rights, they certainly have a self-consciousness and a consciousness of their environment (present, past and future). The claim has been denied by the NY court on the point that apes can't be liable for their actions. At the same time, however, on a similar case, the Supreme Court of Argentine unanimously decided to recognize the primate as a "*non-human person*" which has some basic human rights⁸⁵.

Likewise, in a theoretical (we hope!) discussion, what would be the status of the poor victim of a scientific experiment similar to the novel "The Island of Doctor Moreau"⁸⁶? In this novel written by H G Wells in 1896, a scientist experiments on animals with the purpose to transform them into human being. As the result is still imperfect, it is in this story the ability to follow the laws (ie to be vegetarian) that defines the humanity of the creatures. We have to admit that nowadays a "mad scientist" scenario of animal DNA

⁸⁰ Nick Bostrom, Transhumanist Values, Review of Contemporary Philosophy, Vol. 4, May (2005), available at <http://www.nickbostrom.com/ethics/values.html>

⁸¹ Philippe Breton, L'Utopie de la Communication, Paris: La Découverte, 1992.

⁸² UNESCO, Universal Declaration on Bioethics and Human Rights, 2005.

⁸³ Michael Mountain, Lawsuit Filed Today on Behalf of Chimpanzee Seeking Legal Personhood, 2 December 2013, <http://www.nonhumanrightsproject.org>.

⁸⁴ Cristen Conger, Can chimpanzees learn human language?, <http://www.howstuffworks.com/>.

⁸⁵ Argentine court extends human right to freedom to orangutan, 22 December 2014, available at <http://rt.com/news/216551-orangutan-argentina-human-right>.

⁸⁶ H. G. Wells, The Island of Doctor Moreau, Heinemann, Stone & Kimball, 1896.

implants into human DNA or vice-versa cannot be entirely ruled out. For instance, in 2007, researchers at the University of Nevada created chimera sheep with 15% human DNA⁸⁷. We can certainly conclude here that “In the coming century, it is overwhelmingly likely that constitutional law will have to classify artificially created entities that have some but not all of the attributes we associate with human beings”⁸⁸, but also more generally, that the human genome by itself will no longer suffice to identify a human as a legal person with their own rights and obligations. It is still very early to stipulate and extrapolate the criteria that might be adopted, but surely the theory of *homo communicans* could have a much unexpected application. It has been recently analyzed about this eventuality of human/animal chimeras that it demonstrates a change of paradigm for the bioethics, from a facilitator to an active participant in the agenda setting of science governance⁸⁹. We could generalize on this point and conclude that indeed the transhumanism has provoked a shift in the lawmaking process: it is no longer possible to wait for the scientific progress and eventually react to some negative effects, but it is expected nowadays from the lawmakers to act proactively.

3.3. Freedom of thought

Transhumanism is based on a paradox: while denying the anatomical part of the consciousness, the intimate relationship between the personality and the body, it leads to a kind of reification of the concept of consciousness itself. Indeed, the idea of drugs which could adulterate the personality and the concept of a transfer of consciousness to a digital medium transform the notion of consciousness into a raw material for experimentation. In this context, the legal language needs to be evaluated too, and specifically that concerning freedom of thought.

This human right already exists and is defined in these terms: “Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance”⁹⁰. However until now it has found a very limited application, since by definition a thought has to be communicated in order to be certified and therefore freedom of thought is *de facto* incorporated into freedom of expression. At a fundamental level, freedom of thought is related mostly to religion issues⁹¹ as a protection against proselytism.

Nevertheless, rhetorically speaking, the concept of freedom of thought extends far beyond a simple assimilation between thought, beliefs and religion. It also means the freedom to have a mind which works without external or internal interferences. For instance, the classic issue of subliminal stimuli is characteristic. According to some researches, subliminal images can be used not only for marketing purpose but even to boost learning capacity⁹². In the USA, the question has been discussed at court, when a hard rock band hid the message “do it” in their song. Two teenagers, who were fans of the band, committed suicide and their parents sued the band. It could be argued that, by inserting a subliminal message, the band has implanted the idea of suicide and unlawfully modified the thoughts of the teenagers, violating therefore their freedom of thoughts. The message was below the threshold of

⁸⁷ Esmail D. Zanjani and others, The human–sheep chimeras as a model for human stem cell mobilization and evaluation of hematopoietic grafts' potential, Society for Hematology and Stem Cells, 2007.

⁸⁸ Jeffrey Rosen, Benjamin Wittes (ed.), Constitution 3. 0: Freedom and Technological Change, Washington: the Brookings Institution, 2011, p.199.

⁸⁹ Bryan Salter, B Harvey, Creating problems in the governance of science: bioethics and human/animal chimeras, Science and Public Policy Published on-line, 7 February 2014. doi:10.1093/scipol/sct063.

⁹⁰ Article 18 of the UDHR and also Article 9 (1) of the EHRC.

⁹¹ For instance: ECHR, Kokkinakis v. Greece (application No. 14307/88), 1993, concerning proselytism; Universelles Leben e.V. v. Germany (application No. 29745/96), 1996, concerning an association classified as a “youth sect” by the State; Lautsi v. Italy (2011) concerning crucifixes displayed in classrooms.

⁹² Harold Cook, Effects of Subliminal Symbiotic Gratification and the Magic of Believing on Achievement, Psychoanalytic Psychology Vol 2(4), 1985, 365-371.

consciousness, but reached the sub-consciousness of listeners. The judge ruled in favor of the band, since no evidence was found that the message was powerful and clear enough to provoke this behavior but also found on a rhetorical level that a subliminal message constitutes, by its essence, a violation of the right to privacy⁹³. Indeed, if the freedom of thoughts seems at first sight to fit better with the case, the broad interpretation given to the right to privacy tends to make it the fundamental basis for the protection against every kind of intrusion on personal integrity⁹⁴.

The subliminal message is a classic and well-documented form of mind intrusion, which is banned in most countries. The NBIC convergence will most probably show the appearance of new forms of mind intrusion. In the present and mostly future era of transhumanism, freedom of thought will therefore represent a development from traditional freedom of expression in order to protect the individual against techniques (biological or computer-based) aiming to manipulate cognitive activity.

3.4. Body auto-determination

The transhumanist movement possesses a short declaration of principles, in the form of a charter, which was first written in 1998, amended several times and adopted by the Humanity+ Board in March, 2009⁹⁵. Article 8 reveals most what constitutes the essence of transhumanism: "We favor allowing individuals a wide personal choice over how they enable their lives. This includes use of techniques that may be developed to assist memory, concentration, and mental energy; life extension therapies; reproductive choice technologies; cryonics procedures; and many other possible human modification and enhancement technologies.". Freedom, and more specifically individual freedom to engage in "body auto-determination" is at the base of the transhumanist philosophy. The human rights roots of the transhumanist movement open up two possibilities. First, we can use the traditional principle of proportionality to resolve conflicts between two human rights (in this case the principle of dignity and body auto-determination), according to which right *in concreto* should prevail in the balance, with regard to the interests pursued. However, the overwhelming use of the principle of proportionality can no longer conceal the fact that it contains a large measure of arbitrary judgment⁹⁶. A second solution would be to redefine the notion of human rights in the light of transhumanism, as not only a right of individuals but also as rights of humanity, which may sometimes prevail over individual requests. The issue is ultimately to mark out the ethical boundaries of body auto-determination, in order to protect the concept of humanity.

Transhumanists themselves are very aware of the legal aspects of their beliefs. A "Transhumanist Law Network" has apparently been created with the aim of convincing the public and opinion leaders of the recognition of technological self-determination as a legal right. They explain that: "Transhumanism is, in part, a civil liberties movement with roots in the most fundamental demand of liberal democracy: Sane, adult citizens have a right to control their own bodies and minds. Through the Self-determination and Human Rights program we seek to engage the human rights community, legal scholars, reproductive rights activists, the transgendered community, the disabled and advocates of public health approaches to illicit drugs in a campaign to deepen and broaden the concept of human rights. In particular we believe that the

⁹³ Vance v. Judas Priest, 1990.

⁹⁴ With the risk to lose its identity. For instance, Marie-Therese Meulders-Klein wrote that : "The concept of privacy has become incredibly complex to the point that its polymorphic, multifaceted and heterogeneous content is increasingly unpredictable and elusive" (the original text in French: "Le concept de vie privée est devenue d'une complexité inouïe au point que son contenu polymorphe, protéiforme et hétéroclite soit de plus en plus imprévisible et insaisissable"). Marie-Therese Meulders-Klein, L'irrésistible ascension de la « vie privée » au sein des droits de l'homme ; synthèse et conclusion, in Frederic Sudre (ed.), Le droit au respect de la vie privée au sens de la Convention européenne des droits de l'homme, Bruylant, 2005, p.307.

⁹⁵ Available at <http://humanityplus.org/philosophy/transhumanist-declaration/>.

⁹⁶ Stavros Tsakyrakis, Proportionality: An assault on human rights?, International Journal of Constitutional Law, 2009.

right to technological self-determination should be protected by laws and treaties. We are working with the Transhumanist Law Network to devise the legal frameworks for this campaign.”⁹⁷.

4. Conclusion

It has been asserted that this entire philosophy of man against nature, first controlling it, then transcending it, is part of Western civilization and has its roots in the Promethean myth⁹⁸. And there again, it suits to remind that the Frankenstein story was conceived as a form of Promethean myth itself. The philosophical issues⁹⁹ associated with Frankenstein’s monster were brilliantly set out 200 years ago by Mary Shelley. Therefore, even if in the discussion about the legal consequences of transhumanism, first as an ambiguous and controversial idea, then as a set of practical but sometimes illegal technological applications and, at least, as an inducement to legal reforms the analysis has shifted from the Frankenstein myth to more practical concerns, it seems in conclusion more pertinent to return to the classic novel: “I was now about to form another being of whose dispositions I was alike ignorant; she might become ten thousand times more malignant than her mate and delight, for its own sake, in murder and wretchedness. (...). Even if they were to leave Europe and inhabit the deserts of the new world, yet one of the first results of those sympathies for which the daemon thirsted would be children, and a race of devils would be propagated upon the earth who might make the very existence of the species of man a condition precarious and full of terror. Had I right, for my own benefit, to inflict this curse upon everlasting generations? I had before been moved by the sophisms of the being I had created; I had been struck senseless by his fiendish threats; but now, for the first time, the wickedness of my promise burst upon me; I shuddered to think that future ages might curse me as their pest, whose selfishness had not hesitated to buy its own peace at the price, perhaps, of the existence of the whole human race”¹⁰⁰.

⁹⁷ James Hughes, Battle Plan to Be More than Well, 2004, from <http://transhumanism.org/index.php/th/more/509/>

⁹⁸ Bob Tostevin, The Promethean Illusion: The Western Belief in Human Mastery of Nature, McFarland, 2010, 273p.

⁹⁹ Nicolas Michaud (ed.), Frankenstein and Philosophy: The Shocking Truth, Vol.79 in the Popular Culture and Philosophy series, Chicago: Open Court Publishing Company, 2013.

¹⁰⁰ Victor Frankenstein in Ch. 20.