The Demand for Human Upgrading as a Challenge to Christian Anthropology

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Facing Possible Future Dystopias

The designation of the immediate future as the age of the artificial intelligence (hereafter, AI) has triggered not only a debate on the feasibility and risks of the project, but also an attempt to reconfiguring the human condition, history and culture itself, through many expected seismic changes. For example, the expectation of achieving *singularity* due to the exponential growth of AI is described as the moment when machines will significantly exceed human decision-making abilities, with the risk of becoming autonomous, making man subordinate to them. This technology is defined as the moment when the computer will be able to interfere with its algorithm by improving it, thus creating the next generation of more intelligent computers, in an indefinitely iterated process. *Deep learning algorithms*, which have been around for some decades, are already pointing in this direction, arousing every futuristic imagination. Thus, science's highest achievement may well be its last[1]. Ray Kurzweil considers the impact of the advent of singularity so deep

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1. Th. Tasis, *Ἡ φιλοσοφία τῆς ἀνθρώπινης ἀναβάθμισης*, Harmos Publications, Athens 2021, pp. 269-270; St. Russell, *Συμβατὴ μὲ τὸν ἄνθρωπο; Ἡ τεχνητὴ νοημοσύνη καὶ τὸ πρόβλημα τοῦ ἐλέγχου*, transl. N. Apostolopoulos, Travlos Publication, Athens 2021, p. 11. However, there are those who argue that, while it is possible that one day AI will be able to write its own code, it will never be able to develop reflection and will. Cf. H. A. Kissinger, Er. Schmidt, D. Huttenlocher, *Ἡ ἐποχὴ τῆς Τεχνητῆς Νοημοσύνης καὶ τὸ ἀνθρώπινο μέλλον μας*, transl. M. Katsimitsis, Liberal Books Publications, Athens 2022, p. 116.

that human life will be irrevocably transformed. It is a radical rethinking of both life and death[2]. For the time being, the algorithms are enjoying an ever-increasing recognition, managing a large part of manual labor, carrying out financial operations, regulating aviation, taking up executive positions on corporate boards (with the EU being the exception so far)[3], giving medical opinions, becoming dangerously involved in wars, and finally sparking discussions about their future status as legal entities[4].

At the same time, with the development of the AI, the possibilities *of human upgrading*, also known as *Transhumanism*, promising "supernatural" human abilities –even immortality–, are awaken the worst nightmares – the "visible" possibility of *techno-determinism*[5]. By *transhumanism* we mean a composite current of philosophy of mind and technology, which, through the exploitation of various epistemological issues of molecular biology, neuroscience, nanotechnology, computer science etc.[6], is evolving into a "new anthropology". To be sure, for Nick Bostrom, Professor of Philosophy at Oxford and Director of the Future of Humanity Institute, transhumanism is a cultural, intellectual and scientific movement aimed at improving the physical and mental capacities of human beings in order to reduce or even eliminate the evils of suffering, illness, ageing and even death[7]. Bostrom's views are particularly important, not because he is an

2. R. Kurzweil, *The Singularity is near: When Humans Transcend Biology*, Penguin Books, New York 2005, p. 22: "What, then, is the Singularity? It's a future period during which the pace of technological change will be so rapid, its impact so deep, that human life will be irreversibly transformed. Although neither utopian nor dystopian, this epoch will transform the concepts that we rely on to give meaning to our lives, from our business models to the cycle of human life, including death itself. Understanding the Singularity will alter our perspective on the significance of our past and the ramifications for our future".

3. Committee on Legal Affairs of the European Parliament, "Report with recommendations to the Commission on the Civil Law Rules on Robotics [2015/2103 (INL)]", 2017. Cf. St. Russell, *op.cit*., p. 179.

4. Y. N. Harari, *Homo Deus. Μιὰ σύντομη ἱστορία τοῦ μέλλοντος*, transl. M. Laliotis, Alexandria Publications 2017, pp. 299-304.

5. For the place of the human body in transhumanism, see N. Bostrom, "Why I want to be a Posthuman When I Grow up", in: M. More, Natasha Vita-More (eds.), *The transhumanist Reader: Classical and Contemporary Essays on the Science, Technology and Philosophy of the Human future*, Wiley-Blackwell, Oxford U.K. 2013, pp. 28-53.

6. Th. Tasis, *op.cit*., p. 14.

7. Bostrom's precise definition of transhumanism is as follows: "*The intellectual and*

expert scientist, but because he is an internationally recognized figure, who attempts to philosophically invest in and promote the movement of transhumanism[8].

More specifically, the movement of transhumanism can be distinguished into: (a) *critical transhumanism* or *superhumanism*, the main characteristic of which is man's effort to acquire, through technology and genetic engineering, superhuman abilities – e.g. radical life extension, immortality, super-skills in various fields such as music, sports, intelligence etc., and (b) *technical transhumanism*, which does not care about the preservation of the human species – rather, it wishes to transcend it in the form of a fusion of man and machine (*cyborg*), and through this creature to attain immortality and conquest the space. "For technical transhumanism, man does not represent a value; he simply is a transitional evolutionary stage"[9]. Methods and strategies to achieve the goals of transhumanism include genetic enhancement through genetic engineering, the introduction of neural implants to the body to interact with the internet, nanobots, neurotechnology aimed at uploading the mind to the computer, the use of nootropic substances for the psychological and consciousness improvement of the individual, eugenics etc.[10]. The widespread dissemination of the ideas of transhumanism has, as might be expected, also raised critical reservations among experts, both as to the possibility of achieving all the aims of the movement and as to its moral and social implications.

cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities"; see N. Bostrom, "Introduction – The Transhumanist FAQ: A General Introduction", in: C. Mercer and D. Maher (eds.), *Transhumanism and the Body. The World Religions Speak*, Palgrave Macmillan, London 2014, p. 1.

8. See J.-M. Moschetta, *Transhumanisme et christianisme: Convergence et conflits*, Conférence donnée à Toulouse à l'invitation du Cercle Humaniste – 9 Mars 2015, available in the following website: https://www.researchgate.net/publication/281284897_Transhumanisme_et_chri stianisme_Convergence_et_conflits [10/03/2014], p. 2.

9. Th. Tasis, *op.cit.*, p. 24.

10. Th. Tasis, *op.cit.*, pp. 103-104. Fr. Fukuyama in his book: *La fin de l'homme. Les conséquences de la révolution biotechnique*, La Table Ronde, Paris 2002, p. 28, refers to the exaggerated (?) estimation of the possible personality changes by the same individual in very short periods of time, through neuropharmacology and its nootropic concoctions.

It is quite difficult to imagine man and his place in the context of this "new anthropology". It is a "polymorphous", if not "amorphous" man, comparable to the diversity of "schools" and tendencies of transhumanism. It is a question of whether and how transhumanism adopts the distinction, even on a methodological basis, between body and soul. Despite the fact that it refers to man's psychic qualities, transhumanist anthropology is materialistically monistic, as it reduces the mental capacities, emotions, will, human condition in general, to its biological substratum[11]. It remains indifferent to the man's posthumous fate, both of man in particular and as a species, as we know it. Despite the occasional religious connotations, especially of technical transhumanism[12], the movement does not recognize in man anything that transcends his biology. Nevertheless, within the context of transhumanism, we can discern a peculiar noology. Mind, as human (?) intelligence, which is also understood outside of human nature, either as the intelligence of machines or as the result of the interaction. Marvin Minsky, in his book *The society of the mind*[13], has shown, already in 1986, the evolvability of the mind from machines, while the well-known physicist Frank Tipler, in the context of the *Omega Theory*, understands cognition –a distinct echo of an anthropology– as the element called upon to dominate over matter in the universe, under conditions of universal collapse[14].

It becomes obvious that, at least for transhumanism, man has been already perceived as a biological machine, so that, after 70,000 years or more of continuous existence as *homo sapiens-sapiens*, he could complete his cycle, evolving into a new species, e.g. *cyborg*. At the same time, the existence of human nature is being systematically deconstructed, reduced to the level of a blind evolutionary process, with significant flaws. Thus, the existence of intelligent beings could well replace the biology of carbon compounds, moving to silicon technology or a mixed state of both.

11. Th. Tasis, *op.cit.*, p. 237.
12. For the religious elements of the technical transhumanism, see M. E. Zimmerman, "Religious Motifs in Technological Posthumanism", *Western Humanities Review* 63, 3 (2009), pp. 67-83.
13. Greek edition: M. Minsky, *Η κοινωνία τῆς νόησης*, transl. Myrto Antonopoulou, Katoptro Publications, Athens ²2006.
14. Fr. J. Tipler, *The Physics of Immortality*, Anchor Books, Doubleday, New York 1994.

Despite the objections expressed for the possibility of achieving all those goals[15], prominent experts express their concern about the real danger of the man being transcended, both by machine superintelligence and by the alleged human upgrading. Yet warnings, such as the *Economist's* critique of Bostrom's *Superintelligence*, are dropped into the void by a humanity that seems unaware of the metaphysical background of technology and the implications of its side-effects, investing its complacency in the supposed ability of science to solve the issue. At the same time, certain experts – supported by the relevant companies– are advocating that references to the risks should be avoided for the possible danger of underfunding, at a time when programs and software are being offered in abundance, without the slightest social accountability.

Socio-political and economic problems, such as the creation of an ever-increasing useless class of people in the 21st century, pale in comparison with the risk of the liberal democratic values' collapse, from the elimination of privacy to the dominance of genetic engineering and the over-concentration of all personal data in the "invisible" hands of the market. The replacement of free will by electro-chemical brain processes and the total elimination of privacy, which is gradually taking place, will inevitably lead to personal and social determinism. This reality leads Harari to pose the question about the meaning of, for example, political choice, when it expresses a deterministic biochemical process of the brain or when it can be accurately captured, prior to its expression by the human subject, by data-holding companies. In such a rather grim reality, important thinkers, such as Fukuyama or Habermas, look for a *Punctum Archimedis* in the revaluation of nature, the Christian «*κατ' εἰκόνα*» or Kantian *Ethics*, while the only solution in the eyes of the totally secularized will to power appears to be human upgrading.

15. For example, Ray Kurzweil has been widely criticized in almost all of his views. He has been accused that his books are delightful readings of dubious science, that the law of exponential growth of technologies is wrong, that collecting data about the brain is one thing and understanding its function is another. Religious influences of an apocalyptic character have been traced in his claim for the prevalence of knowledge over ignorance or the need to overcome every human imperfection. Hegel's influence on Kurzweil echoes the secularization of Christian forms, while his "eschatology" has been compared to that of Pierre Teilhard de Chardin. See Th. Tasis, *op.cit*., pp. 280-281.

An Attempt at a Philosophical and Theological Evaluation

The channeling of scientific knowledge and the technological possibilities it produces in the direction of transcending the natural limits, even of the human species itself, is neither automatic nor novel. It is an outcome of the path that the Western European thought have been consistently following, from the Early Modern Times onwards, which cannot be presented here exhaustively – a path that has led to the transhumanist demand to transcending the limitations of physical reality. In what follows, we will briefly attempt to identify the most important, at least in our judgment, theological and philosophical dimensions of the transhumanist project, which will allow us to finally compare it with Christian anthropology.

a) Transhumanism is the final outcome of a fully secularized modernity. Of course, this observation does not apply to all the manifestations of modernity, nor does it intend to nullify some of its positive contributions. The evaluation of modernity, which is completely impossible within the narrow confines of the present paper, is a "work in progress", in which many positive developments are recorded. The recognition of democracy, the affirmation of reason, the defense of the human rights, the deconstruction of superstition, the commitment to freedom and political liberalism are perhaps the most prominent of these. Even at the level of dealing with religion, and Christianity in particular, the liberation of faith from pre-modern social and political commitments highlighted its authenticity[16].

Nevertheless, prominent personalities of Modernity have been concerned, early on, about the scientific evolution's potential to transcend physical reality, and many times their positions can be considered prophetic. From Bacon's scientific optimism, Condorcet's unlimited extension of human life expected as a direct consequence of scientific development[17], Diderot's

16. For the ongoing dialogue between Christianity and Modernity, see P. Kalaitzidis and N. Ntontos (eds.), *Ὀρθοδοξία καὶ Νεωτερικότητα*, Indiktos Publications, Athens 2007.
17. See K. Löwith, *Τὸ νόημα τῆς Ἱστορίας*, transl. M. Markidis and G. Lykiardopoulos, Gnosi Publications, Athens 1985, pp. 145-146.

understanding of consciousness as the brain's exclusive product[18], to Nietzsche's superman, we could trace the continuous trajectory of modern thought regarding the domination of man over nature and the creation of a technocratic civilization. Even deconstructive postmodernity, despite its merciless criticism of the reason's omnipotence and the scientism's dominance, will not hesitate to ascertain the death of man[19]. More than three centuries of humanistic dominance in history have consolidated in the collective consciousness the priority of human happiness and the demand for perpetual human development at all risks. Still, such an attitude also contains the seeds of its collapse when risky impertinence is confronted with human ontology itself.

Consequently, the nature's progressive disenchantment, instrumentalization, and quantification with the help of the natural sciences, the critique of Christianity and its gradual marginalization, the emergence of the Cartesian subject with a desire to exert its domination over natural but also social reality, etc. contributed decisively to the quality, direction and objectives of technological development[20]. On the other hand, the postmodern critique of modernity quickly led to the relativization of meaning, to a pervasive nihilism and an extreme subjectivism. The emergence of man as the supreme source of meaning, the neutral view of nature offered to human domination according to Descartes, the Nietzschean will to power expressed as boundless self-realization, with the simultaneous complete metaphysical devaluation of man, remain dominant precepts and quite logically lead to the need for transcending the nature of the self-trapped "man".

18. G. Dvorsky, *Revisiting the Proto-transhumanists: Diderot and Condorcet*, https://ieet.org/index.php/IEET2/more/dvorsky20101111 [10/03/2014].

19. See, for example: M. Foucault, *Les mots et les Choses*, Gallimard, Paris 1966 and J. Derrida, "The Ends of Man", in: *Margins of Philosophy*, transl. Al. Bass, The University of Chicago Press, Chicago 1982, pp. 111-136.

20. From the voluminous relevant literature we refer, instead of many other publications, to the prophetic study of Spyridon Kyriazopoulos, *Ἡ καταγωγὴ τοῦ τεχνικοῦ πνεύματος*, Athens 1965 and Peter Harrison's extremely interesting book, *Ἡ πτώση καὶ ἡ ἀνάδυση τῆς ἐπιστήμης*, transl. K. Takis, Ropi Publications, Thessaloniki 2016.

b) The contemporary instrumentalization of the natural world conceals the latter's understanding as an object, with human nature itself being the final barrier. As a product of modern deconstruction, man is nothing more than a living organism (animal), a biological algorithm (much more complex than the technical ones, but an algorithm nonetheless), at a transitional stage of the evolutionary process. For the evolutionary epistemology, as it is expressed by the relevant sciences (biology, neurosciences, etc.), there is no concept of soul or consciousness that goes beyond human biology, which would lead to an unforgivable dualism for our time[21]. Human emotions, will and freedom are treated algorithmically[22], while death itself is no more than a technical problem, which every effort is made to ensure that it will eventually be solved. Humans die not because of the mutability of our created nature, nor because some primordial, human choice (original sin) solidified in our creation death as a choice to break our relationship with God. We humans die because of a technical failure[23]. In mature (second) modernity, humanism, from being a supreme source of meaning, ends up to becoming an ideological construct for legitimizing relations of domination, while the distinction between man and animal or machine is considered to be fluid.

Fukuyama will try in vain to express his anguish about what it means to be human. Is it only an evolutionary process of centuries, in which no one can find any constant feature due to constant change? Does no human species or no human "being" exist, and, if it does exist, does it not necessarily represent truth and justice[24]? In this context, this thinker will propose the recognition of human nature, man's humanness, as a source

21. For these issues, see, among many others, the following: Fr. Crick, *Μιὰ ἐκπληκτικὴ ὑπόθεση. Ἡ ἐπιστημονικὴ ἀναζήτηση τῆς ψυχῆς*, Dr. Nikolinakos, G. Mamalis, D. Malamis (eds.), transl. K. Korfiatis, Katoptro Publications, Athens 1997; G. Edelman and G. Tonori, *Τὸ σύμπαν τῆς συνείδησης*, N. Tavernakis (ed.), transl. Vasiliki Vakali, Crete University Press, Herakleion 2008; P. Churchland, *Ὑλικὴ ὑπόσταση καὶ συνείδηση*, transl. Katerina Kosma, Parisianos Publications, Athens 2010.

22. There has been considerable concern about animal emotions as biochemical data processing algorithms and their relation to human emotions; see J. Gregg, *Are Dolphins Really Smart? The Mammal behind the Myth*, Oxford University Press, Oxford, U.K. 2013, pp. 82-83.

23. Y. N. Harari, *op.cit.*, pp. 19-20.

24. Fr. Fukuyama, *op.cit.*, p. 24.

of values, surpassing cultural or other differences[25], and will emphasize the relationship of nature to liberal democracy and human rights, and even to ethics[26]. Fukuyama recognizes that human nature does not dictate a complete and precise list of rights. In fact, it often displays desires and aspirations that run counter to the common good, such as violence. It interacts with the wider physical and technical environment and is malleable. Still, human nature constitutes an insurmountable limit that defines our humanity, establishes our fundamental psycho-spiritual traits and leads us to the realization of human society and the conquest of the political order that is capable of discrediting forms of political tyranny or violence as fundamentally inhuman[27].

Following the same train of thought, Habermas considers eugenics as humanity's and civilization's greatest threat. He raises questions of solidarity, responsibility and respect arising from the choices that have been made on the part of science for the natural man to be transcended, and reflects on the abandonment of scientific and technological potentialities in the hands of the relentless market laws[28]. For Habermas, human nature's instrumentalization and "technicization", resulting from centuries of the technical spirit's dominance, urgently needs ethics – even more so today, when technoscience has systematically deconstructed the nature of the world and of man. In this context, he even puts on the table the nature's "re-enchantment" as an attempt for the latter's re-moralization[29], in order

25. Fr. Fukuyama, *op.cit.*, p. 30.
26. Fr. Fukuyama, *op.cit.*, p. 190.
27. Fr. Fukuyama, *op.*cit., p. 228. Fukuyama insists that, apart from man's hereditary and acquired characteristics, there is an essential core, which he calls the "factor X", determined by the potentialities and dimensions of human biology; in its turn, this defines the stable and perennial human features. These characteristics are expressed in history and create cultural formations, without being identified with them. Such characteristics could be reason, language, emotion, the moral dimension of man, art, the necessity of religion, etc.
28. J. Habermas, *Die Zukunft der menschlichen Natur. Auf dem Weg zu einer liberalen Eugenik?*, Suhrkamp, Frankfurt 2001, pp. 37-39, as it has been quoted in: Th. Tasis, *op.cit.*, p. 333.
29. J. Habermas, *op.cit.*, pp. 48-49. Th. Tasis (*op.cit.*, p. 334) argues about Habermas's misinterpretation at this point, while H. Kissinger, E. Schmidt, D. Huttenlocher, *op.cit.*, pp. 261-262, they speak of a different kind of the world's re-enchantment through a submission to the prophetic decisions of the AI, which conceal a divine capacity for a

to put a brake on the late modernity's disruptive tendencies. Nevertheless, according to the opinion of all experts, the frenzy of technological messianism, seems irreversible.

c) The transhumanist movement clearly bears the features of a secularized religion. This observation does not at all imply the elevation of man to the status of a deity, even according to the terms of a secularized understanding of deity, in keeping with our times. It means the replacement of man by the transhuman as a being with divine characteristics, a Man-God. From eugenics, cryogenics, computer brain interaction experiments, the uploading of the human mind (and for some, consciousness) into *bits*, to the substitution –and then the replacement– of human functions and organs with nano-machines, the goal is the radical prolongation of life, until the conquest of immortality by the post-biological "man". The Christian background of such an effort, even if it is wearing a secularized garment, remains obvious.

As specialists point out, the "ideological function of techno-religion"[30] appears to be contradictory, despite delineating transhumanists as rational atheists or agnostics and defending the scientific nature of their positions, and refers to magic and alchemy[31]. For Theophanis Tasis, it is the result of our virtual society and the subject's need for visibility

"secret" understanding of the world and its possibilities, beyond human knowledge and perception.

30. Th. Tasis, *op.cit*., p. 37. The emergence of religious characteristics in technological sciences has been observed, among others, by Harari. He distinguishes them into two characteristic types: *techno-humanism* and *data religion* (*Dataism*, from data). The former corresponds to super-humanism, which presents the improved human being as the metaphysical and religious archetype of an immortal techno-human. The second (*Dataism*) corresponds to the movement of technical transhumanism, which is indifferent to the human species, worshipping the accumulation, processing and free circulation of data as the unique, metaphysical capacity for omniscience and omnipotence. For *Dataism*, every word, action, information, even thought, or emotion, is a part of the great stream of data, the great cosmic plan, the total knowledge of which will lead to its decipherment and the domination of the post-biological being, turning the knower of this plan into the cosmic master of everything, with obvious divine characteristics. See Y. N. Harari, *op.cit*., pp. 337-338, 371-372.

31. J. P. Farell and Sc. D. de Hart, *Transhumanism: A Grimoire of Alchemical Agendas*, Feral House, Port Townsend, WA 2011.

and recognition[32]. It has been observed, particularly in Kurzweil's work, similar phraseology to some contemporary Christian currents, while the association of transhumanism with Hegelian thought and the positions and views of Teilhard de Chardin suggest the metaphysical dimensions of the movement[33]. For the well-known transhumanists Fuller and Lipińska, man's theomorphism –with his confidence in knowledge and the affirmation of the new–, is the only one capable of recognizing, in spite of the scientific establishment, the universe's intelligent design. This knowledge will enable imitatio Dei as the ability to "enter into the mind of God", assuming divinity, which directly refers to the original sin[34].

Moreover, metaphysical noology, the quintessence of the transhumanist worldview, leads to a soteriological conception of history, according to which the scientific evolution and improvement of man has the metaphysical goal of eliminating suffering, misery and death, regardless of whether human biology is rescued or not. It is worth noting, and has been noted by experts, that the metaphysical idealistic view of the intelligence constitutes the theoretical background of this endeavor. Nowadays, a noology, an immortality of intelligence, capable of perpetuating itself even in conditions of universal collapse, is being propagated, inspired by the *Theophysics* of the well-known physicist Frank Tipler, the devaluation of nature and the suffocating sense of material reality. Such a conception is not far from a (neo) manichaeism and (neo-) gnosticism, even if it is wrapped within a techno-scientific cloak.

Finally, the transhumanist worldview as a Godless religion meets its religious parallel in Buddhist and Shinto spirituality. The search for a "technological spirituality", incorporating Buddhist and Shinto elements, has triggered a whole debate on the spirituality or ethics of AI and the transhuman, but also on the interplay of all these, possibly even some kind of fusion with traditional religions. This debate, reflected in

32. Th. Tasis, *Ψηφιακὸς ἀνθρωπισμός: Εἰκονιστικὸ ὑποκείμενο καὶ τεχνητὴ νοημοσύνη*, Harmos Publications, Athens 2019, pp. 31-42.
33. R. Geraci, "Apocalyptic AI: Religion and the Promise of Artificial Intelligence", *Journal of American Academy of Religion* 76, 1 (March 2008), pp. 138-166.
34. St. Fuller and Veronika Lipińska, *The Proactionary Imperative: A foundation for Transhumanism*, Palgrave MacMillan, London 2014, pp. 45-46.

a voluminous literature, does not exclude the Christian religion, offering to the science of theology a new, rich field of anthropological reflection in the 21st century[35].

d) The "*new anthropology*" of transhumanism foreshadows the possibility of a techno-integration. Both the AI General-Purpose Technology, which requires ever greater accumulation of information (*Big Data*) and the abolition of privacy, as well as transhumanism with its gene and nanotechnological interventions, could well evolve into totalitarian practices – much more so as long as they remain in the hands of the market without social control or feed the insatiable desire of superpowers for economic and geostrategic supremacy. Nowadays, the control of human behavior far surpasses the level of psychology and reaches the ontological level.

At this point, the essential concern is whether this conservative attitude vis-à-vis technology is, at the very least, an initial stage of a technophobic syndrome, with significant socio-political implications, supported by scenarios of cosmic catastrophe and feeding a conspiratorial attitude in a large part of global society.

Undoubtedly, such a danger is possible, perhaps even visible, based on the effort to serve various interests, in alliance with the targeted information or misinformation of the societies. For this reason, sound knowledge and sober reflection are vital requirements. However, the opposite risk is just as likely, and quite visible, for which one could even argue that there is considerable evidence, some of which has already been pointed out in our paper, most of it expressed by the experts themselves[36]. In any case, the solution to this is neither religious radicalism or fundamentalism, nor social complacency or a kind of Christian anti-fundamentalist bliss. We are definitely confronted with these issues, and the wisest choice for us is to seeking for their solution before becoming insurmountable obstacles.

35. St. Garner, "Transhumanism and Christian Social Concern", *Journal of Evolution and Technology* 14, 2 (August 2005), pp. 29-43. For more information regarding the other religions, see Th. Tasis, *Ἡ φιλοσοφία τῆς ἀνθρώπινης ἀναβάθμισης*, *op.cit*., pp. 281-285, where one can also find the relevant literature.

36. St. Russell, *op. cit*., pp. 213-214, mentions leading AI researchers who are concerned and trying to raise awareness of the risks, noting that, today, the list of concerned experts is much longer.

The questioning of the freedom of the will with the consequent subordination of man to algorithmic slavery undoubtedly constitutes a visible danger of the application of new technologies. At the same time, Western civilization is based on the freedom of will, individual freedom, which is the basis of political liberalism and human rights. However, beyond the secular view that science is founded on and defends human freedom, the contemporary scientific avant-garde, proudly divorced from any religious and metaphysical reference, considers every human choice and action to be the result of the brain's electrochemical processes. Geneticists, molecular biologists, and neuroscientists exhaust the "apparent" human freedom in the "space" defined between determinism and randomness, and understand desire and emotion as nothing else but biological algorithms. Experiments of anticipatory prediction of desires with brain scanners[37] or the two hemispheres experiment to show the non-unified self[38] attempt to prove these scientific preconceptions.

The last obstacle is the indeterminacy of consciousness and the existence of reflective self-consciousness, despite the attempts to deconstructing or downloading it in digital form[39]. According to experts, no substantial progress has been made on this subject since Alan Turing first raised the issue in 1947[40]. We know that trillions of biochemical reactions and electrical signals are passing through more than 80 billion neurons in the brain, creating numerous, complex networks, yet we have the slightest idea how this ocean of electrochemical activity is transformed into grief, anger, love, desire, imagination, forgiveness, self-sacrifice, not to say that we ignore how the reflective subject and self-consciousness, the ego and self, is formed, with the capacity to judge our behavior, set goals and determine the unity and orientation of our being. The riddle is culminated by the

37. See, among many others D. M. Wegner, *The Illusion of Conscious Will*, The MIT Press, Cambridge MA 2002. Cf. C. S. Soon (et al.), "Unconscious Determinants of Free Decisions of Human Brain", *Nature Neuroscience* 11, 5 (2008), pp. 543-545.
38. St. Russell, *op.cit*., pp. 322-324; J. Le Doux, D. Wilson, M. Gazzaniga, "A divided mind: Observations on the conscious properties of the separated hemispheres", *Annals of Neurology* 2, 5 (1977), pp. 417-421.
39. For this issue, see Th. Tasis's thorough analysis in, *op.cit*., pp. 250-265, where one can also find the relevant bibliography.
40. St. Russell, *op.cit*., p. 35.

experts' puzzlement of what the evolutionary benefit of such a phenomenon might be, when AI performs impeccably in the absence of consciousness[41].

The Anthropology of Man Created *in the Image* of God and the Problem of Transhumanism

Obviously, all the above constitute extremely important challenges to Theology, highlighting the latter and ecclesiastical pastoralism's crucial role, in order to avoid the worst scenario being confirmed. We argue that, far from adopting technophobic syndromes, theological discourse must reflect soberly on the possible theological perceptions of the "transhuman", and more particularly on the preservation or not of *in God's image* as an element of profound ontological freedom that overcomes the relevant socio-political or psychological dimension of the freedom of will without nullifying it, while at the same time transcends its possible genic religious substratum.

The theological questions raised by the science's efforts to build the future man are many and crucial. Can the "scientific" conception of man –as an exclusively biological being– find theological and ecclesiastical legitimate grounds? What salvific perspective can we recognize in man, when we reduce him to his biology alone? Undoubtedly, in our modern and post-modern age, when the relevant sciences have demonstrated the intimate relationship between psycho-mental functions and the brain (thinking, judgement, emotions), we cannot speak of the soul in pre-modern terms. Still, can we reject the soul's existence –or whatever we call this anthropological factor– or its understanding in terms of post-mortem survival? What is the relation of the soul to the substance or the person? What is the relation of the soul to the theology of the human being created *in the image of God*, as the theology of the Church understands and interprets this biblical expression?

41. Y. N. Harari, *op.cit.*, pp. 104-106.

Needless to say, these questions –as so many others– cannot be addressed in detail in the narrow context of the present paper. Therefore, we shall content ourselves with a few remarks on the theology of the *in the image*, since we believe that this represents the core of the Christian anthropology, the theological field that will be the main concern of 21st century theology[42].

First of all, we should note *the apophatic understanding of in the image of God*. Despite the fact that, for the majority of the Church Fathers and their hermeneutics, the latter's content is taken to be the rational and the free-will, patristic thought refuses to reduce it to a specific locus. This means that God cannot be fully represented by any human (created) attribute. For this reason, as Kallistos Ware observes, while *in the image* is taken for granted, neither the Scriptures nor the Nicene-Constantinopolitan Creed or the Ecumenical Councils specify "the exact nature of the inhabited image"[43]. Thus, Gregory of Nyssa observes that, just as the divine nature is apophatic and unperceived, the same goes for the human one – («*ἀθεώρητος ἡ τοῦ ἀνθρώπου φύσις*»)[44], while Epiphanius of Salamis, after affirming the belief in the creation of man *in God's image*, will prevent further search for its specific location, attributing this knowledge exclusively to God[45].

Patristic thought exhibits the same apophaticism when it is called upon to define the soul's essential content. Despite the common use of idealistic terms to describe the soul (*ἁπλῆ, ἀσώματη, ἀειδής, ἀθάνατη*), the essence of the soul itself remains apophatic. This apophaticism comes to complement the anti-Platonic, Christian view of the soul. The soul is created, by nature mortal, and in its essence unknowable. "How can I speak of God", asks Cyril of Jerusalem, "when, while having a soul,

42. The field of anthropology as a privileged theological field of the 21st century was prophetically pointed out by the late Metropolitan Kallistos Ware of Diokleia, in: *Ἡ Ὀρθόδοξη Θεολογία στὸν 21ο αἰῶνα*, transl. N. Ntontos, Indiktos Publications, Athens 2005, p. 25.

43. Metropolitan of Diokleia Kallistos Ware, *Ἐχθροὶ ἢ φίλοι; Τὸ σῶμα, ἡ ψυχὴ καὶ τὰ πάθη τοῦ ἀνθρώπου*, transl. Polyxeni Tsaliki-Kiosoglou, En Plo Publications, Athens [2]2015, pp. 40-41.

44. Gregory of Nyssa, *Περὶ κατασκευῆς ἀνθρώπου*, PG 44, 153D, espec. 156A-B.

45. Epiphanios of Salamis, *Πανάριον*, 70, PG 42, 344B.

I cannot explain its characteristics?"[46]. In the same line of thought, John Chrysostom will wonder about the nature of the soul and, having excluded any essential definition of it from created elements («*ἀήρ, πνεῦμα, ἄνεμος, πῦρ*»), will accept it apophatically[47].

In addition, the very existence of Christ, the Incarnation, the sacrifice on the Cross, and above all the event of the Resurrection and the Ascension of the human clay and its enthronement in the life of the Trinity, are forcing for the body to be included in the reality of *κατ' εἰκόνα* and, in this way, the attribution of the image of God to man in his totality[48].

In any case, the apophatic understanding of *in the image* and the soul's very nature, although it can be interpreted in various ways, certainly does not embed it in human biology. Without exception, for patristic literature the soul, even if it has been created and is mortal by nature, remains distinct from the body, though part of the one human nature, and immortal by grace (*«κατ' εἰκόνα»)*, while characterizes man's psychosomatic totality, is primarily expressed by his higher psychic features and not by his biological ones.

At this point, a more specific observation is necessary: For the patristic literature, man is made *in the image of the Word*, the only natural image of God the Father; therefore, he constitutes an "icon of an icon". We can find this doctrine in Ireneus, Clement, Origen, Athanasius, Gregory of Nyssa, John Chrysostom, etc. and is of particular importance in supporting the divinity of the Word during the period of the Arian controversy. This patristic position reinforces man's Christological structure[49], which is located, according to the patristic teaching, in the privileged infusion of the God's Spirit into man. Thus, it is the life-giving energy of the Holy Spirit that forms the image of God the Word in man, in a dynamic process, which remained unfinished due to the Fall[50].

46. Cyril of Jerusalem, *Κατηχήσεις* 6, 6, PG 33, 548B.
47. John Chrysostom, *Περὶ Ἀκαταλήπτου. Πρὸς Ἀνομίους*, V, 4, PG 48, 740.
48. Among many others, see Irenaeus of Lyon, *Ἔλεγχος καὶ ἀνατροπὴ τῆς ψευδωνύμου γνώσεως*, Ε΄, VI, I, introd. – transl. – comm. Irenaeos Chatziefraimidis (archim.), Thessaloniki 1991, pp. 369-370.
49. See P. Nellas's thorough exposition of this formulation: *Ζῶον θεούμενον. Προοπτικὲς γιὰ μιὰ ὀρθόδοξη κατανόηση τοῦ ἀνθρώπου*, Synaxi Publications, Athens 1981, p. 24 et seq.
50. Based on Irenaeus, Fr. John Romanides thoroughly analysis this position in: *Τὸ*

The catalytic event of the original sin raises some issues regarding the theological discourse on this matter. The denial of the Holy Spirit's grace and the completion of man's chrismation due to the Fall was to completely obliterate God's image in man. Still, this contradicts the Scripture's teachings, the ecclesiastical and patristic tradition. For this reason, patristic thought, in its progressive unfolding, has distinguished the «*κατ' εἰκόνα*» from «*καθ' ὁμοίωσιν*», (*in the image* from the *in the likeness*), although this is not Scripturally attested. Fathers of the Church and ecclesiastical writers, from Ireneus, Origen, Basil the Great and Gregory of Nyssa to Maximus the Confessor and John Damascene, having distinguished *in the image* from *in the likeness*, ensured the persistence of the image of God in man, even if the latter is marred, and ensured the ineradicability of *in the image*[51]. In this way, the «*κατ' εἰκόνα*» is inscribed in man's ontological structure and constitutes an ontological fact; it is not defined as a result of the relationship with God, nor does it reflect man's eschatological perspective. All this is ascribed to the dynamic extension of the «*κατ' εἰκόνα*», which is the «*καθ' ὁμοίωσιν*». Consequently, by attempting to render the tainted, post Fall, *in the image* in modern terms, we would understand it as the *preconditions of human ontology* for *the reception of grace*, which we can condense in the reality of the *conscious subject*, its *rational constitution* and *free-willingness / freedom*. Based on the above, we could argue that, in the patristic literature, the content of the post-Fall *in the image* is attributed in a privileged way as man's *rational free-willingness* and *reflection*. The textual testimonies remain revealing, even for the pro-apophatic writers. John Damascene, for example, wishing to express the indeterminacy and apophaticism of *in the image*, will ask: "In how many ways can we express the notion of the «*κατ' εἰκόνα?*»" In his answer, that follows

προπατορικὸν ἁμάρτημα, Domos Publications, Athens [2]1989, p. 114 et seq.

51. The observations of the two Cappadocian brothers are among the most eloquent and clear: Basil of Caesarea, *Περὶ τῆς τοῦ ἀνθρώπου κατασκευῆς*, 20, PG 30, 29d: «*Τὸ μὲν γὰρ κατ' εἰκόνα φύσει δέδοται ἡμῖν καὶ ἀμετάβλητον ἐξ ἀρχῆς καὶ εἰς τέλος συμπάρεστι, τὸ δὲ καθ' ὁμοίωσιν ἐκ προαιρέσεως καὶ οἴκοθεν ὕστερον κατορθοῦμεν*», and Gregory of Nyssa, *Εἰς τὸ ποιήσωμεν ἄνθρωπον*, PG 44, 273a: «*Ποιήσωμεν ἄνθρωπον κατ' εἰκόνα ἡμετέρα καὶ καθ' ὁμοίωσιν. Τὸ μὲν ἐν τῇ κτίσει ἔχομεν, τὸ δὲ ἐκ προαιρέσως κατορθοῦμεν*».

immediately after, all of his designations describe the human being's eloquent free-willingness and reflexivity: «*Κατὰ τὸ λογικὸν καὶ νοερὸν καὶ αὐτεξούσιον, κατὰ τὸ γεννᾶν τὸν νοῦν λόγον καὶ προβάλλειν πνεῦμα, κατὰ τὸ ἀρχικόν...*»[52]. In another context, where he distinguishes κατ' εἰκόνα from καθ' ὁμοίωσιν, he argues: «*τὸ κατ' εἰκόνα τὸ νοερὸν δηλοῖ καὶ τὸ αὐτεξούσιον, τὸ δὲ καθ' ὁμοίωσιν τὴν τῆς ἀρετῆς κατὰ τὸ δυνατὸν ὁμοίωσιν*»[53]. Even more vividly, Maximus the Confessor points out that, if the free will collapses, then, man as a psychosomatic entity also collapses[54]. Moreover, free-willingness involves numerous soteriological dimensions encoded in the Virgin Mary's acquiescence for the realization of the soteriological economy, as well as in the relevant saying by Maximos: «*Βουλομένων γάρ, οὐ τυραννουμένων τὸ τῆς σωτηρίας μυστήριον*»[55]. Consequently, the importance that the patristic thought ascribes on rationality and free will as the content of the «*κατ' εἰκόνα*» is both justified and understandable.

Assessing the above from the perspective of contemporary technological challenges, we have to observe the following: in understanding every human being, regardless of age, gender, religion, even religious or non-religious belief, as an image of God, Christian anthropology attributes to it, in a post-Fall context, the ontological qualities of *rational free-willingness* and *reflection*. These features, while defining the whole of the human psychosomatic entity, are neither determined nor confined by human biology.

In addition to that, the ascetic practice of "the descent of the mind into the heart" not only reveals the unity of the material and spiritual element in man, but also a kind of «*πλείονος ἀνθρωπίνου εἶναι*» – an *expansion* (according to Gregory of Nyssa), of man *in the image* of God the Word, beyond the limits of the flesh as a fallen biology; it is an ontological expansion, not an existential or psychological one.

52. John Damascene, *Περὶ τῶν ἐν Χριστῷ δύο θελημάτων*, 30, PG 95, 168B.
53. John Damascene, *Ἔκδοσις ἀκριβὴς τῆς Ὀρθοδόξου πίστεως*, text – transl. – introd. – comm. N. Matsoukas, P. Pournaras Publications, Thessaloniki 1976, p. 150.
54. «*Ἄνελε γὰρ ἡμῶν τὸ αὐτεξούσιον, καὶ οὔτε εἰκὼν Θεοῦ ἐσόμεθα, οὔτε ψυχὴ λογικὴ καὶ νοερά, καὶ τῷ ὄντι φθαρήσεται ἡ φύσις, οὐκ οὖσα ὅπερ ἔδει αὐτὴν εἶναι*», Maximus the Confessor, *Σχόλια εἰς τὰ Ἁγίου Διονυσίου Ἀρεοπαγίτου*, PG 4, 308A.
55. Maximus the Confessor, *Εἰς τὴν προσευχὴν τοῦ Πάτερ ἡμῶν*, PG 90, 880D.

The biblical origins of the term "heart" meet the patristic hermeneutic, especially in the Pseudo-Macarian texts and St. Gregory Palamas[56]. In the context of this hermeneutic, the *heart* is the point of convergence of soul and body, but also the field of encounter between both man and his inner self and God. In this sense, Gregory Palamas accepts it as a «*ταμεῖον τοῦ λογιστικοῦ*», able to connect the mind with the body, both in the act of prayer and in the reception of grace[57]. Hence, by adopting and extending, on this point, a similar point made by the late Kallistos Ware, we argue that the anthropological element of «*βαθεία καρδία*», as it is reflected in the ascetic literature, can be paralleled or identified not only with the «*κατ' εἰκόνα*» but also with the modern subject, the ego or the conscious self[58].

In view of all the above, we are critically and cautiously approaching the newer theological interpretations, which move between the sophisticated materiality of the soul and mortal psychism. These are novel views, exceptionally weak in Christian tradition and literature, inspired nowadays by the need –or even the insecurity– of being in tune with the scientific spirit of the age. In the novel demands that technology poses for the 21st century, we must finally break free from the theological anxiety of being accused as Christian Platonists, by accepting a spiritual anthropological core, –*in the image* and the soul–, without, of course, indulging in an Evagrian-like noology, which forgets the need for the salvation of the psychosomatic man and, through him, of all creation. Despite the fact

56. This is not the place to discuss whether the patristic concept of "heart" has been influenced –and to what degree– by the stoic one. For a first approach to this question, see Ant. Guillaumont, «Le sens des noms du Coeur dans l'antiquité», *Le Coeur*, *Études Carmellitaines* 29 (Paris 1950), pp. 41-81.

57. Gregory Palamas, *Ὑπὲρ τῶν Ἱερῶς Ἡσυχαζόντων*, *Τριὰς Α΄*, 2, 3, in: fr. Io. S. Romanidis (ed.), *Ρωμαῖοι ἢ Ρωμηοὶ Πατέρες τῆς Ἐκκλησίας*, P. Pournaras Publications, Thessaloniki 1984, p. 288: «*Οὐκοῦν ἡ καρδία ἡμῶν ἐστι τὸ τοῦ λογιστικοῦ ταμεῖον καὶ πρῶτον σαρκικὸν ὄργανον λογιστικόν*».

58. Kallistos Ware paralleled the concept of the heart with both Augustine's *memoria*, as expressed in Book 10 of the *Confessions*, and the concept of the Self, as presented by Carl Jung. He characterized *memoria* as an *aula ingens* –following Henry Chadwick's interpretation– which entertains the whole man and the world, while he saw in the Jungian self the modern unconscious, which can be paralleled with the "deep heart", (Metrop. of Diokleia Kallistos Ware, *op.cit*., pp. 59-61).

that, in modern times and after the discoveries of the relevant sciences, it is impossible to speak of the soul in ancient Greek terms or in terms of the 4th century AD, the understanding of the biblical and patristic «*κατ' εἰκόνα*» as the anthropological term which, tarnished but ineradicable, transcends the fallen biology of the flesh, acts as the safeguard against the threat of techno-determinism.

In conclusion, let us point out that with the present paper we are trying to promote the dialogue between Christian anthropology and the *radical human upgrading*. In this perspective, we tend to argue that Christian anthropology still recognizes in the "upgraded" human being an ontological core, which, while it is deficient, incomplete, and dysfunctional without its biological substrate, is at the same time not fully reducible to it. Such an anthropological core, which is identified with *in the image*, can remain impervious to algorithmic slavery and the possible oppressive interventions of biotechnology in the human condition. Otherwise, we should accept an anthropology without the eschatological perspective of deification; a Christian anthropology without freedom, in which human, scientific intervention will be able to impose on humanity the most decisive (existential) choices and fundamental goals. This multifaceted and demanding dialogue, bypassing prejudices and technophobic syndromes, is called upon to bring forth an anthropology inclusive of the grace of the Holy Spirit, which, through the sacraments and life in Christ, sanctifies man in its totality, even in his innermost psycho-biological dimensions, as they are revealed in the sciences of molecular biology and neuroscience.

At the risk of all the above constituting naive optimism or religious triumphalism, which ignores the dangers of the threatening techno-nature, what we urgently need is the intervention of a theological discourse, capable of proposing in the language of our futuristic age the tradition of biological transcendence, which is the martyrdom and the ascetic and Eucharistic dimension of freedom. Above all, however, theological discourse must inspire and make the experience of renewal in Christ and deification the concern of the ecclesial body's conscience as a response to the nihilistic tendencies of the emerging postmodernity.

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