REVIEW

for the dissertation of
Sechil Yuzergan
on the topic:

IN THE SEARCH OF A POSTHUMAN ERA
A CRITIQUE ON MERGING HUMAN BIOLOGY WITH ARTIFICIAL INTELLIGENCE

Supervisor: Prof. Veselin Dafov

proposed for the award of the educational and scientific degree
"Doctor of Philosophy",

prepared by
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The text comprises 208 pages and consists of an Introduction (3 pages), 5 chapters (180 pages), a Conclusion (3 pages) and an extensive structured Bibliography (8 pages). The text is written in excellent English, in a very good and mature academic style, critically analyzes a significant volume of state of the art literature on all the research directions of the thesis and demonstrates that the doctoral candidate is deeply familiar with the domains of the thesis.

The dissertation of doctoral candidate Sechil Yuzergan delves into the profound impact of digital technologies on our daily lives, positing that these advancements signal the advent of a new era. Central to this exploration is the role of *artificial intelligence* (AI) and its integration into human biology through brain-computer-interface (BCI) technologies. The research investigates the philosophical implications of human enhancement in this context and examines the evolving relationship between technology and the human experience.

The Research follows the following several directions:

(1)The Impact of Contemporary Technologies: The main focus of the thesis in this direction is on the transformative effects of modern technologies, especially considering the Fourth and Fifth Industrial Revolutions. The study examines the global digitalisation and its effects on concepts of space, time, reality, and personal and interpersonal experiences.

(2) *Questioning the related Ontological Changes*: The research critically evaluates the hypothesis that the emerging technologies are actually altering our ontological state, following a theory arguably supported by numerous intellectuals.

(3) *Technology and the Human Condition*: A profound exploration of the relationship between technology and human beings, questioning whether technological progress can fundamentally reshape human nature. This technology is at the cross-point of Philosophy of Technology and Anthropology and by itself represents a very interesting approach, especially today, in the post Alpha- Deep Reinforcement learning AI models and the explosion of the Large Language Model ChatGPT by OpenAI.

(4) *Human Enhancement and Transhumanity*: The study explores the concept of human enhancement, particularly in the light of AI advancements, and debates whether such progress necessitates an accelerated evolution of humans through enhancement technologies.

(5) *Brain-Computer-Interface (BCI) Technologies*: Examination of the growth and relevance of BCI technologies in the discourse on merging human intelligence with AI, especially as a response to existential threats posed by AI. This direction of the thesis could cave hardly be more apt, given the first in history actual deployment of the Neuraling BCI, a couple of days before 31.01.2024 but still after the submission of the thesis for review. It needs to be stressed that the successful deployment of the Neuralink only supports the choice of this research direction.

(6) *Transhumanism*: An analysis of Transhumanism, its philosophical foundations, and its arguments about technology driving humanity towards a Transhuman or Posthuman future. This topic becomes increasingly acute, given the immense recent progress of robotics and AI models, such as the large language models.

(7) *Philosophy of Posthumanism*: Differentiating Posthumanism from Transhumanism, the research explores the critiques of Posthumanism against the technological enchantment of Transhumanism.

(8) *Critique of the Human Condition in the Digital Era*: Drawing from the philosophies of Martin Heidegger and Maurice Merleau-Ponty, the thesis critically explores what it means to be human in the age of digital technology, offering an alternative view to the transformational claims of digital technologies.

The Research Methodology of the dissertation employs a qualitative approach, incorporating literature reviews, conceptual analyses, and philosophical interpretations. The methodology is rooted in traditional philosophical methods dating back to Plato, focusing on conceptual analysis. The candidate analizes text of leading authors on AI as Floridi, Bostrom, Harari and others and demonstrates an impressive command of this interdisciplinary field, which regulates the topic of the thesis.

The main *Objectives* and aspired *Contributions* of the thesis aim to address the immediate and far-reaching impacts of technological developments on human existence. It productively criticizes the rapid advancement of technology, often labeled as a new Industrial Revolution, and seeks to clarify the nature and consequences of these technological revolutions. The research contributes significantly to the ongoing discourse on understanding and navigating the implications of new technologies for both present and future generations. It also aims to inspire further research in these critical areas.

Chapter 1 of the thesis explores the transformative impact of technological advancements, particularly focusing on digital technologies like artificial intelligence (AI) and their integration into our daily lives. The chapter begins by examining the current technological landscape, highlighting how devices like smartphones, AI assistants, and brain-computer interfaces (BCI) have become integral to our daily routines and self-perception. It discusses the evolving relationship between humans and technology, emphasizing the blurring boundaries between the physical, digital, and biological realms.

The candidate delves into historical perspectives, linking contemporary technological changes to the broader context of human evolution and the Industrial Revolutions. The Fourth Industrial Revolution (4IR) is presented as a pivotal shift towards "hyper-history," characterized by an unprecedented dependency on information and communication technologies. This revolution is seen as disrupting traditional structures and shaping a new era of human existence.

Yuzergan then introduces the concept of the *Fifth Industrial Revolution* (5IR), which focuses on enhancing human-machine collaboration. This revolution is posited as a response to the challenges and uncertainties brought about by rapid technological advancements, with an emphasis on harnessing technology for human benefit rather than being threatened by it.

The chapter concludes by contemplating the implications of these technological shifts on human identity and society. It raises critical questions about the nature of technology, the human condition, and the potential future trajectory towards transhumanity or posthumanity. The author emphasizes the importance of understanding and navigating these changes, acknowledging the profound impact they have on our conception of self and society.

In Chapter 2 of the thesis the candidate embarks on an exploration of the intricate relationship between technology and human beings. This chapter sets the conceptual groundwork for understanding how technology is not just an external tool but an intrinsic part of human evolution and identity. It begins by challenging the conventional perception of technology as merely a product of applied science. Yuzergan argues that this viewpoint is reductive and overlooks the broader implications of technology as an entity that shapes human thought, culture, and societal structures. By expanding the definition of technology beyond physical devices to include systems, processes, and methodologies, the author underscores its pervasive influence on every aspect of human life. One of the central themes here is the critique of the dominant role of technology in the modern society. Yuzergan reflects on how technological advancement, while bringing numerous benefits, also poses existential risks and ethical dilemmas. She delves into the ways technology redefines human relationships,

communication, and even our sense of self. This critique is not just about the tools themselves but about the systemic change they bring about in human life and society.

Another significant aspect of this chapter is the examination of Martin Heidegger's philosophy of technology. Yuzergan provides an insightful analysis of Heidegger's concepts of "Enframing" (Gestell) and "standing reserve" (Bestand), which argue that technology shapes the way humans interact with the world, turning everything into a resource to be used. This perspective offers a profound critique of the instrumental and utilitarian view of technology and the world. She explores how technology has evolved over time, from simple tools enhancing human physical capabilities to complex systems that extend and even replace cognitive functions. This historical perspective highlights the accelerating pace of technological advancement and its increasingly intertwined nature with human existence.

Yuzergan's exploration goes beyond the practical implications of technology, delving into its philosophical and existential dimensions. The chapter raises important questions about the future of humanity in an age where technological and biological boundaries are increasingly blurred. The candidate posits that understanding the essence and trajectory of technology is crucial in navigating the challenges and opportunities it presents. Here, Yuzergan provides a comprehensive and critical examination of technology's role in shaping human existence. By expanding the understanding of technology beyond its physical manifestations and exploring its philosophical underpinnings she sets the stage for further discussions on the future of humanity in a technologically advanced world. The chapter serves as a foundation for the subsequent exploration of the possibilities and perils of human enhancement and the potential emergence of a post-human era.

In Chapter 3 of the thesis the candidate presents a comprehensive exploration of the concept of human enhancement in the age of advanced technology and biomedicine. This chapter delves into the historical context of human enhancement, tracing the evolution of this idea from ancient mythologies and philosophies to contemporary scientific practices. Yuzergan provides a nuanced discussion on the ethical, social, and philosophical implications of human enhancements, which range from genetic modifications to cognitive enhancers.

A significant part of the chapter is dedicated to the debate between bio-conservatives and bio-liberals. Bio-conservatives argue for the preservation of natural human capabilities and warn against the risks of unregulated enhancement practices. In contrast, bio-liberals advocate for the progressive use of technology to transcend human limitations, emphasizing individual autonomy and the potential benefits of enhancement technologies. The author navigates this debate, highlighting the ethical dilemmas and societal implications that arise from these opposing viewpoints.

Yuzergan critically examines the philosophical underpinnings of human enhancement, questioning the fundamental nature of what it means to be human in an era of rapid technological change. The chapter investigates the cultural and philosophical perspectives on human nature and the desire to transcend it, considering the implications of such aspirations for human identity

and societal norms. One of the key discussions in this chapter revolves around the distinction between therapeutic and enhancement interventions. The author argues that this distinction is increasingly blurred as technological advancements offer possibilities that go beyond traditional medical treatments. The ethical challenges in defining and regulating these interventions are thoroughly analyzed, considering their impact on fairness, equity, and societal dynamics. The chapter also addresses the potential risks and unintended consequences of human enhancement technologies. Yuzergan emphasizes the need for a cautious approach, advocating for ethical guidelines and regulatory frameworks to manage the development and implementation of these technologies. The author explores scenarios where enhancements could lead to new forms of inequality, societal divisions, and even challenges to human dignity.

This chapter provides a deep and thought-provoking analysis of human enhancement, balancing the potential benefits and risks. The author calls for a responsible and ethical approach to the development of enhancement technologies, stressing the importance of a societal dialogue on these critical issues. This chapter sets the stage for further exploration of the potential future trajectories of humanity in a world where the boundaries between biology and technology are increasingly blurred.

In Chapter 4 of the thesis, the candidate provides a detailed discussion of Transhumanism and Posthumanism, along with related concepts. The chapter defines Transhumanism as a cultural and intellectual movement advocating for the use of technology to enhance human intellectual, physical, and psychological capacities. The historical roots of Transhumanism are explored, highlighting its evolution from a concept into a significant cultural movement. Yuzergan discusses the philosophical underpinnings of Transhumanism, focusing on its vision of transcending human limitations through technological advancements. This includes a detailed analysis of the ethical and metaphysical questions raised by the pursuit of such enhancements. She also examines the role of technology in Transhumanist thought, emphasizing the belief in the transformative power of advancements like AI and biotechnology.

Yuzergan contrasts Transhumanism with Posthumanism, clarifying the common misconceptions between the two. While Transhumanism focuses on enhancing and surpassing human abilities, Posthumanism delves into the philosophical implications of these changes, questioning the nature of humanity and the ethical dimensions of surpassing traditional human boundaries. The chapter also discusses the relationship between Transhumanism and religion, exploring how Transhumanist ideals intersect with, challenge, and sometimes align with religious concepts of human nature and destiny. Furthermore, Yuzergan addresses the criticisms and concerns surrounding Transhumanism, including fears of dehumanization, loss of identity, and the potential for new forms of inequality. These concerns are contrasted with the optimistic Transhumanist view that such advancements could lead to a new era of human flourishing. This chapter offers an in-depth exploration of Transhumanism and Posthumanism, providing insights into their philosophical, ethical, and cultural dimensions. The chapter emphasizes the significant impact these movements

could have on the future of humanity, presenting a balanced view of their potential benefits and challenges.

In the last, Chapter 5 of the thesis, the candidate examines the relationship between humans and digital technologies through the lens of phenomenology, particularly drawing on the philosophies of Martin Heidegger and Maurice Merleau-Ponty. The chapter challenges the notion that digitalization fundamentally alters human ontology, arguing instead that technology is an extension of human existence. Yuzergan offers an exploration of Heidegger's concept of Dasein, or "being-there," which emphasizes the inherent connectedness of human beings with their world. Yuzergan applies this concept to our engagement with digital technologies, suggesting that these technologies, while transformative, do not create a separate realm of existence but rather extend our existing one.

Merleau-Ponty's philosophy of embodiment is also pivotal in this discussion. The author argues that our physical, embodied experience remains central to our understanding and interaction with the world, even in the digital age. This perspective challenges views that see digital technology as creating a completely detached virtual experience, separate from our physical reality.

Yuzergan further explores how digital technologies impact our perception of time and space, our relationships with others, and our self-identity. While acknowledging the profound changes brought about by these technologies, the chapter asserts that they do not diminish the fundamental aspects of human experience grounded in our embodied existence.

The discussion also touches on the idea of the "post-human," often associated with technology transcending human limitations. Yuzergan critiques this notion, arguing that, despite technological advancements, the essence of what it means to be human remains intact. The author emphasizes that technology should be seen as a tool that humans use to navigate and interpret the world, not something that redefines our fundamental nature.

Throughout the chapter, Yuzergan advocates for a balanced view of technology, recognizing its transformative potential while also highlighting the enduring aspects of human nature. The author calls for a deeper understanding of how digital technologies intersect with human life, urging a thoughtful and critical engagement with these tools. This last part of the text presents a nuanced perspective on the human-digital technology relationship. By applying phenomenological principles, the candidate provides insights into how digitalization impacts, but does not fundamentally alter, human ontology. This approach offers a counter-narrative to views that overly emphasize the transformative power of technology, reminding us of the persistent relevance of our embodied human experience in the digital age.

The conclusion of the thesis encapsulates several key contributions:
(1) In-depth analysis of digital technology's impact on human existence, exploring how these technologies extend but do not fundamentally change human nature.
(2) Critical examination of human enhancement debates, providing a nuanced view of the ethical and philosophical implications.
(3) Insightful analysis of Transhumanism and Posthumanism, differentiating between their philosophies and potential impacts on humanity.

(4) Application of phenomenological perspectives to understand the human-digital technology relationship, emphasizing the enduring nature of human ontology in the digital era.

I accept the contributions of the thesis, I find that they do represent a progress of the debate and I confirm that the candidate demonstrates the necessary familiarity with the related debates. I have two questions that I would like to hear the candidate's position on:

1. In the scenario where homo sapiens braces technology both as a physical enhancement and as an intelligence enhancement what arguments could we have that in the evolutionary long run the species would not transform evolve into a radically different species?

2. What is your view on the existential threats by an AGI?

The thesis demonstrates an in-depth understanding of key topics and issues in the declared fields. I accept the candidate's main theses as well-argued and enriching the debate in the field of contemporary Continental ontology. I find that his contributions meet and actually exceed the academic requirements for a doctoral degree under the Bulgarian law and academic practice in Bulgaria for the defense of doctoral dissertations in the field of philosophy. I have no joint publications with the candidate and I am not in a conflict of interest with her. I vote positively for the defense and recommend to the Committee to accept the current dissertation work with the highest grade.

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Sofia, January 31st, 2024