

# Digital Wellbeing in the Posthuman Era

Edited by  
Evangelia Sampanikou and Evangelia Kavakli





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*Digital Wellbeing  
in the Posthuman Era*

Edited by

Evi Sampanikou and Evangelia Kavakli

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## PREFACE

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Stefan Lorenz Sorgner\*

The question concerning well-being is the question concerning the good life, which has been the center of philosophical investigations since antiquity. All ancient thinkers dealt with the notion of *eudaimonia*, which literally stands for a good demon, a good god of fate. If you have a good fate, you have a good life. The highest idea in Plato's philosophy was the idea of goodness, and the Platonic tradition has been determined by the unity of truth, goodness, and beauty.

This tradition has been enormously influential in all parts of the world, and not only in the western worlds. Nietzsche even claims that Christianity is Platonism for the people. However, in modern times the certainty which went along with truth, goodness and beauty got shattered. The following three thinkers have been particularly important in moving away from the binary ontological framing which originated, at least, with Plato.

Darwin dissolved origins, Nietzsche dissolved ends, Freud dissolved mastery: since then, the "human" has been a hypothesis in motion.

With the increasing doubt that thinkers have shed on the notion of truth, doubt has been shed on goodness and beauty, too. These developments are described as posthuman paradigm shift.

The posthuman paradigm shift is the moment when human beings learn to live without guarantees, without essences, without alibis. Then, they need to learn to still say Yes.

We get confronted with a tragic world of permanent suffering, while our ancestors had the hope for an afterworld, in which there was a chance of overflowing fulfilment. Now, we are confronted with a permanently growing desert of contingencies. Instead of knowledge, we have perspectives, which is as-good-as-it-gets.

Perspectives are interpretations, which do not have to be false, but which merely can be false. Perspectives are either nourishing or toxic. Perspectives are interferences which are either constructive or destructive.

Once we accept that all values are fictions, the question shifts from "Which values are true?" to "Which values resonate?" This does not lead to arbitrariness, but to responsibility of the highest order. No god, no nature, no system will decide for you. Your drives become your criteria; your life becomes your experiment.

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My own drives have taken me towards Euro-Transhumanism. Euro-Transhumanism names a situated response - rooted in European tragic consciousness - to technological becoming without universal claims. Euro-Transhumanism is not acceleration without memory, nor transcendence without cost.

Euro-Transhumanism is the art of wielding fire without burning the hand that bears it. We carry the wisdom of the old tragedies - the weight of history and the limits written in blood - not to remain still, but to ensure that, in surpassing the human, we do not dissolve into hollow echoes of the machine.

We are confronted with an enormous variety of emerging technologies, which can be used to increase the likeliness of us living good lives. However, we no longer have the basis for aiming for a single reply concerning the question of the good life, as it was present in the Platonic tradition, affirming the unity of truth, goodness, and beauty. What remains after the posthuman paradigm shift is a great plurality of different perspectives, whereby each perspective can be related to a bundle of permanently changing drives. Is there any meaningful content left for making judgements concerning the good life, and wellbeing?

Psychological studies have shown that about eighty percent of the participants who responded in this study affirmed that they would want to live past one hundred and twenty years, if they were healthy. An increased healthspan is one quality which is widely identified with an increased wellbeing. Health can be seen as an instrumental or an intrinsic good, but it is important to realize that most people, in one way or the other, relate health to an increased level of wellbeing. This is why it is important. It can significantly be promoted by means of emerging technologies, in particular by means of big data analyses.

An extended healthspan is not a moral duty, but a condition of possibility: for thinking that does not rush, for bodies that still dare to experiment, for spirits that have time to revise themselves. This ethics refuses both the ascetic glorification of decline and the technocratic cult of optimization. It affirms health not as an ideal to be universalized, but as a situated power to continue becoming.

If you are healthy, then you give shape to your life, and embrace the ethics of liberal autonomy, which is the ethical basis of many of today's societies.

Autonomy is a beautiful fiction, twisted just enough to be usable.

Based on such ethics, it becomes important to realize to grasp our own drives, to face them, and to be strong enough to stick to them. Hence, specific virtues need to be promoted, such that autonomy can be realized.

Mindfulness is the virtue of seeing clearly amid mirages; truthfulness is the courage to endure what one sees; self-control is the strength to act accordingly.

Given the increased doubt about anything which is not accessible by the senses, pleasure becomes even more important than it has always been. A simple-minded base form of hedonism seeks intensity without memory, pleasure without cost, stimulation without form. Thereby, the risk of undermining one's own health gets significantly increased, which is the reason why Euro-Transhumanism does not affirm base hedonism.

Hedonism without discipline is merely decay that learned to smile.

Instead, it stresses the relevance of additional virtues for living a refined hedonism.

Grandezza: take nothing lightly that you love.

Raffinatezza: love only what grows richer the closer you look, what justifies patience, precision, and the care of details.

Fiducia: trust only those who have bled beside you.

A refined hedonism knows that the most exquisite pleasures are inseparable from discipline, patience, and risk.

What matters is that life retains enough strength, time, and health to risk another interpretation—and to say Yes again.

This revised being-in-the-world has significant consequences for the art world, too, as with the posthuman paradigm shift beautiful representations of truth and goodness have lost their plausibility as ends of the arts.

As one cannot step into the same river twice, so one cannot engage with the same artwork twice: for in Euro-Transhumanism, art is not an object but a becoming, a struggle of forces in which flesh, code, memory, and will collide—so that over time neither the work nor the perceiver remains unchanged. Each encounter leaves scars or weapons. There are no neutral entanglements. Each engagement produces interferences: some constructive, where tensions intensify, meanings proliferate, and new capacities are forged; others destructive, where forms fracture, values dissolve, and both work and perceiver are unmade, cleared for further becoming.

Is there anything else which can be said concerning the arts? Many artists, intellectuals, and philosophers of art today highlight the relevance of moving away from beauty, as the unity of truth, goodness, and beauty gets correlated with several violent types of discrimination. To avoid them, they demanded that beauty, too, must be discarded. However, there is an innate longing for beauty in all its sensual shapes like symmetry, harmony, or the golden mean, as from an evolutionary perspective beauty relates to pleasure due to a strong correlation between beauty and health. In addition, those thinkers do not realize that beauty itself is not the problem, as it does not have to be violent, and does not have to promote violent versions of discrimination.

Symmetry was tyrannical only when it pretended to be divine. Once it admits its animal genealogy, it becomes innocent again.

Beauty is not the problem but the claim for truth is, as the claim for truth implies the claim of universal validity. If you (or your work) do not correspond to the truth, you are deficient, ill, handicapped, or inferior, and you should change. Truth is violence, not beauty. This stance has implications concerning the meaning of inclusion.

Inclusion does not mean choosing monsters over harmony but refusing to crown either.

What matters is that no one wears the crown. If this is plausible, the necessity of moving away from beauty vanishes such that an even greater diversity can be realized.

The task is not to destroy the golden ratio, but to twist it until it learns to dance with monsters.

It is this exciting field of meaning which this intriguingly stimulating essay collection investigates.

# WELLBEING AND POSTHUMAN ETHICS IN THE DIGITAL ERA: AN INTRODUCTION

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Evi Sampanikou,\* Evangelia Kavakli\*\*

## I. Philosophical Wellbeing in the context of Posthumanism and the Arts

The broader concept of *wellbeing* and especially *the wellbeing of the mind* in ancient Greek philosophy is summarized by the notion of the *care of the self*. For ancient philosophers, being a philosopher does not depend on the originality or the quantity of philosophical discourse one has devised or developed, but on the way one lives. In this sense, being a philosopher has above all to do with *becoming a better person*. This is clearly the case in the Pythagorean, Platonic and Aristotelian traditions, where philosophical life culminates in intellectual life (Markopoulou, in this volume).

The anthropocentric view of the world, whose triumph was embodied by the Enlightenment, survives to this day focused on the cultivation of *having* at the expense of the cultivation of *self*. As we have already observed, this anthropocentric worldview is the reason why humanity has been set in opposition to nature, which it continues to regard as an object of conquest and exploitation.

On the other hand, Critical Posthumanism is nowadays the cultural theory and philosophy that succeeds Postmodernism (Sampanikou 2017, 1–3; Sampanikou 2014, 241–242), moving beyond its core concept, the *palimpsest*, and developing instead the philosophy of interweaving or “*twist*” (Sampanikou, 2024a, 8, 11, 20–21). Whereas postmodernism is built primarily on synthesis through questioning, rejection, and ultimately the selective recycling of ideas from the past, posthumanism seeks a stable and productive coexistence of old and new ideas, foregrounding the need to preserve the past as a foundation for the future (Sampanikou – Stasienco 2021, 11-14).

The posthumanist perspective on well-being has, in recent decades, been reflected most eloquently in the field of the audiovisual arts, with particular emphasis on two interconnected fields—comics and cinema—especially those that serve the literary genre of science fiction (Sampanikou 2002, 438–473). As in literature, comics and films of the fantastic and of science fiction primarily articulate dystopian philosophical questions

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concerning the evolution of the human–technology relationship (Sampanikou 2012, 136–143), focusing on key issues such as the abuse of power by the powerful, the dehumanization of the masses (Haslam 2022, 313), the immeasurable scale of ecological destruction and the desertification of the natural environment. This occurs alongside the concentration of populations in vast “mega-cities,” where a few “chosen” individuals prosper while the rest are abandoned to violence and disease (Sampanikou 2024b).

Indeed, comics and cinema are two forms of contemporary audiovisual arts that share the concerns of science fiction and thematically open onto dystopian visions prompted by the relationship between humanity, science, and technology, as well as by the limits of technological wellbeing. The natural environment is damaged because of human ignorance and arrogance, through the expansion of the built environment and the uncontrollable growth of large cities, in which class inequality, total control, and heightened tensions in the relationship between human existence, artificial intelligence, and the digital world prevail.

The intensifying relationships between the “human” and digital technology lead to an environment in which the vision of wellbeing is often transformed into dystopia, with power playing the role of regulator. Yet this power no longer bears a human but a corporate imprint. Authoritarianism, the collapse of democracy, and unchecked urban development lead to the restriction of resources, poverty, violence, and dehumanization.

It is important, however, that audiovisual works of art issue warnings and call for vigilance, so that human societies do not overstep the limits in their relationship with technology and do not further degrade the relationship between humans and other forms of life and nature. In other words, the boundaries between nature and culture. That is why in so many of the products of audiovisual arts great emphasis is placed on ethical issues to preserve balance in a world of extremes, where one must choose either captivity in mega-cities or exposure to the boundless dangers of the deserts of human absence. Yet, the future remains unwritten.

## II. Digital Wellbeing in an Artistic and Philosophical Context

Contemporary society is characterized by the widespread adoption and rapid integration of technologies aimed at improving capability and productivity through the restoration or enhancement of human physical, cognitive, and social capacities. Within this context, *digital wellbeing* (εὐ ζῆν) has emerged as a new concept that captures the fragile balance between the benefits and drawbacks experienced by people in an increasingly digitalized world (Vanden Abeele and Nguyen 2022).

Existing theories of digital wellbeing focus on the socioeconomic parameters of digital citizenship (Yue et al. 2021). A common thread across these approaches is digital literacy and how, through skills development, individuals can be empowered to participate in and enjoy the benefits of digital life. From the perspective of computer science, digital wellbeing is often associated with cybersecurity, seen as a necessary condition for safeguarding individual and collective quality of life in digital environments. Other research focuses on usability issues and user interface design, aiming to optimize user experience and prevent the exclusion of specific user groups (Pawlowski 2015; Peters and Ahmadpour 2020). It is important to note that these studies do not focus on the concept of digital wellbeing itself but rather treat it as part of broader issues such as inclusion and security.

Digital wellbeing has also emerged as a core concept in communication research (Valkenburg 2022), with a focus on the penetration of social media. Research in this area is dominated by approaches that emphasize “technology addiction” and investigate the role of digital disconnection as a means of regaining control and, by extension, restoring an individual’s quality of life.

Beyond digital media, digital wellbeing is linked to the cognitive and physical enhancement of the human body (Smits et al. 2022; Pirmagomedov and Koucheryavy, 2019). Initially, most enhancements focused on physical capabilities, for example with exoskeletons or prosthetic limbs. Today, however, enhancement is increasingly supported by advanced sensor technologies and cognitive assistance. For instance, augmented reality (AR) glasses can provide navigation support and object recognition, while automated decision-making systems can enhance assessment and diagnostic capabilities by leveraging algorithmically generated insights from large datasets.

Beyond the obvious impact of these developments in fields such as healthcare, education, and employment, digital enhancement also affects the psychological dimensions of wellbeing, primarily autonomy and self-determination (Burr and Floridi, 2020).

Autonomy is a critical issue in human–technology relations, particularly when technologies seek to influence user behavior through the analysis of online preferences (Peters et al. 2018). At the same time, digital enhancement is presented as a means of empowering self-determination, offering new possibilities for action and self-narration within digital networks and virtual environments.

However, not all individuals are prepared to take advantage of these possibilities, as they may conflict with deeply rooted conceptions of wellbeing and of what constitutes a “good life.” Moreover, dependence on digital technology may ultimately restrict freedom if it encourages passivity (Bingjie 2021).

These concerns are part of a broader and ongoing discussion in the humanities regarding the ethical issues of digital wellbeing for individuals and societies. This discussion has influenced positive computing, which examines the direct and indirect effects of technology use at multiple levels, prioritizing a broader interpretation of design goals—from improving efficiency and effectiveness to optimizing users’ quality of life (Burr et al. 2020).

As the digitalization of society advances, however, the boundaries and interactions between human users and digital systems become increasingly blurred. Consequently, the human–technology relationship is undergoing a transformation. No longer is the primary focus on human control and manipulation of technology, but rather on distributed or collaborative action between humans and technology. Collaborative action can be observed, for example, in software such as recommender systems, which are used to suggest products, services, or content to users based on their previous interactions (Bryant 2021).

These developments call into question existing conceptual approaches to agency and the boundaries between humans and the artificial. Agency is defined as the capacity to act intentionally. According to this definition, machines do not possess agency, as they lack intention. However, contemporary digital systems based on artificial intelligence algorithms, particularly machine learning, exhibit increasing levels of autonomy, making them less dependent on human specification compared to fully programmed machines and thus endowing them with characteristics of purposive action.

When humans and technology collaborate, the outcome may be either divergence or convergence of capabilities. In the former case, human functioning may conflict with artificial functioning. In contrast, convergence may lead to technological dominance, thereby encouraging passivity and dependence. Achieving digital enhancement in ways that leverage new capabilities while respecting human choice, and at the same time avoiding systemic discrimination and inequality, constitutes a particularly demanding challenge (Bryant 2021).

It thus becomes clear that the digital transformation of society makes it imperative to more thoroughly investigate how emerging technologies—and the new forms of existence they enable—have altered our conceptual approach to wellbeing.

Within this framework, the present collection aims at promoting an interdisciplinary dialogue that examines the concept of wellbeing from different perspectives, specifically through the lens of the philosophy of art and technology. The goal is to clarify the parameters of wellbeing in an increasingly digital world, while also highlighting the need for a methodological framework that integrates the concept of wellbeing into the design process of digital systems.

### **III. Structure of the Book**

Apart from the “Preface” written by Stefan Sorgner, the “Epilogue” written by Anna Markopoulou, this “Introduction” written by the editors of the present volume refers to the book contents divided into four parts:

The first part, under the title *Philosophical Wellbeing and the Arts*, consists of five chapters:

Chapter 1, by Stefan Sorgner (“The Posthuman Paradigm-Shift, Beauty, and Art”) deals with Euro-Transhumanist concepts of digital wellbeing, while Chapter 2 by Anna Markopoulou (“Wellbeing: A Philosophical Perspective”) examines the notion of wellbeing from a philosophical perspective and focusing on the thinking of ancient Greek philosophers. This chapter attempts to answer why we need to be inspired by the notion of philosophical wellbeing, when studying the various expressions of the digital wellbeing.

Chapter 3, written by Anna Markopoulou & Evi Sampanikou (“Wellbeing: Towards the Construction of a Posthuman Self”), aims at exploring the inclusive dimension of nature and the kinship of humans with all living beings in ancient Greek philosophy, while related texts highlight the continuity of a non-anthropocentric perception of wellbeing. Chapter 4, by Evi Sampanikou and Anna Markopoulou (“Visual Arts in the Posthuman Era”), explores the emergence of the new meanings of the arts in the context of Posthumanism, from the aspect of Critical Posthumanism, Transhumanism, and Euro-Transhumanism. Chapter 5, by Evi Sampanikou (“Science Fiction Comics and Graphic Novels. Towards a Posthuman Future?”) uses the example of graphic novels that reflect Critical Posthumanist, Euro-Transhumanist and Transhumanist ideas. Several case studies mentioned allow us to examine how the end of Postmodernism calls for a re-invention of a more inclusive Humanism that reflects both Critical Posthumanist and Euro-Transhumanist thought.

The second part of the book, under the title *Technological Wellbeing, Trans- and Posthumanism, Euro-Transhumanism: Cultural Perspectives* is divided in four chapters:

In Chapter 6, by Panos Kritikos (“Transition, Transformation, Restart: Aspects of the World, Well-being, and Concerns in 21st Century Pop Culture”) the author examines the concept of wellbeing through a Posthumanist lens applied to mass cultural products in shaping the perception of the “consumer audience” regarding what is popularly defined as “good living.” Anna Hatziyiannaki, in Chapter 7 (“Stelarc: For A “Quasi-present” Astronaut”) analyses the work of the famous artist STELARC, focusing on his Alternative Anatomical Architectures, investigating the fusion of human and machine to overcome biological limitations, examining projects like “Ear on Arm”, “Exoskeleton”, and “Movatar” that illustrate his concept of a posthuman entity designed to thrive in extreme environments, including outer Space, and his radical proposals, such as a “hollow, hardened, and dehydrated” body, and telepresence-based avatars operating in Space. In Chapter 8, by Ioanna Stamati and Angeliki Kitsiou (“Posthuman Well-being in Popular Culture: A Semiotic Reading of the Avatar Film Series”) the authors explore how *Avatar: The Way of Water* (2022) interprets wellbeing from a Posthuman and Semiotic perspective, taking into consideration that Avatar’s visual and emotional language depicts wellbeing as an inclusive process that includes species, bodies, and media, rather than an individual trait. Chapter 9, by Ioannis Stathoyiannis (“Becoming an Eternal Hero: The Monkey King’s Travel through time to the Posthuman Era”) focuses on the Chinese folk tradition, religion, and mythology, through the case of the Monkey King from Wu Cheng’en’s text *Journey to the West* as a Posthumanist framework that about cultural and personal wellbeing that bridges the gap between Eastern and Western narratives.

The third part, entitled *Embodied Practices of Wellbeing and Posthumanism* is also divided in four chapters:

In Chapter 10, by STELARC (“The Existential and the Ontological: Excess, Indifference and Intelligence”) the artist unfolds the ontological origins of his work, discussing all the aspects about a technological surpassing of the limits of the human body and the future prospects of our close interaction with technology. In Chapter 11, by Jean Marc Matos, the artist discusses wellbeing focusing on the case of the dance, a way of thinking, sensing, and existing in relation, as choreographed coexistence and embodiment, that can open new pathways for political and ethical imagination. In Chapter 12, by Evi Stamou (“Microhistorical Narratives in the Posthuman Era: the Playful Relationship between Artificial Intelligence Tools and Archival Material in Film. - A Case Study Presentation of the Hybrid Documentary Film «Who was here?» (25’, 2025)”), the author examines the relationship between microhistorical narratives and Posthumanism, as shaped by the introduction of artificial intelligence tools and programs in audiovisual production, addressing key questions on the fragile nature of historical truth and the role of contemporary audiovisual media. In Chapter 13, Nikolitsa Gourgouli discusses “Fashion & Well-being” in Posthuman terms, in relation to contemporary challenges such as consumerism and the shift to more conscious consumption and eco-friendly practices. Under this light, the notion of wellbeing extends beyond the human to include coexistence with the environment and ‘other than human’ life.

The fourth part, *Digital Wellbeing in the New Era of Digital Convergence: Towards a Critical Theory of Technology and a Posthumanist Ontology* is finally also divided into four chapters:

In Chapter 14, by Vivi Zangogianni, Evangelia Kavakli and Evi Sampanikou (“Beyond Use and Design: Reframing Digital Wellbeing in a Relational Ontology”), the authors examine the conceptual evolution of Digital Wellbeing (DWB) from its early metaphorical reference to a genetic orientation toward its dominant framing within risk-oriented and regulatory discourses, arguing that contemporary approaches to DWB remain grounded in persistent dualisms, drawing on the critical theory and new materialist ontologies. Chapter 15, by Evangelia Dimaraki (“Education and Digital Wellbeing: Reclaiming Human Agency”), deals with the experience of digital technology as a boundless, algorithmically curated environment misaligned with human thriving. The text focuses on the example of Education, that is the prime field for reclaiming human agency over technology. In Chapter 16, by Dionysis Zamplaras (“Rethinking Digital Wellbeing: Interactive Art, Data, and Embodied Interfaces”), the author explores digital wellbeing in the posthuman era through two immersive research-creation projects: SolastalgiaXR and Dr Cloud. The projects investigate how embodied interaction within hybrid virtual-physical interfaces reshape the way we perceive, understand, and act within technologically mediated environments. Chapter 17, by Zacharoula Sereti, Emmanouil Mavrikos, and George Tsekouras (“Beyond Reality: Exploring the Synergy of the Metaverse, Non-Fungible Tokens, and Internet of Things”), the authors study the intersection of the metaverse, non-fungible tokens (NFTs), and the Internet of Things (IoT), that have given rise to a new era of digital convergence, with various characteristics transforming the way we interact, conduct commerce, and experience culture. A series of challenges are also discussed, such as ethical dilemmas and regulatory concerns.

Last but not least, the book is closing with the “Epilogue” written by Anna Markopoulou.

Our hopes for this volume are a lot. We expect it to open new fields and discussions on the interaction between humans and technology, and also on the interaction between humans and the natural world and non-human beings, shedding light on the on the strong necessity, especially for the new generations, to live in open, broadly inclusive environments. Nothing is lost if we open our eyes to new realities.

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# **PART I**

## **PHILOSOPHICAL WELLBEING AND THE ARTS**

# THE POSTHUMAN PARADIGM-SHIFT, BEAUTY, AND ART

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Stefan Lorenz Sorgner\*

## **Abstract**

*Harmonious beauty has been forbidden in artworks after Adorno's philosophy of art has become culturally dominant in the second half of the twentieth century.<sup>1</sup> However, some posthuman artworks have developed new concepts of beauty, while many posthuman artworks have also moved beyond this cultural prohibition. Does it mean that these works of art are aesthetically without relevance, that they are merely creations from the cultural industry to promote their capitalist interests, and that they affirm totalitarian ethical structures? Many artists of the posthuman have to face this criticism, which applies to the bioartist Eduardo Kac in the same way as to composers like Philip Glass or Sven Helbig. Contrary to the judgement of the intellectual avantgarde tradition inspired by Adorno, I will highlight the cultural relevance of beautiful artworks after the posthuman paradigm shift. Thereby, I will address the following issues: What is the posthuman paradigm shift? What are the implications of the posthuman paradigm-shift for works of art? What is the meaning of beauty in posthuman works of art? What is the connection between beauty and health? Why is health important?*

## **I. The Posthuman Paradigm - Shift**

The posthuman paradigm shift is a cultural phenomenon, which has become initialized with the scientific, and philosophical works by Darwin, Nietzsche, and Freud. (Ranisch/Sorgner 2014) It is closely connected to an ontological reinterpretation of human nature. For at least two thousand years, it used to be the case that the dominant anthropology in Europe has been that an essentialist, unchanging, and immaterial human nature exists. This human nature has been identified with the soul, the mind, the image of God, rationality, as well as the divine spark. In any case, it was an immaterial ontological entity which justified human exceptionalism among living entities on earth. It was the basis for explaining why humans possess dignity which implies an infinite value, while all other solely natural entities merely have a limited value. This way of

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<sup>1</sup> „Gerade die Autarkie der neuromantischen und symbolistischen Schönheit, ihre Zimmerlichkeit jenen gesellschaftlichen Momenten gegenüber, an denen allein Form eine Würde, hat sie so rasch konsumfähig gemacht. Sie betrügt dadurch über die Warenwelt, daß sie sie ausspart; das qualifiziert sie als Ware. Ihre latente Warenform hat innerkünstlerisch die Gebilde des *l'art pour l'art* zu dem Kitsch verurteilt, als der sie heute belächelt werden.“ (Adorno 1997, *Ästhetische Theorie* GS 7, 352-353)

thinking was also the ontological basis for many different types of discrimination from sexism, via racism to speciesism.

With the works by Darwin, Nietzsche, and Freud doubt has been shed on an ontological human exceptionalism, and a non-dualist ontology of becoming has become more and more plausible which also led to an increased importance of evolutionary thinking such that evolutionary economics, evolutionary epistemology, and evolutionary aesthetics have been developed in the most recent past. (Sorgner 2022b)

The posthuman paradigm-shift is an epochal event and it cannot be doubted that the impact of its occurrence cannot yet be fully grasped. Hence, the best minds of our generation are needed to deal with the massive number of implications of this event. This is why the field of the metahumanities, including the discipline of posthuman studies, is gradually becoming more and more important.

Legal systems all over the world demonstrate how strongly rooted humanist thinking still is, as most laws imply that only human beings are persons and that animals are things or should at least legally be treated as things. There is one exception, namely Argentina, where it was recently decided that an Orangutan is a person, which lead to the need to free the ape from the zoo.<sup>2</sup> However, by thinking about the great variety of implications of a legal recognition of non-human persons, it becomes clear that such a move is easier said than actually done. This is why there is an urgent need to reflect upon the various implications of the posthuman paradigm-shift.

This shift leads to many other challenges. Here, you find a list of related issues: 1. Doubt concerning and ontological grounding of binary oppositions; 2. The coming about of a relational ontology of becoming; 3. A shift from an essential substance towards continuously transformative becomings; 4. The body is no longer a static vessel but rather a fluid, dynamic, and entangled psychophysiology; 5. From an essential and unified subject towards a distributed network as agent which includes an embodied and extended understanding of the mind; 6. From anthropocentrism towards non-anthropocentric philosophical theories; 7. From getting access to eternal truths towards a process of co-creations; 8. An increased relevance of chimeras, hybrids, cyborgs, and assemblages (Sorgner 2022a); 9. From eternal values and norms towards a fictive ethics; 10. From an ontology of unchanging being towards a close entanglement of language and an ontology of becoming, which leads to an understanding of language as a web of poems; 11. From logocentrism towards the relevance of affects; 12. From a linear understanding of time towards a circular reinterpretation; 13. From an unchanging truth towards permanent creativity; 14. From the form and content distinction as centre with a focus on representing something eternal towards an emphasis on process, texture, and affect; 15. From a visual bias towards the inclusion of indigenous traditions; 16. From art as interior expression towards art as an entangled, emergent and situated event, process, and occurrence such that the relational, performative, and material becomes particularly relevant; 17 from the artistic genius who grasps eternal truths toward the artist as facilitator, assembler, or participant; 18 from the communication of insights towards shared spaces of resonance and creative and destructive interferences; 19 from a refined superior mind towards the staging of oppressed forces as highlighted in decolonialism; 20 from a unified rationality towards a multiplicity of logics. This list is not

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<sup>2</sup> <https://www.theguardian.com/world/2019/nov/07/sandra-orangutan-florida-argentina-buenos-aires> 9.07.2025.

comprehensive but summarizes some of the challenging developments which need to be dealt with, which play a central role in the lifeworld, politics, and culture but which also have an enormous importance in the art world. In the above list, I did not separate movements of the art and the life world. These events also have many significant consequences concerning the concept of “beauty”, which moves away from the affirmation of the classic ideal.

## **II. From Beauty as Symmetry Towards its Prohibition and Affirmation of Relational Alternatives**

It is not much of a surprise that the posthuman paradigm-shift has also had a significant effect upon the concept and relevance of beauty, which used to be a central artistic concept within the binary tradition of humanism. Beauty used to be identified with the golden mean, a static form, symmetry, and proportion. The Vitruvian man, the classic ideal, and the golden mean were different ways of explaining, the meaning of beauty. However, a lot of doubt has been raised concerning the ideal of classic beauty during the posthuman paradigm-shift.

An anthropocentric eurocentrism identifies the able-bodied, symmetrical, white, male body as ideal of beauty as it shows up with the Vitruvian man, whereby monsters, the nonhuman, machines, hybrids, and divergent and nonbinary entities get oppressed.<sup>3</sup> Thus colonialism, heteronormativity, sexism, speciesism, and racism have been generated. The Apollo of the Belvedere from the Vatican Museum exemplifies this classic beauty ideal, which affirms essentialism, objectivity, universalism, and timelessness. In the 20<sup>th</sup> century, the golden mean has also been commodified by the capitalist culture industry. Most recently, it gets received in the fields of fashion, design, and plastic surgery. Thus, a connection between classic beauty and consumerism gets highlighted by thinkers from the Frankfurt school tradition.<sup>4</sup> The golden mean is a static ideal which is mathematically quantifiable. It often privileges youthful symmetry, an extended healthspan, and various versions of super-enhancements like superintelligence, superlongevity, and superhappiness. Such concepts are being affirmed by classic transhumanism. Thus, different bodies like queer, transgressive, and mutant bodies, get pathologized, and the body is supposed to be optimized by technocapitalist forces. The aesthetics of monsters which can be associated with the grotesque, the abject, and the other, get neglected by any aesthetics of classic, perfect, proportional, harmonic, and symmetric beauty.

After the posthuman paradigm-shift beauty becomes an affective, relational, and dynamic force which emerges through intra-action in processes which undermine discriminatory structures. Critical posthumanism exclusively focusses on such notions. Eurocentric beauty norms like whiteness, symmetry, and youth are being criticised. The aesthetics of cyborgs fuses humans, animals and machines. New processes of beauty are meant to disturb, unsettle, and inspire an ecological awareness, vulnerability, and care for more than able-bodied human life. Posthumanist beauty is no longer supposed to be based on the control of nature, but rather coexistence, fragility, and sustainability. Bodies which deviate from the classic ideal get celebrated so the uncanny, grotesque, and abject

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<sup>3</sup> „Weil Totalität am Ende die Spannung verschluckt und zur Ideologie sich schickt, wird Homöostase selbst aufgesagt: das ist die Krisis des Schönen und die von Kunst.“ (Adorno 1997, *Ästhetische Theorie* GS 7, 85)

<sup>4</sup> Adorno 1997, *Ästhetische Theorie* GS 7, 352-353.

get embraced as well as mutability, asymmetry, and the non-human. Hybrid, glitchy, and strange forms of becoming are meant to replace the eternal ideal of the golden mean.

The following five examples are paradigmatic embodiments of this shift away from the classic ideal towards a beauty of monsters, becoming, otherness, the relational, and care:

Patricia Piccinini created the sculpture “The Young Family” which is a hyperreal sculpture of hybrid human-animal entities which embody tenderness but also discomfort due to their monstrous appearance. Here, the monstrous gets presented as beauty.<sup>5</sup>

Orlan has made a performance entitled “The Reincarnation of Saint-Orlan” in which she undergoes plastic surgery, but instead of aspiring for an ideal, she performs the process of permanently redefining her own appearance. Here, becoming gets presented as beauty.<sup>6</sup>

Stelarc has famously had his body modified such that an ear was sculpted on his arm. Thus, otherness gets presented as beauty.<sup>7</sup>

Marina Abramović arranged a performance, with the title “The Artist Is Present” in which she enters into various relationships to reveal human vulnerability. Thus, the relational gets presented as beauty.<sup>8</sup>

Agnes Denes conceptualized “Wheatfield – A Confrontation” such that a wheatfield grew for more than three months next to the World Trade Center in 1982, which raised issues such as global warming, economic inequality, mismanagement, and waste. Thus, care gets presented as beauty.<sup>9</sup>

All these artworks are amazingly meaningful, strong, timely, and intriguing. A challenge arises not with respect to these artworks, but when it comes to the exclusivity of alternative concepts of beauty.

### III. Performative Self - Contradictions and the Twist

Artworks by Philip Glass, Eduardo Kac as well as Sven Helbig have been criticised by embracing proportion, symmetry and harmony as elements of classic beauty. However, none of these artists has affirmed classic beauty in the sense of Leni Riefenstahl which had the intention of getting rid of otherness, monsters, and care. In their case, it was merely meant as an option, a suggestion, a possibility, but not as the only answer to the challenging question of beauty. Critical thinkers who reject the aforementioned artworks often do so in the name of non-binary thinking, not realizing that they thereby commit a performative self-contradiction as they affirm binary thinking by doing so. Classic beauty is bad while posthumanist concepts of beauty are seen as good. This justification gets further support from the explanation that classic beauty affirms colonial thinking by implying the demand of a universal validity. However, here posthumanist critics are mistaken, as it can be possible to affirm classic beauty without claiming its universal validity. Classic beauty used to be dominant as it corresponded to the eternal immaterial truths. However, this does not have to be the only justification for symmetry, harmony,

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<sup>5</sup> <https://www.patriciapiccinini.net/writing/51> 10.7.2025

<sup>6</sup> <https://faroutmagazine.co.uk/surgery-performance-art/> 10.7.2025

<sup>7</sup> <https://www.labiotech.eu/trends-news/stelarc-ear-art-human-body/> 10.7.2025

<sup>8</sup> <https://www.moma.org/calendar/exhibitions/964> 10.7.2025

<sup>9</sup> <https://news.artnet.com/art-world/agnes-denes-wheatfield-2497536> 10.7.2025

and proportionality. If these notions correspond to immaterial principles, then they are universally valid. Yet, there are alternative justifications which have been explained by evolutionary psychologists which thus become contingent criteria.

#### **IV. Symmetry as Health Indicator**

I particularly draw upon insights from Etcoff's groundbreaking book "Survival of the Prettiest: The Science of Beauty" (2011). Herein, the biological basis of beauty gets highlighted. Etcoff clearly demonstrates that perceptions of beauty are not merely cultural constructs, but they can also have evolutionary origins. Traits such as facial symmetry, clear skin, and specific body ratios are considered universally attractive because they may signal health and fertility. There is a close connection between the perception of beauty and the relevance of health. Symmetry can also count as a health indicator. "Survival of the Prettiest" discusses how symmetrical features are often perceived as more attractive, potentially because symmetry can indicate genetic health and developmental stability. There are also neural responses to beauty. Etcoff in this study examines how the brain responds to attractive stimuli. Viewing attractive faces activates the orbitofrontal cortex, a region associated with reward processing, suggesting that our brains are wired to find pleasure in beauty. All these analyses do not imply that there are no cultural constructs of beauty. They clearly exist and they are relevant and meaningful. Yet, there is also the dimension of a cultural and evolutionary interplay. There clearly are cultural variations in beauty standards. Etcoff acknowledges them, too. In addition, Etcoff emphasizes that certain preferences are consistent across cultures, supporting the idea of an evolutionary basis for beauty appreciation. It is this element which does not get acknowledged within approaches who reject artworks by Philip Glass, Eduardo Kac as well as Sven Helbig due to them employing elements of classic beauty.

#### **V. Increased Health Spans, Digitization, and a Higher Quality of Life**

Empirical studies have clearly demonstrated the following: Four out of five humans said that, with guaranteed health, they would want to live beyond 120 years.<sup>10</sup> There is widely shared tendency among human beings that an increased healthspan gets identified with an improved quality of life, and this is what human beings are interested in. We all care about a good life, and this study has clearly shown that most people identify an increased healthspan with a higher quality of life. This is an insight which has a political relevance. By means of establishing correlations between genes, and diseases, health can significantly be promoted. It is great that this can be done, and it should be done as thus the quality of lives can significantly be improved. Given that it is plausible that health is so important for most people, four out of five, this insight also has a cultural relevance, if Etcoff's study "Survival of the Prettiest: The Science of Beauty" demonstrates a plausible insight, namely that symmetrical features are often perceived as more attractive, due to symmetry potentially being able to serve as an indicator for genetic health and developmental stability.

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<sup>10</sup> Donner et al. 2016, 353.

What does this mean in practice? It would be wrong to demand that a Leni Riefenstahl aesthetics needs to become culturally dominant. This is exactly the move which had happened during the, so called, “Third Reich”. However, this does not follow from the aforementioned insights. It merely explains that and why the elements of health as well as of symmetry matter. Oppressing these elements is as totalitarian as oppressing monsters, care, and otherness.

Artworks by Glass, Kac, and Helbig affirm elements of classic beauty, but they do not do so in a totalitarian manner. They do not claim that all artworks should include these harmonies. In addition, they are not simply taking over these elements due to a naïve affirmation of a binary humanist concept of beauty. A non-totalitarian concept of beauty clearly comes out in their works due to the creative element in Kac’s use of gene technologies, the Buddhist tendencies in Glass’ compositions, and the euro-transhumanist references in Helbig’s musical creations. None of these artists affirms a totalitarian concept of beauty, which demands the overcoming of nihilism. All of their works function as suggestions, hints, and offers. None of them claims to have grasped the essence of the world which needs to reach cultural dominance in the near future.

## **VI. Inclusion Through Un-Cancelling Cancel Culture**

Forbidding the golden ratio to overcome binaries means to commit a performative contradiction.

The oppressed are supported to strengthen the marginalized against the colonizers.

However, by doing so the binary of colonizer and oppressed gets accepted.

Thus, binary thinking gets reinforced.

To be inclusive means to not only affirm alternative forms of beauty, but to also allow classic beauty as symmetry, proportionality and the golden mean, given that it is connected to a widely shared psychophysiological need.

What must be avoided is the claim for universal validity.

As long as neither classic, nor posthumanist forms of beauty claim universal validity, no totalitarian forces are at work.

The problem comes in when a force claims universal validity, whether this applies to binary or to non-binary ways of thinking.

Is it the claim of universal validity which is problematic or when it is attempted to put this claim into practice?

If the claim of universal validity was problematic, it would become necessary to cancel Plato.

Hence, only when thinkers try to implement their theory, which demands universal validity, into practice, dangerous totalitarian forces become active, which need to be undermined.

Only nihilism can save us, as long as it does not demand universal validity, but merely claims to be the most plausible interpretation so far. Nihilism would become self-contradictory, if it claimed universal validity. Nihilism is an interpretation, whereby an interpretation means that it can be wrong and not that it has to be wrong. Hence, it does not claim its own universal validity, which is the reason why it does not fall into the trap of the Cretan’s liar paradox.

## VII. Practice or Theory?

Is it the claim of universal validity which is problematic or when it is attempted to put this claim into practice? This is an extremely challenging issue. When is it legitimate to cancel?

What about the claim that a twelve-year-old girl is a witch who needs to get burnt? Respecting indigenous cultures and otherness might imply that colonial forces get applied when such practices get stopped. Even though, this example might sound like a story from a former century, these events still take place in Nigeria and other countries. 12-year-old girls who are accused of witchcraft, get burnt alive there. It is illegal in these countries, too. However, the belief in witchcraft is widely shared and practised. It can happen that police forces do not intervene, even if they have heard of these events, because they take place in a nearby city, and they do not want to spend money on the gas to drive to these cities and to intervene in these practices.

Intellectually, it can be argued that there is no epistemic superiority of conventional medicine in comparison to the local magical practices and beliefs in witchcraft. I agree. Concerning truth in correspondence to the world, both sets of beliefs are interpretations which can but do not have to be false. However, there is a difference concerning empirical entanglements.

If praying to a goddess cures 5 percent of all patients suffering from disease x, but by means of conventional medicine about 95 percent of all patients get saved, then it makes sense to rely upon conventional medicine rather than an indigenous practice, if you wish to get cured from this disease.

Those who doubt the empirical superiority of conventional science, engineering, and medicine often perform a performative self-contradiction by being willing to take a plane to participate in conferences during which they doubt the superiority of science, technology, and medicine. They do not realize that by taking the plane they rely on and trust in conventional engineering to undermine the reliability of conventional technological practices. They take the plane which got constructed on the basis of scientific insights, because they know it works, and it usually helps them to safely get from a to b.

## VIII. How to Treat Magic and Witchcraft?

Should witchcraft and magic be treated with respect, investigated, and cherished? Historians find the otherness of indigenous cultures fascinating. They study it, analyse it, and compare it to traditional practices in other parts of the world. However, is there ever the need to criticise and intervene?

I agree that norms and values are human made fictions, and this means that this insight also applies to personal rights. We live in different fictions than the Nigerians who subscribe to some understanding of witchcraft. I also agree that epistemologically, none of the belief systems is superior concerning the correspondence to the truth. However, this does not mean that the indigenous witchcraft culture present in parts of Nigeria needs to be respected. In the contrary, if the witchcraft demands that 12-year-old girls who are regarded as witches need to be burnt alive, then there is a need to intervene, as I think it is wrong to directly harm a person without a good reason. My understanding

that she is not a witch might not have a better ontological grounding than their understanding that she is one. However, I have my own ontological outlook which affirms that such acts are wrong and there is a need to intervene, if possible. I respect their indigenous culture as one which can be correct. However, if the culture demands that 12-year-old girls need to be burnt alive, then I intervene or support the ones who do so, as this way of acting corresponds to my way of conceptualizing the world without claiming that it is universally valid. We all have to at least permanently face the risk of getting our hands dirty.

It is this stance which also has implications concerning the notion of beauty. Care for indigenous culture is one element of posthumanist concepts of beauty. I cherish those concepts as long as they do not cause direct harm to another person and as long as they do not demand universal validity in practical circumstances. However, this logic should also apply to my own understanding of conceptualizing the world towards which I take a self-relativising stance, as I do not claim universal validity for it. My thinking is based in the European cultural tradition which is the reason why I refer to it as euro-transhumanism (Sorgner 2022c). However, it does not have Eurocentric implications as it does not demand universal validity. I merely stress its situatedness, as it is the result of being engaged with the continental European cultural tradition. I cherish conventional technological, scientific, and medical practices, as they are based on the principle of induction. If they work, then they get applied. If they do not work, then they need to be revised or given up.

Being inclusive also implies the need to allow the use of classic beauty in artworks as long as it does not claim universal validity or causes direct harm to people. This is the decisive difference between Wagner and Helbig. Wagner's total works of art were supposed to be a part of a cultural movement which were supposed to lead to a new kind of dominant culture and so that nihilism can be overcome. Helbig, on the other hand, presents a non-totalitarian total work of art which does not claim epistemological superiority and does not aim for world domination. What matters is whether there is a constructive interference. If there is a constructive interference then posthuman beauty can embrace symmetry, proportion and the golden mean as well as monsters, relationality, and otherness. Critical posthumanism stresses the exclusivity of monsters. Thereby, they commit a performative self-contradiction. Euro-transhumanism embraces all non-totalitarian works of art as long as they do not cause direct harm to another person. According to euro-transhumanism, monsters as well as a non-totalitarian and evolutionary rooted notions of harmony can be associated with beauty. This is an inclusive notion of being inclusive. Thus, cancel culture can be twisted and a process of uncancelling cancel culture can be generated. Selected works by Sven Helbig, Philip Glass as well as Eduardo Kac have been accused of affirming classic beauty with all its problematic discriminatory implications. However, the aforementioned reflections show that it can be possible to draw upon proportion, symmetry, and harmony without demanding universal validity of such a concept of beauty with all its problematic discriminatory implications.

## IX. Conclusion

Critical posthumanists want to overcome binary thinking. However, many do so by introducing and affirming new binaries. They merely accept the traditional binaries and turn the evaluation upside down. Classic beauty used to be good, and it becomes bad from a critical posthumanist perspective. Analogous processes occur with respect to the aesthetic of monsters which used to be seen as bad, which have become a new beauty standard in the aesthetics of critical posthumanism. The central challenge is that overcoming binary structures leads to a performative self-contradiction. What should be done instead is to twist categorically ontological binaries. Twisting the golden ratio due to the importance of health implies that it no longer is the fundamental universally valid response to the question of beauty, but that it remains a possible option. Thus, Glass, Helbig, and Kac deal with classic beauty. They have integrated a twisted notion of classic beauty in their artworks.

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# WELLBEING: A PHILOSOPHICAL PERSPECTIVE

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Anna Markopoulou\*

## **Abstract**

*The aim of this work is to examine the notion of wellbeing from a philosophical perspective and, in particular, to explore its origins and its development in the texts of ancient Greek philosophers. The main question that arises is why the philosophical approach to wellbeing is necessary in a research that focuses on digital wellbeing. The answer to this question is revealed as significant for this research, since in the age of digital technology the non-anthropocentric care of the self in ancient Greek philosophy can offer a new meaning to technology, that of a shift from its instrumental use that inevitably leads to technocratic and transhumanistic perceptions, to its posthuman dimension, that is the interweaving of human and technology.*

## **Keywords**

*wellbeing; digital wellbeing; intellectual wellbeing; non-anthropocentric care of the self; posthuman care of the self; eudaimonia; posthuman self.*

## **I. Introduction**

This chapter deals with the concept of *wellbeing* from a philosophical perspective and, in particular, examines the origins and development of this concept through the texts of ancient Greek philosophers. The questions that arise at the outset of this inquiry help define the principles on which the research's theoretical framework and the thematic structure of each chapter will be constructed.

From this point of view, exploring the concept of *wellbeing* from a *philosophical perspective* raises a first question: Why is the philosophical approach to *wellbeing* necessary in research that focuses on *digital wellbeing*? More specifically, what is the value of such an approach, and what unique contribution can it make to a study concerned with *wellbeing* within the context of contemporary digital reality?

As I will show in the following chapters, a philosophical approach is necessary in this research, since it contributes to clarifying and deepening of the concept of *wellbeing* and,

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further, to the justification of the choice of this concept and distinguishing it from other related notions, such as *happiness* or *prosperity*.

In this context I will draw clear distinctions, it is important first to examine and analyze the broader meaning that the concept of *wellbeing* acquired in ancient Greek philosophy namely *eudaimonia*, in contrast to today's notion of *happiness*, which is often associated with *materialistic values* and *consumerist patterns*. The emergence of this broader meaning of the concept of *wellbeing*, that is, a specific way of life that comes from and is associated with a philosophy of existence, presupposes a *non-anthropocentric* conception of *wellbeing*. This concept focuses on the *transcendence* of human nature.

From this perspective, in the second subchapter, I will highlight that this *non-anthropocentric* conception of *wellbeing* presupposes a *non-anthropocentric care of the self*. In this context, I will refer to specific examples of this *non-anthropocentric* notion of *care of the self* in the works of ancient Greek philosophers, so as to highlight its ultimate goal, which is the acquisition of one of the most important intellectual virtue, that is *phronesis*. Furthermore, I will highlight how *phronesis*, as an intellectual virtue and awareness of *measure*, contributes to an *intellectual wellbeing* that is, to *sober reasoning* (νηφάλιος λογισμός).

Finally, in the third subchapter, I will analyze the significant shift that took place in the era of modernity in terms of *care of the self*. More specifically, I will argue that this important transition from the *non-anthropocentric care of the self* towards the *care of an anthropocentric world* took place at the sixteenth century in Western Europe. In particular, I will explore how the neglect of *care of the self* in this period is inextricably linked to *anthropocentric perceptions* related that treated nature as an object of conquest and exploitation.

## II. The Broader Meaning of Wellbeing in Ancient Greek Philosophy: From Happiness to Eudaimonia

Nowadays, the concept of *wellbeing* refers only to the physical health and in this sense, its importance has shrunk to a highly materialistic concept related to *consumerism patterns*. In this context, modern humanity tends to believe that only the acquisition of a material wealth will offer him the desired *wellbeing*.

However, philosophy and, in particular, ancient Greek philosophy gives a completely different and much broader meaning to the concept of *wellbeing*: That of a *way of life* that originates from and is linked to a *philosophy of existence*. From this point of view, the concept of *wellbeing* is not identical with that of good mood, since the latter is a temporary and fleeting state of the moment. Also, wellbeing is different from prosperity, since *prosperity* has the exclusive and restrictive meaning of the *material wealth* of a population.

More specifically, this broader and completely different meaning of *wellbeing* is linked to that ancient Greek philosophy makes a *distinction* between *physical* and *intellectual wellbeing*, according to which the goal for human is not the acquisition of a *physical wellbeing*, such as, for example, the *wellbeing* of the body or even the immoderate pursuit of material wealth; on the contrary, what is the request for human is the acquisition of an *intellectual wellbeing*, which consists of mental balance and sobriety of reason, which will lead to a *measured* development and balanced enhancement of body and intellect.

In this context, Aristotle (384 BC – 322 BC) highlights the fact that human obtains the *wellbeing*, not through the acquisition of material goods, that are considered as

ephemeral, but through the acquisition of intellectual goods, that are considered as eternal and related to the virtues of the intellect. From this perspective, human, according to Aristotle, should be oriented towards the balanced development of the intellect and body, so that he has physical health, but also, at the same time, desire to cultivate the virtues of the intellect in order to achieve *eudaimonia*<sup>1</sup>.

The Stoic philosopher Epictetus (50 AD – 120 AD), made an important distinction between *happiness* and *eudaimonia*: He argued that the acquisition of *happiness* is, the most of the times, the result of chance, and, in this sense, is an temporary mood, which does not depend on human will. On the contrary, the acquisition of *eudaimonia* is the result of a conscious human choice; so, *happiness* is considered as an ephemeral situation, that, at any moment, can disappear, while *eudaimonia* is considered as an eternal situation, whose value and power are never lost<sup>2</sup>. From this perspective, the broader meaning of *wellbeing* (*eudaimonia*), lies in the fact that it is acquired through *free will*, that is the result of a conscious human choice; in this sense, *eudaimonia* is considered as the result of a way of life that comes from and is linked to a philosophy of existence; on the contrary, happiness, that is the result of a favorable circumstance, is considered as temporary and fleeting.

The pre-Socratic philosopher Democritus (460 BC – 370 BC), established a dialectical relationship between *happiness* and *eudaimonia*, which he called *gaiety* (*euthymia*). This word has the meaning of intellectual balance that comes as a result of moderation in pleasures and more broadly, this term refers to a life defined by balance and restraint<sup>3</sup>. In this context, the intellectual balance that constitutes *gaiety* is the product of the fruitful interaction and the consequent harmonization of two opposing and unequal forces: The *rational force* of *phronesis* and the *irrational force* of *happiness*. More specifically, *phronesis* is considered as a rational force, since it is viewed as an intellectual virtue, and, in this sense, it contrasts with irrational and temporary *happiness*, which, as I mentioned above, is the result of a favorable circumstance, since it is not considered as the product of a free will and a conscious choice.

The Pythagorean philosophers followed the same philosophical tradition, since they considered the birth of *eudaimonia* as the result of the influence of the rational power of *phronesis* on irrational and temporary *happiness*. More specifically, *phronesis* is that rational power of the intellect that limits, through *measure*, irrational happiness, so as to achieve the *wellbeing* of the entire human existence<sup>4</sup>. Later, in the Hellenistic period, Epicurus (341

<sup>1</sup> Aristotle, “On Phronesis,” 25, in M. David Litwa, ed., *Hermetica II: The Excerpts of Stobaeus, Papyrus Fragments, and Ancient Testimonies in an English Translation with Notes and Introductions* (Cambridge: Cambridge University Press, 2018), doi:10.1017/9781316856567, ISBN 978-1-107-18253-0, S2CID 217372464, accessed November 23, 2025.

<sup>2</sup> Epictetus, “On Virtue,” 132, in M. David Litwa, ed., *Hermetica II: The Excerpts of Stobaeus, Papyrus Fragments, and Ancient Testimonies in an English Translation with Notes and Introductions* (Cambridge: Cambridge University Press, 2018), doi:10.1017/9781316856567, ISBN 978-1-107-18253-0, S2CID 217372464, accessed November 23, 2025.

<sup>3</sup> Democritus, “On Virtue,” 210, in M. David Litwa, ed., *Hermetica II: The Excerpts of Stobaeus, Papyrus Fragments, and Ancient Testimonies in an English Translation with Notes and Introductions* (Cambridge: Cambridge University Press, 2018), doi:10.1017/9781316856567, ISBN 978-1-107-18253-0, S2CID 217372464, accessed November 23, 2025.

<sup>4</sup> Crito, or Damipus the Pythagorean, “On Phronesis and Happiness,” 63, in M. David Litwa, ed., *Hermetica II: The Excerpts of Stobaeus, Papyrus Fragments, and Ancient Testimonies in an English Translation with Notes and Introductions* (Cambridge: Cambridge University Press, 2018), doi:10.1017/9781316856567, ISBN 978-1-107-18253-0, S2CID 217372464, accessed November 23, 2025.

BC – 270 BC) highlighted the fact that *phronesis*, as an intellectual virtue, contributes to the intellectual *wellbeing*, that is, according to him, a *sober reasoning*<sup>5</sup>. The emphasis on the *intellectual wellbeing* characterizes the entirety of ancient Greek philosophy and reaches as far back as Neoplatonism. From this point of view, the Neoplatonic philosopher Plotinus (204/205 AD – 270 AD) highlights that the perfect, true and real wellbeing, that is, *eudaimonia*, is realized within the intellect<sup>6</sup>.

### III. Towards a Non-Anthropocentric Care of the Self: The Transcendence of Human Nature in Ancient Greek Philosophy

The broader meaning of *wellbeing* and, in particular, the shift towards an *intellectual wellbeing* in ancient Greek philosophy is part of a more general conception which is summarized in the concept of care of the self. In this section I will analyze this concept of *care of the self* in ancient Greek philosophy and how it arises from a broader meaning of philosophy, which is not limited to an academic activity, but is considered as a *way of life* and *existence*.

As the French philosopher Pierre Hadot states, philosophy and philosophical discourse appear to be incommensurable and inseparable. Their incommensurability derives primarily from the fact that, in the ancient time, one was considered a philosopher not on the basis of the originality or the abundance of one's philosophical discourse, but rather as a function of the way one lived. Above all, the goal was to become better and discourse was philosophical only if it was transformed into a *way of life*. This was true of the Platonic and Aristotelian traditions, which taught that the philosophical life culminated in life according to the intellect<sup>7</sup>.

In this light, then, for the ancient philosophers, *philosophical life* and *philosophical discourse* are *incommensurable*, primarily because they belong to entirely different orders of experience. The essential part of the philosophical life -the existential choice of a certain way of life, the experience of certain inner states and dispositions- wholly escapes expression by philosophical discourse. They are thus incommensurable-but also inseparable. There is no discourse which deserves to be called philosophical if it is separated from the philosophical life, and therefore a philosophical life cannot exist unless it is directly linked to philosophical discourse<sup>8</sup>.

Conversely, the philosophical life cannot dispense with philosophical discourse, provided that such discourse is inspired and animated by philosophy itself; for it constitutes an integral part of that life. From this point of view, we can consider the relationship between philosophical life and philosophical discourse in three different ways, which are closely linked. First, discourse justifies our choice of life and develops all its implications. We could say that through a kind of reciprocal causality, the choice of life determines discourse, and discourse determines our choice of life, as it justifies it theoretically. Second, in order to live philosophically, we must perform actions on

<sup>5</sup> Anna Ch. Markopoulou, "The Tetracharmakos (Fourfold Cure) and the Sober Reasoning in Epicurus: A Critical Philosophical Paradigm Against the Politicization of Medical Truth?," *Journal of Posthumanism* 2, no. 1 (December 28, 2022): 31–35, accessed November 23, 2025, <https://posthumanism.co.uk/jp/article/view/62>.

<sup>6</sup> Plotinus, "On Eudaimonia," in *Plotinus. The Enneads*, trans. A. H. Armstrong, Loeb Classical Library (Cambridge, MA: Harvard University Press, 1968–88), I.4 [46], 3 (24–39).

<sup>7</sup> Pierre Hadot, *Qu'est-ce que la philosophie antique?*, 172–173 (Paris: Gallimard, 1995).

<sup>8</sup> Hadot, *Qu'est-ce que la philosophie antique?*, 174.

ourselves and on others; and if *philosophical discourse* is truly the expression of an existential option, then from this perspective it is an indispensable means. Finally, *philosophical discourse* is one of the very forms of the *exercise* of the *philosophical way of life*, as dialogue with others or with oneself<sup>9</sup>.

In this context of the *philosophical way of life*, is included the *care of the self*, which means a lifelong search, a self-control, a unification of the philosophical theory with the practice of life. More specifically, the term *care of the self* was widely used by the Stoic philosophers and was highlighted much later by the French philosopher Michel Foucault<sup>10</sup> to denote the practices taught by the philosophers of antiquity. This *care of the self* (*ἐπιμέλεια εαυτοῦ*) is, according to Foucault, a part of the *art of existence* (*techné tou biou*), and is dominated by the principle that says one must “take care of oneself”. It is this principle of the *care of the self* that establishes its necessity, presides over its development, and organizes its practices. The common goal of these practices of the self can be characterized by the entirely general principle of *conversion to self*, of *epistrophé eis heauton*<sup>11</sup>, the examination of the self and, ultimately, the achievement of *eudaimonia*, that is, an *intellectual wellbeing* that, in turn, aims at freedom and inner self-sufficiency<sup>12</sup>.

From this perspective, the *care of the self* is an exercise (*askesis*) of auto-concentration, self-mastery and auto-discipline. As Hadot states, almost all the philosophical schools in ancient Greece advocated this practice of exercise. There was Platonic exercise, which involved renouncing bodily pleasures and adopting a specific dietary regimen that sometimes even extended to vegetarianism. This exercise was intended to weaken the body by means of fasting and sleeplessness, so that the individual could better achieve *wellbeing* of the intellect. Then there was Cynic exercise which advocated enduring hunger, cold, and insults, as well as eliminating all luxury, comfort, and artifices of civilization, in order to cultivate independence and stamina. There was Pyrrhonian exercise, which trained the individual to view all things as indifferent, since we cannot tell if they are good or bad. Also, there was that of the Epicureans, who limited their desires in order to accede, as mentioned above, to *sober reasoning* (*νηφάλιος λογισμός*). The Stoics, who corrected their judgements of objects by recognizing that we must not become attached to indifferent things, which are obstacles to achieving tranquility (*ataraxia*) of the intellect<sup>13</sup>.

However, the main goal of all these philosophical exercises is the *transcendence* of human nature and, in this sense, it can be argued that the *care of the self* has a *non-anthropocentric* dimension. From this perspective, Hadot states that all those philosophical exercises called for a kind of *self-duplication* in which the “I” refuses to be conflated with its desires and appetites, takes up a distance from the objects of its desires, and becomes aware of its power to *transcending* them. In this sense, philosophical exercises correspond to the movement by which the “I” concentrates itself upon itself to transcend it. At this point, philosophy as a *way of life* acquires its full meaning: to be a philosopher means, above all, to *become better* than itself; in other words, to deliberate itself from passions, appetites and desires and *transcending* itself.

<sup>9</sup> Hadot, *Qu'est-ce que la philosophie antique?*, 175.

<sup>10</sup> Michel Foucault, *Histoire de la sexualité 3: Le souci de soi* (Paris: Gallimard, 1984), 43.

<sup>11</sup> Foucault, *Histoire de la sexualité 3: Le souci de soi*, 64.

<sup>12</sup> Luc Ferry & Claude Capelier, *La plus belle histoire de la philosophie* (Paris: Robert Laffont, 2014), 46-47.

<sup>13</sup> Hadot, *Qu'est-ce que la philosophie antique?*, 189-190.

This *transcendence* of human nature, is emphasized by Plato (427 BC – 347 BC), as I mentioned above, gives a predominantly *non-anthropocentric* dimension to the *care of the self*. From the entire Platonic work, two important philosophical concepts were selected that highlight the culmination of this *transcendence* of human nature in the context of a *non-anthropocentric care of the self*: the first is the *exercise of death*, which Plato examines in detail in his work entitled *Phaedo or the Immortality of the Soul*, the second is *philosophical love* (eros), which the philosopher examines extensively in detail in the *Symposium*.

In Plato's work *Phaedo or the Immortality of the Soul*, philosophy is defined as an *exercise of death*<sup>14</sup>, since death is understood as the separation of the intellect from the body, the philosopher separates himself from the body and, thus, to *transcend* his human nature, in order to reach the pure *contemplation* of intelligible beings and the consequent *likeness* (homoiosis) to them. From this perspective, the *exercise of death* emerges as an aspect of a *non-anthropocentric care of the self*, since it constitutes the means of *purification* of the intellect and the consequent *transcendence* of the human nature. The ultimate goal of this *non-anthropocentric care of the self* that is, a conversion to self, is the achievement of *phronesis*, which, as an intellectual virtue, can lead to *eudaimonia*, that is the *intellectual wellbeing*. In Plato's *Symposium*, is emphasized the gradual reduction of human being to the *contemplation*, but also to the *creation* of the *intelligible beauty* (kallos), through the *pedagogical path* of Diotima's *philosophical love* (eros)<sup>15</sup>. In this sense, *philosophical love* emerges as an aspect of a *non-anthropocentric care of the self*, since the philosopher, through various *metamorphoses* of himself, participates to the *immortality* and, therefore, *transcends* his mortal, human nature and becomes *immortal*.

#### IV. The Significant Shift in the Era of Modernity: From the Non-Anthropocentric Care of the Self Towards the Care of an Anthropocentric World

The significant shift in Western Europe regarding the notion of *care of the self* seems to have taken place at the sixteenth century, when a new concept is emerged: That of *care of an anthropocentric world*. This conception stands in contrast to the ancient Greek concept of *non-anthropocentric care of the self* and gradually ends up dominating one sphere after another - politics, economics and science – while assigning to them a completely new meaning: This new meaning was no longer associated with *care of the self* understood, as mentioned above, as a concern for intellectual wellbeing, that is *eudaimonia*, but a meaning of a material wellbeing, that is *happiness* and *prosperity*. Thus, the care for the material world

<sup>14</sup> For a detailed analysis of the concept of exercise of death in Plato's works, see Άννα Χ. Μαρχοπούλου, «Η μελέτη θανάτου ως προϋπόθεση του φιλοσοφικού θεωρείν και του πολιτικού πράττειν στον Πλάτωνα» [“The exercise of death as a prerequisite for philosophical theory and political action in Plato”], in *Διεπιστημονικές (Επανα) Προσεγγίσεις στο Γεγονός του Θανάτου (Πρώτος Τόμος)* [Interdisciplinary (Re)Approaches to the Event of Death (Volume One)], ed. Αλέξανδρος-Σταμάτιος Αντωνίου (Αθήνα: Gutenberg, 2023), 234–251.

<sup>15</sup> For a detailed analysis of the soul's reductive path towards the vision of the intelligible Beauty in Diotima's speech in Plato's *Symposium*, see Άννα Μαρχοπούλου, «Οι διαβαθμίσεις της ιδέας του Κάλλους στο πλατωνικό Συμπόσιον και η λειτουργία των θεωρητικών αρετών.» [Les grades de l'idée de Kallos au Banquet de Platon et la fonction des vertus contemplatives], *Παιδαγωγικός Λόγος* 1 (2012): 73-86 and Άννα Μαρχοπούλου, «Η ψυχή θεωρός και δημιουργός του νοητού Κάλλους στο πλατωνικό Συμπόσιον και η λειτουργία των αρετών της νοερώς ενεργούσης ψυχής.» [L'âme contemplative et créatrice du Kallos intelligible au Banquet de Platon et la fonction des vertus théorétiques], *Παιδαγωγικός Λόγος* 2 (2012): 29-46.

and its conquest by the human being, now becomes the dominant care in the era of modernity<sup>16</sup>. This care of an anthropocentric world, which is still dominant, is related, as mentioned in the introduction, to today's materialistic values associated with consumerist patterns.

From this point of view, the primary characteristic of this era, the so-called *era of modernity*, is the *rupture* with tradition. However, this rupture is not necessarily polemical, but is manifested as a kind of *Prometheanism*: The modern human being decides, if not to destroy the tradition, at least to start from the beginning the effort of previous generations for reflection<sup>17</sup>. In this sense, as Evi Sampanikou aptly points out, speaking of postmodernity, that the *era of modernity* can be characterized as the *era of the palimpsests*<sup>18</sup>. In other words, it is the era when everything characterized as old it is questioned with lightness and irony.

From this perspective, the *first characteristic* of the era of modernity is that it denies the authority of the Ancients and affirms the autonomy of thought. The spirit of inquiry becomes its motto, which attempts to deliberate the world from its mysterious dimension. The *disenchantment of the world* (according to Max Weber's favorite expression), is intertwined with the self-confidence of modern human and lies in the rupture with the ancient view of a hierarchical world, to whose order human being had to submit<sup>19</sup>. Human being now distances himself from nature which loses its sanctity and from an object of *admiration* and *contemplation* becomes an object of *exploitation*.

The *second* important *characteristic* of the era of modernity is the autonomy from nature and, further, the *domination* over nature<sup>20</sup>. Nature is regarded as weak, since it is governed by blind mechanisms, which only human being can control and further prevail. In this sense, modern human being sets as his main mission the domination over nature. This anthropocentric domination over nature leads to its exploitation and, further, highlights a *material wellbeing*, that is *happiness* and *prosperity*, which, in its turn, will constitute the basis of the *optimism* of modern human being as well as the core of the concept of *progress*, which culminated in the Age of Enlightenment. This progress is conceived as a form of emancipation of human being from nature and its *prosperity* that is linked, according to the philosophers of the Enlightenment, to the control and domination of a nature. Thus, philosophers in the era of modernity detach themselves from theological or naturalistic interpretations and are more closely associated with *anthropocentric interpretations* that are based on the immanent existence of human being into the world<sup>21</sup>.

To recapitulate what I have discussed so far, I would like to mention that the anthropocentric worldview, whose triumph is embodied by the age of Enlightenment,

<sup>16</sup> Jean Patočka, *Essais hérétiques sur la philosophie de l'histoire* (Paris: Verdier 2007), 141.

<sup>17</sup> Jean-Michel Besnier, *Histoire de la philosophie* (Paris: Grasset 1993), 16.

<sup>18</sup> Εύη Δ. Σαμπανίκου, «Εισαγωγή. Η τέχνη στην τρίτη δεκαετία του 21<sup>ου</sup> αιώνα: από το μεταμοντέρνο παλίμψηστο στη μεταουμανιστική συνύφανση.» Στο Stefan Lorenz Sorgner, *Φιλοσοφία της Μεταουμανιστικής Τέχνης* Επιστημονική Επιμέλεια και Επιμέλεια Μετάφρασης Εύη Σαμπανίκου, Γλωσσάρι και Επιμέλεια Μετάφρασης Φιλοσοφικών όρων Άννα Μαρκοπούλου, Μετάφραση Ηρακλής Οικονόμου (Θεσσαλονίκη: Epikentro, 2024), 8 [Evi D. Sampanikou. "Introduction. Art in the third decade of 21st century: from the postmodern *palimpsest* to the posthuman *interweaving*." in Stefan Lorenz Sorgner, *Philosophy of Posthuman Art*. Edited and Translated by Evi Sampanikou - Glossary and Translation Editing of Philosophical Terms by Anna Markopoulou - Translation by Iraklis Economou (Thessaloniki: Epikentro 2024)].

<sup>19</sup> Ferry & Capelier, *La plus belle histoire de la philosophie*, 217.

<sup>20</sup> Jean-Michel Besnier, *Histoire de la philosophie* (Paris: Grasset 1993), 17.

<sup>21</sup> Besnier, *Histoire de la philosophie*, 18.

survives until today, in the context of a shift from the ancient Greek concept of *non-anthropocentric care of the self* towards the *care of an anthropocentric world*. This *anthropocentric worldview* is the reason why human being has set himself against nature, which is treated until today as an object of *domination* and *exploitation*.

## V. Epilogue

To summarize what I have discussed so far, I would argue that the broader meaning of *wellbeing* in ancient Greek philosophy lies in its *non-anthropocentric* dimension and is associated with a *philosophy of existence* that focuses on the *transcendence* of human nature. This broader meaning of wellbeing and, in particular, the shift towards an *intellectual wellbeing* in ancient Greek philosophy, that is *eudaimonia*, is part of a more general conception which is summarized in the concept of a *non-anthropocentric care of the self*. In the age of digital technology, human still lives in the *anthropocentric era* of the *disenchantment* of the *world* and, more than ever before, has set as his main mission the domination over nature, through the *instrumental* use of technology. Nowadays, this *anthropocentric worldview* has led to an unprecedented *reification* of technology which, in turn, conducts to the ecological destruction of the planet. It is this destruction that now underscores the urgent necessity of a return to a philosophy of wellbeing centered on the *non-anthropocentric* and *posthuman care of the self*.

In this light, this broader and non-anthropocentric meaning of wellbeing in ancient Greek philosophy, emerges as, not only useful, but also necessary in the research of *digital well-being*. In other words, the *non-anthropocentric care of the self* in ancient Greek philosophy can offer a new meaning to technology, that of a shift from its *instrumental use* that inevitably leads to *technocratic* and *transhumanistic* perceptions, to its *posthuman dimension*, that is the *interweaving* of human and technology<sup>22</sup>. Thus, the research on the digital wellbeing can be structured on the basis of a value system that prioritizes the consideration of digital technology as an *inherent extension* of the human and, as a consequent concern and ultimate goal, the approach to the wellbeing from the perspective of a *non-anthropocentric care of a posthuman self*.

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<sup>22</sup> For a detailed analysis of the *interweaving* of human and technology see Stefan Lorenz Sorgner, *We Have Always Been Cyborgs* (Bristol: Bristol University Press 2023). See also Stefan Lorenz Sorgner, *Philosophy of Posthuman Art* (Basel: Schwabe Verlag 2022).

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# WELLBEING: TOWARDS THE CONSTRUCTION OF A POSTHUMAN SELF

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## **Abstract**

*The aim of this work is to examine the notion of wellbeing from a philosophical perspective and, in particular, to explore the inclusive dimension of nature in ancient Greek philosophy. In this respect, relevant texts will be explored, which highlight the continuity and the kinship of humans with all living beings within a context of a non-anthropocentric perception of wellbeing. In the light of a research that focuses to digital wellbeing we considered as important to explore the relation of human with the other side of the non-human. This research, allows us to claim that ancient Greek philosophy can offer a multitude of new meanings to digital wellbeing of nowadays, in the direction of interweaving of human and technology, so that to construct a posthuman self.*

## **Keywords**

*wellbeing; non-anthropocentric wellbeing; ancient Greek philosophy; digital wellbeing; inclusive nature; other side of the non-human; genres of phantasy; science fiction; space travels; posthuman self.*

## **I. Introduction**

This chapter examines the concept of *wellbeing* from a philosophical perspective. In the first section examines the *inclusive* dimension of nature in ancient Greek philosophy, a dimension which draws its origins from a *non-anthropocentric* understanding of *wellbeing*. In this light, drawing on relevant texts from ancient Greek philosophers, that this *inclusive* dimension of nature presupposes the denial of drawing a *boundary* between humans and other animals.

Furthermore, this *non-anthropocentric* conception of *wellbeing*, implies a concrete *philosophical way of life*, one that involves abstaining from animal food and avoiding the infliction of pain on animals. From this point of view, it will also be highlighted that this *inclusive* dimension of nature derives from the philosophers' perception that nature is an object of *admiration* and *contemplation* and not exploitation. In this respect, relevant texts

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will be explored, which highlight the *continuity*, but also the *kinship* of humans with all living beings will be examined.

In the light of a research that focuses in *digital wellbeing* it is important to explore the relation of human with the *other side of the non-human*, and, in particular, from a *posthuman* point of view, to detect the elements that could highlight various aspects of *interweaving* of human and technology. From this point of view, in the second section of this work, will be detected into relevant texts which covered a period extended from the Homeric epics to the post-Byzantine period, the significant elements that constitute the literary genre called *science fiction*, with references to *artificial forms of life* and to *artificial intelligence*, to *humanoids* (αυτόματα) and to *space travels*.

## II. The Inclusive Dimension of Nature in Ancient Greek Philosophy

In ancient Greek philosophy, the supremacy of human being over other animals was not accepted. This was largely due to the fact that most philosophical schools refused to draw a sharp boundary between human being and other animals, while at the same time, some of these schools strictly prohibited the consumption of meat, as well as the infliction of pain on animals.

Pythagoras (580 BC – 490 BC) was the first philosopher to prohibit not only the consumption of meat, but also the slaughter of animals, on the one hand because he believed that all living beings, as long as they have a soul, are equal and have equal rights, but also, on the other hand, because he taught that abstinence from meat leads to *purification* and, ultimately, to the *wellbeing* of the body and intellect.

In this regard, Diogenes Laertius (3rd century AD), the biographer of ancient Greek philosophers states, “Pythagoras instituted this diet who forbade the slaughter, not to mention the eating, of animals-since their souls, in common with ours, possess justice. But this was only a pretext. His real reason for forbidding the consumption of sentient animals was to train and accustom human beings to be content with their diet, so they could live on the most easily procurable foodstuffs, spreading their tables with uncooked food and drinking only water. For this diet would result in a healthy body and a keen mind.”<sup>1</sup>.

Two Neoplatonic philosophers, Porphyry (Porphyrius) from Tyre in Phoenicia (234 AD – 305 AD) and Iamblichus from Chalcis in Syria (250 AD – 325 AD), whose works are considered reliable sources for the life and philosophy of Pythagoras, also emphasized the important role of prohibition of meat consumption in Pythagorean philosophy, a perception which they attribute to the important role of the vegetarian diet for the *wellbeing* of all human beings.

Porphyry points out that Pythagoras was the first to introduce to Greece the notion that all living beings are related to each other and states in this regard that, “However, well-known to all is [...] the theory [...] that animated beings must be considered as kin and should be considered as belonging to one great family. Pythagoras is mentioned as the first to introduce these teachings to Greece”<sup>2</sup>.

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<sup>1</sup> Diogenes Laertius, “Pythagoras”, 8, 13 in *Lives of the Eminent Philosophers*. Translated by Pamela Mensch. Edited by James Miller, (Oxford: Oxford University Press, 2018).

<sup>2</sup> Porphyry, *The Life of Pythagoras*, 19.

Iamblichus highlights the important role of prohibition of meat consumption in Pythagoras' philosophy considered as indispensable for *wellbeing* of the intellect, as well as the fact that Pythagoras recommends mainly to legislators who establish laws and apply the justice, to abstain from meat consumption, since this constitutes an act of injustice against animals which, due to their kinship with human being, they are considered as conjoined to the human beings by a fraternal alliance. He states, "<Pythagoras> was likewise careful in preventing others from destroying animals that are of a kindred nature with us, and rather corrected and instructed savage animals through words and deeds, than injured them through punishment. And further still, he also enjoined those politicians that were legislators to abstain from animals. For as they wished to act in the highest degree justly, it is certainly necessary that they should not injure any kindred animal. [...] For through the communion of life [...] they are as it were conjoined to us by a fraternal alliance"<sup>3</sup>.

The pre-Socratic philosopher Empedocles (495 BC - 435 BC) from Acragas in Sicily in Southern Italy, follows and continues the Pythagorean tradition of abstinence from animal food, for he considers very important for the *wellbeing* of all human beings; from this regard, it is significant that Empedocles would have preferred to die before the thought of eating meat even crossed his mind. He says, "Alas that the pitiless day of death did not first destroy me before I contrived the wretched deed of eating flesh with my lips."<sup>4</sup> It is quite possible that Empedocles' abstinence from animal food was due, as in the case of Pythagoras, to his belief in the *metempsychosis*, that is the supposed transmigration at death of the soul of a human being or animal into a new body of the same or a different other species of living beings. He says, "For already have I once been a boy and a girl, a bush and a bird, and a dumb sea fish"<sup>5</sup>.

However, the main reason why there was no clear boundary between the human and the non-human is that nature in ancient Greek philosophy was perceived as a whole of which human being was only a part. From this point of view, the pre-Socratic Ionian philosopher Anaximander (c. 610-c. 546 BC), can be considered an early proponent of science and an early ecologist, since he compared human laws with the laws of nature. Anaximander highlights the notion of *apeiron* as the unified principle of the world, from a *non-anthropocentric* perspective, since *apeiron* is considered as an *impersonal principle* of a *neuter* gender. In particular, the *apeiron* emerges as an *immanent principle* of an eternal creation, repeating itself according to a *universal law*, which, in its turn, shapes a *universal justice* and a *universal ethics*, based on which *hubris* is *life* while, conversely, *justice* is *death*<sup>6</sup>.

<sup>3</sup> Iamblichus' *Life of Pythagoras*, 24 (107-109). Translated from Greek by Thomas Taylor, (London: Printed by A. J. Valpy, 1818).

<sup>4</sup> Empedocles, B 139. Porphyrius, *de abstinentia* II 31, in G. S. Kirk & J. E. Raven, *The Presocratic Philosophers* (Cambridge: Cambridge University Press, 1957).

<sup>5</sup> Empedocles B 117, Diogenes Laertius VIII, 77 in G. S. Kirk & J. E. Raven, *The Presocratic Philosophers*.

<sup>6</sup> Anna Markopoulou, "The notion of *apeiron* (ἄπειρον) in Anaximander's Ontology: Tracing the origins of Critical Posthumanism?," *Paper presented at the 13<sup>th</sup> Beyond Humanism Conference: Crises and the Posthuman Post-Trans- and Metahumanist Reflections on Contemporary Challenges*, 3 – 7 July 2023 University of the Aegean / Mytilini – Lesbos – Greece, [https://metabody.eu/wpcontent/uploads/2023/06/13thBHC\\_ABSTRACT\\_BOOKLET.pdf?fbclid=IwAR2bikPXFVptq7\\_qa2C00g5lIRU\\_fN\\_WaknhAoP9fpT5z1Mk0EiOqdU\\_Q](https://metabody.eu/wpcontent/uploads/2023/06/13thBHC_ABSTRACT_BOOKLET.pdf?fbclid=IwAR2bikPXFVptq7_qa2C00g5lIRU_fN_WaknhAoP9fpT5z1Mk0EiOqdU_Q) (accessed: November 30, 2025).

From this perspective, Anaximander can first be mentioned as one of the oldest pedigrees of posthuman discourse<sup>7</sup>.

In this context, nature was perceived as a living and animated being, as an object of *contemplation* and *admiration*, not as an object of *exploitation*. In this sense, Aristotle states, “For, both now and first, human beings began to philosophize through wonder; at first indeed admiring such dubious particulars, as were of an easier solution; but afterwards proceeding in this manner gradually, they began to doubt about things of greater importance, such as concerning the properties participated by the moon, the sun, and the stars, and the generation of the universe. But he who doubts and wonders, is of opinion that he is ignorant [...] so that if now and at first human beings philosophized, in order to fly from ignorance, it is evident that they pursued scientific knowledge for the sake of knowing, and non for the sake of any use”<sup>8</sup>.

According to American philosopher Martha Nussbaum, Aristotle closely connects admiration with the recognition of life, human and non-human<sup>9</sup>. As she states, when Aristotle’s students seem to have reacted to his teaching about animals and their abilities, considering that animals are inferior to humans and not divine like the stars in the sky, he told them that someone can find everywhere in nature admirable forms of organized function<sup>10</sup>. This perception of Aristotle derives from the *teleological* explanation he proposes for the world, according to which nature creates nothing without purpose (telos). He argues, “Nature does nothing in vain, but always acts in the best possible way according to the substance of each kind of animal.”<sup>11</sup>

In this regard, Aristotle interprets the structure, movement, reproduction and, further the behavior of a living being, based on its purpose, its *telos*, which is *the Good* (Agathon). Thus, as Nussbaum argues, “Aristotle considers even the bodily appetites - hunger, thirst, sexual desire - as forms of *intentional awareness*, containing a view of their object. For he consistently describes appetite as *for*, *directed at*, “the apparent good.” Appetite is one forme of *orexis*, a “reaching out for” an object; and all the forms of *orexis* see their object in a certain way, supplying the active animal with a “premise of the good.”[...] Aristotle also holds that appetite-unlike, for example, the animal’s digestive system-is responsive to reasoning and instruction. [...] He is talking about human appetite here, but he recognizes much continuity between humans and other animals, with respect to the capacity for acting from a (modifiable) view of the good.”<sup>12</sup>.

In this context, Aristotle argues, “For all animals both move and are moved for the sake of something. [...] But we see that the things which move an animal are, the

<sup>7</sup> Evi D. Sampanikou & Jan Stasienco [eds.], *Posthuman Studies Reader Core Readings on Transhumanism, Posthumanism and Metahumanism*, Posthuman Studies, vol. 2, (Basel, Schweiz: Schwabe Verlag 2021), 17.

<sup>8</sup> Aristotle, *The Metaphysics I*, 982b12-21. Translated from the Greek by Thomas Taylor, Published by The Prometheus Trust, Volume XXIII of the Thomas Taylor Series, (United Kingdom: The Prometheus Trust, 2003).

<sup>9</sup> It is important to note that Nussbaum approaches this *non-anthropocentric* view of nature in the light of the *capabilities theory* she develops in her book, with an emphasis on *wellbeing*. As she states, “This emphasis on wellbeing and on a multitude of basic opportunities makes capabilities theory suitable as a basis for a theory of justice for both animals and humans.”, Martha C. Nussbaum, *Justice for Animals: Our Collective Responsibility* (New York, London, Toronto, Sydney, New Delhi: Shimon & Schuster 2023), 116.

<sup>10</sup> Martha C. Nussbaum, *Justice for Animals*, 41.

<sup>11</sup> Aristotle, *De incessu animalium*, 2 704b15-17.

<sup>12</sup> Martha C. Nussbaum, *The Therapy of Desire Theory and Practice in Hellenistic Ethics* (Princeton New Jersey: Princeton University Press, 1994), 81.

dianoetic power, sense, phantasy, previous choice, will, anger and desire. And all these are referred to intellect and appetite. For the phantasy and sense have the same place with intellect, since both possess a power of judging. [...] The will, however, anger and desire, are all of them appetites; and previous choice is common both to the dianoetic power and appetite, and, therefore, this is also true of the object of the previous choice.”<sup>13</sup>.

From this perspective, according to Nussbaum, Aristotle expressed a great interest for the research of common points between humans and other animals, as he advocated that all animals pursue their purpose (telos), using intellectual abilities (perception, phantasy and desire) and forms of desire and emotion, trying to preserve each of them their particular form of life<sup>14</sup>.

Theophrastus (370 BC – 287 BC), the Greek philosopher from Eresos on Lesbos, became the successor to Aristotle as the head of the Peripatetic school in Athens. He argues, following his teacher, that humans are related to all living beings, because both their desires, their senses, and their *reasoning* are related to each other. He states, “If, however, what we have said is true, that such is the generation of the manners of animals, all the tribes of them are indeed intellectual. [...] And if this be admitted, the genus of other animals has an affinity, and is allied to us. [...] Hence, since animals are allied to us, if it should appear, according to Pythagoras, that they allotted the same soul that we are, he may justly be considered as impious who does not abstain from acting unjustly towards his kindred”<sup>15</sup>.

The Neoplatonic philosopher Porphyry mentioned earlier, in his work *On Abstinence from Animal Food*, follows Theophrastus, whose work entitled *On Piety* survives almost in its entirety. It is important to be mentioned that this work of Porphyry constitutes the most systematic and fervent support for vegetarianism with ethical arguments. It is a text with an almost polemical character, in which Porphyry aims to refute the arguments of those who consume and sacrifice animals, and, further, of those who destroy animals, in order to support his argument in favor of vegetarianism. On this occasion, Porphyry offers a significant wealth of information about the tradition related to the respect that the ancient Greek society had for animals<sup>16</sup>.

We would like to close this section with a text by the eclectic philosopher Celsus (second half of the 2nd century AD), which highlights with great clarity the *non-anthropocentric perception* of the nature and further of the all universe. Celsus states, “each thing comes into being and dies for the good of the whole – according to the process of change. [...] why *should* [sic] things have been created more for human’s nourishment than for the benefit of the plants and trees, the grass and the thorns? [...] And if it is said that human beings are better than the irrational animals because we live in cities and occupy prominent offices and the like-I say this proves nothing: ants and bees do as much; or at any rate, the bees elect leaders and a stratified social system of leaders. [...]

<sup>13</sup> Aristotle, *On the Common Motion of Animals*, 6 700b17-24. Translated from the Greek by Thomas Taylor, Published by The Prometheus Trust, Volume XXIV of the Thomas Taylor Series, (United Kingdom: The Prometheus Trust, 2003).

<sup>14</sup> Martha C. Nussbaum, *Justice for Animals*, 93.

<sup>15</sup> Theophrastus, “On Piety” 20 in Porphyry, *On Abstinence from Animal Food III*, 25-26.

<sup>16</sup> Martha Nussbaum states, “Porphyry’s *on Abstinence from Animal Food* is an excellent work with many details and extremely strong arguments that should be prominently featured in philosophy curricula, although few philosophers know anything about it. However, these points of views were increasingly marginalized by the rise of Christianity.”, Martha C. Nussbaum, *Justice for Animals*, 55.

they have their weapons and wage their wars, slay vanquished, build cities and even suburbs. [...] And the ants are no less clever [...] they have a fully developed intelligence- and it seems they have as well a clear-cut notion of certain universal laws, and even a voice to make the experience of their learning known to others of their kind. [...] From all this it can be seen that all things have not been made for human being- any more than for the lion, the eagle, or the dolphin [...] but rather for the good of the universe as a whole”<sup>17</sup>.

### III. The Other Side of the Non-human and its Extension, From the Homeric Epics to the Post-Byzantine Period: The Origins of the Genres of Fantasy and Science Fiction

The presence of the *other side* of the *non-human* is constant and significant in ancient Greek literature: It is already traced in the Homeric epics, in two separate myths that refer to the *humanoids* (αυτόματον)- a notion that originates from Homer and is detected many times in the *Iliad* – that can be considered as the first references to *artificial forms of life* and possibly of *artificial intelligence*.

From this regard, in *Iliad's Rhapsody XVIII*, a few verses before the description of Achilles' shield ordered by Thetis, Homer mentions that Hephaestus is assisted by a group of Gold handmaids, who fit the description of the automaton, as they seemed alive and possessed reason and power. Also it is interesting the information that these *female humanoids* (αυτόματα) have been taught by the gods the art of making artifacts. Homer says, “Handmaids ran to attend their master <Hephaestus>, all cast in gold but a match for living, breathing girls. Intelligence fills their hearts, voice and strength their frames, from the deathless gods they've learned their works of hand”<sup>18</sup>.

In the second myth, in *Odyssey's Rhapsody IX*, Homer describes the ships of the Phaeacians as *unsinkable ships*, which have no rudders, no oars, no navigators, but are steered only by the mind. Homer mentions, “And tell me your land, your people, your city too, so our ships can sail you home-their wits will speed them there. For we have no steersmen here among Phaeacian's crews or steering-oars that guide your common craft. Our ships know in a flash their mates intentions, know all ports of call and all the rich green fields. With wings of the wind they cross the sea's huge gulfs, shrouded in mist and cloud-no fear in the world of foundering, fatal shipwreck”<sup>19</sup>.

Furthermore, Plato in his work *Minos or On Law*, mentions that the mythical king Minos used Talus, a humanoid (robot) created by Hephaestus, as a guardian of the laws in Crete. For Talus made a circuit three times a year through the villages of Crete and guarded the laws in them by having the laws written down on bronze tablets-as a result of which he was called “brazen”<sup>20</sup>.

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<sup>17</sup> Celsus, *On the True Doctrine V*, Translated with a General Introduction by R. Joseph Hoffmann (New York: Oxford University Press, 1987), 82-85.

<sup>18</sup> Homer, *Iliad's Rhapsody XVIII*, Translated by Robert Fagles. Introduction and Notes by Bernard Knox (London: Penguin Books Ltd, 1991), 488-491.

<sup>19</sup> Homer, *Odyssey's Rhapsody VIII*, Translated by Robert Fagles. Introduction and Notes by Bernard Knox (London: Penguin Books Ltd, 1996) 623-631.

<sup>20</sup> Plato, *Minos or On Law* 320c 5-9.

In this context, according to Pseudo-Apollodorus's *The Library* (1st or 2nd century AD), some say that Talus was a human of the Brazen Race of Hesiod, others that he was a *humanoid* (robot) given to Minos by Hephaestus; he had a single vein extending from his neck to his ankles, and a bronze nail was rammed home at the end of the vein. Talus kept guard, running round the island of Crete thrice every day; wherefore when he saw the Argo, the ship of the Argonauts, standing inshore, he pelted it as usual with stones. His death was brought by the wiles of Medea, whether she drove him mad by drugs, or, as others say, she promised to make him immortal and then draw out the nail, so that all the ichor (ιχώρ) gushed out and he died<sup>21</sup>.

Lucian of Samosata, a Syrian satirist and rhetorician of late antiquity, who was born around 120 AD in Samosata, the capital of Commagene, on the upper Euphrates in Syria, with his two works *Icaromenippus* or *The Sky-man* and *A True Story*, could be considered the “father” of the genres of fantasy and science fiction. In particular, his second work, called *A True Story* with the significant subtitle *A Journey to the Island of the Moon*, is a real literary Odyssey of space, since it tells how Odysseus' ship was seized by a terrible whirlwind and, after traveling seven days in space, arrived at the Moon, where he found himself in the middle of an interplanetary war between Endymion, king of the Moon, and Phaethon, king of the Sun. He even describes non-human beings as inhabitants of the Moon and the Sun, such as the *vine-women* who captured Odysseus' companions, transforming them into vines as well<sup>22</sup>: It is worth noting here that stereotypical ways of representing the female gender are detected that *captivate* the male and *trap* him in their nets. Also Lucian describes the *Psyllotoxotans* who ride upon great fleas, of which they have their denomination and the very impressive figures of *Lachanopters*, which is a mighty great fowl and instead of feathers covered thick over with wort leaves; but their wing feathers were much like the leaves of lettuces<sup>23</sup>. This description associatively directs us to the paintings of the Dutch Renaissance painter Hieronymus Bosch (1450-1516)<sup>24</sup>, who was considered as another “father” of the fantastic and science fiction.

The second part of Lucian's *A True History* is very interesting, for it is described how, after the return journey from the Moon and the ship's landing, a monstrous whale, of a huge breadth and height, big enough to contain a city that would hold ten thousand men, swallows the ship along with its passengers<sup>25</sup>. At this point, a distant thematic similarity can be detected between Lucian's whale and the *Nautilus* in Jules Verne's *Twenty Thousand Leagues Under the Sea*, in which the French novelist varies the theme according to his own needs, replacing the whale with the submarine. Of course, one cannot avoid comparing Lucian's story with the biblical Jonah in the *Old Testament*<sup>26</sup>. And of course, Lucian and Verne's journey was transferred to the cinema screen at the beginning of the 20th century (1902) by Georges Méliès (1861-1938), in the film *Le Voyage dans la Lune* (“A Trip to the Moon”), during the period of the birth of the seventh art. Finally, it is worth noting here that, many centuries later, with the great revolution in the development of astronomy,

<sup>21</sup> Pseudo-Apollodorus, *The Library* I, ix. 26.

<sup>22</sup> Lucian, *A True Story A'*, 8-9.

<sup>23</sup> Lucian, *A True Story A'*, 13.

<sup>24</sup> For his work, see the book of Walter Bosing, *Hieronymus Bosch c. 1450-1516: Between Heaven and Hell*, Published by Taschen, 1987.

<sup>25</sup> Lucian, *A True Story A'*, 30-31.

<sup>26</sup> *Old Testament*, book 36: “Jonah”.

Kepler (1571-1630) translated Lucian's work *A True History* into Latin, while he himself describes an imaginary journey into space.

We would not consider this chapter complete without a reference to the art of the Byzantine-medieval and post-Byzantine world. The text of the *Physiologus* of late antiquity<sup>27</sup> was widely distributed in the Byzantine world and was used in post-Byzantine examples. The text is a description of all existing species, including imaginary beings, among which the dragon (a symbol existing in the East and the West) and the unicorn. Thus, while in Western medieval tapestries (tapisseries), the unicorn is traditionally depicted as a goat or a horse with one horn and is tamed by a virgin according to Western myth, in the East it arrives through the novel *Barlaam and Joasaph* in a much later representation (1637)<sup>28</sup>, as a symbol of death. This is a reenactment of the story of the parable of the *raging unicorn*. According to this allegory, the timeless human being is ascended to the tree of life whose roots are eaten by two mice (day and night). The human being is described as devoted to the pleasures of life, as his attention is focused on the honey that flows in the tree of life, without perceiving the decay of the tree by time nor the death that approaches him, having a form in which the *interweaving* of dragon and unicorn has been accomplished. We thus have a particularly early example of the *interweaving* of forms in a work of art that can be retrospectively understood as a *posthuman* example<sup>29</sup>.

#### IV. Epilogue

To summarize what we have discussed so far, we argue that the *inclusive* dimension of nature in ancient Greek philosophy, draws to a *non-anthropocentric wellbeing*, through a concrete *philosophical way of life*, which includes the abstinence from animal food as well as the refusal to cause pain to animals. From this point of view, the supremacy of human being over other animals was not accepted by the ancient Greek philosophers. This was

<sup>27</sup> In manuscripts, the unicorn appears as a goat with one horn in the illustration of *Physiologus* during the 9th century AD (*Bern Physiologus*, 9th century – *Smyrna Physiologus*, 11th century) and in Cosmas Indicopleustes. For the text: Εύη Δημ. Σαμπανίκου, «Η εικονογράφηση της σκηνής του *μυθομένου μονοκέρωτος* από το μυθιστόρημα *Βαρλαάμ και Ιωάσαφ* στην ελλαδική μεταβυζαντινή τοιχογραφία» [Evi D. Sampanikou, The illumination of the “raging unicorn” scene, from the “Barlaam and Ioasaf” romance in Greek Post-Byzantine wall-painting], *Δωδώνη, Επιστημονική Επετηρίδα του Τμήματος Ιστορίας και Αρχαιολογίας της Φιλοσοφικής Σχολής του Πανεπιστημίου Ιωαννίνων*, τόμος 19 (1990), τεύχος 1, υποσημείωση 1, 128. <https://olympias.lib.uoi.gr/jspui/handle/123456789/6135> (accessed: November 30, 2025).

<sup>28</sup> It is a didactic work written in the middle of the eleventh century, with Buddhist origins, Manichaean influences, as well as influences from Arabic and Persian myths. The first Christian version is in the Georgian language. From the Georgian text, it was translated into Greek, while translations into Slavonic, Russian and Serbian followed. For the text: Εύη Δημ. Σαμπανίκου, «Η εικονογράφηση της σκηνής του *μυθομένου μονοκέρωτος* από το μυθιστόρημα *Βαρλαάμ και Ιωάσαφ* στην ελλαδική μεταβυζαντινή τοιχογραφία» [Evi D. Sampanikou, The illumination of the “raging unicorn” scene, from the “Barlaam and Ioasaf” romance in Greek Post-Byzantine wall-painting], *Δωδώνη, Επιστημονική Επετηρίδα του Τμήματος Ιστορίας και Αρχαιολογίας της Φιλοσοφικής Σχολής του Πανεπιστημίου Ιωαννίνων*, τόμος 19 (1990), τεύχος 1, 127-157. <https://olympias.lib.uoi.gr/jspui/handle/123456789/6135> (accessed: November 30, 2025). Also: Ευαγγελία-Εύη Σαμπανίκου, (Δημήτριος), *Ο τοιχογραφικός διάκοσμος των Τριών Ιεραρχών στη Μονή Βαρλαάμ Μετεώρων (1637)*, Ιωάννινα 1996 [*The Wall-Paintings of the Three Hierarchs Chapel, Barlaam Monastery, Meteora, 1637*, Ioannina 1996], 92-94 <https://www.didaktorika.gr/eadd/handle/10442/6191> (accessed: November 30, 2025).

<sup>29</sup> As Stefan Lorenz Sorgner points out, “the aesthetic of *interweaving* is the main characteristic of posthuman art”, Sorgner, Stefan Laurenz. *Philosophy of Posthuman Art*. (Basel: Schwabe Verlag, 2022), 38.

largely due to the fact that most philosophical schools refused to draw a clear boundary between human being and other animals, while at the same time, some of these schools strictly prohibited the consumption of meat, as well as the infliction of pain on animals.

In the light of a research that focuses to *digital wellbeing* we considered as important to explore the relation of human with the *other side of the non-human*, and, in particular, to detect the elements that could highlight various aspects of *interweaving* of human and technology. This research into relevant texts, which covered a period extended from the Homeric epics to the post-Byzantine period, allows us to claim that ancient Greek philosophy can offer *new meanings* to *digital wellbeing* of nowadays, in the direction of *interweaving* of human and technology, so that to construct a *posthuman self*.

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# VISUAL ARTS IN THE POSTHUMAN ERA

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## **Abstract**

*The aim of this work is to examine the state of the art in the age of Posthuman and, in particular, to explore the emergence of the new meanings of art in the context of Posthumanism. In this respect, we examine the state of the art from the metabumanistic, transhumanistic, but also the euro-transhumanistic view that, nowadays, gives a broader understanding from the one hand to the “humanizing of technology” and from the other hand, proposes technological intervention and genetic enhancements in order to gain a broader understanding “what it means to be human”. In the light of a research that focuses to digital wellbeing, we consider as important to examine the state of the new media art, science fiction comics and graphic novels, since they embrace the relation of human with the other side of the non-human (e.g. artificial intelligence) and defend the rights of all.*

## **Keywords**

*Posthuman art; Posthumanism; Critical Posthumanism; Metabumanism; Transhumanism; Euro-transhumanism; postmodernity; new media artl comics; graphic novels.*

## **I. Introduction**

Post- Meta- and Trans-humanism are terms put in official use during the recent years, explained through an amazing variety of meanings<sup>1</sup> and at present still mistrusted by the academy as the successors of Postmodernism. (Critical) Posthumanism is now conceived as the main successor of Postmodernism, taking different directions from Transhumanism mainly engaged with human ‘enhancement’ via biotechnology with no special moral dilemmas about creating new forms of beings, but not big distances from the openly inclusive Metahumanism. Therefore, we must always bear in mind that (Critical) Posthumanism and Transhumanism are not identical, while (Critical) Posthumanism and Metahumanism are communicating with each other. In the context of the critical point of view of classical transhumanism, we must note the recent apparition of another term, that of Euro-transhumanism, created by Stefan Lorenz

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<sup>1</sup> Cf. Evi Sampanikou & Jan Stasienko (eds), (2022): *Posthuman Studies Reader: Core Readings on Transhumanism, Posthumanism and Metabumanism*, Schwabe Verlagsgruppe. Cf. also: Yunus Tuncel (Editor), (2017), *Nietzsche and Transhumanism: Precursor or Enemy?* Cambridge Scholars Press.

Sorgner. Euro-transhumanism is a recent philosophical path within the whole range of theories related to the Posthuman (Posthumanism and Critical Posthumanism, Transhumanism, Metahumanism). More specifically, Euro-transhumanism is a philosophical approach to transhumanism that emphasizes to European intellectual and cultural traditions, particularly those of art, literature, philosophy and music, as opposed to the more technologically focused and potentially utopian ideals of classical transhumanism<sup>2</sup>. We must not forget that Euro-Transhumanism is formed after Sorgner's close encounter with the arts in "Philosophy of Posthuman Art" and, more specifically, after Sorgner's conception of the *cyborg*, that represents a properly non-dualistic anthropology of permanent becoming in all aspect at all times. As Sorgner argues "We have always been cyborgs"<sup>3</sup>.

## II. Postmodernity as Early Posthumanism<sup>4</sup>

In 1940, the founder of iconology, the study of the symbolic meaning of artistic images, Erwin Panofsky published his famous essay *History of Art as a Humanistic Discipline* (1955), suggesting modern approaches and new theoretical directions for art history that had just been accepted as a vast, independent, synthetic, research field, much broader than connoisseurship, seeking for a distinct place among humanities. Based on the study of the Renaissance, Panofsky had underlined the strong relationship between art and classical humanism, making interdisciplinary cultural crossovers among literature, philosophy, history, poetry and music.

By the end of the 20th century, in the nineties and more specifically in 1995 and 1996, new theories on art, based on the emerging example and the possibilities of the new media, started to emerge. Erki Huhtamo (1996, 296-303; 2007), Peter Weibel (1996, 338-351; 2007) and Friedrich Kittler (1996; see also Gane 2005) among others, underlined the fact that there was a strong need for new directions and inclusions for the field of art history that had surpassed its humanistic period and limits and was seeking for a contemporary identity as both humanism and modernism belonged to a past that could not reproduce itself anymore. We have to underline here the great importance of one of the most influential for the 21st century books on new media in 1996 that also marked a continuity between new media and what was known as *conceptual art*, placing the new notion of art history somewhere between media studies, New Aesthetic Philosophy and new media theories (see Druckrey 1996). The eternally doubtful term "postmodernism", greatly served by well-known scholars as Arthur Danto (e.g. 2003, 103-124), offered a solution for some decades, it was however clear that it was never enough. Contemporary scholars and philosophers as Slavoi Žižek (1996), Jean Baudrillard (2001) and Paul Virilio (1991, 72) offered some additional help for the inclusion of art history into the field of both cultural studies and opened the doors to new emerging philosophies and media

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<sup>2</sup> Evi Sampanikou, "The Arts in the Context of Euro-Transhumanism," *Paper presented at the International Conference 1st Posthuman Studies Conference (PSC) Philosophies of Transhumanism*, 20-21 June 2025, Babes-Bolyai University, Faculty of History and Philosophy, Department of Philosophy, Cluj-Napoca, Romania, [https://hiphi.ubbcluj.ro/CFA/Abstracts\\_PSC-2025.pdf](https://hiphi.ubbcluj.ro/CFA/Abstracts_PSC-2025.pdf) (accessed: December 6, 2025).

<sup>3</sup> Stefan Lorenz Sorgner, *Philosophy of Posthuman Art*. Basel: Schwabe Verlag, 2022, 129.

<sup>4</sup> This first part of the text comes from my published text: Evi Sampanikou, (2015): *New Media Art*. In: Robert Ranisch, R. and Sorgner, S. L. (eds), *Post- and Transhumanism. An Introduction*, Peter Lang Edition, Frankfurt am Main, 241-250.

theories. During the last years and under the prism of the works of Lev Manovich (2001, 129-135), Oliver Grau (2003), Frank Popper (2007), Anne Friedberg (2006, 231-244) among others, a new shape of things has started being formed, whispering the notion of the end of postmodernism, while other scholars and artists as Louise K. Wilson (1996), Victoria Vesna (see Popper 2007, 322-324), Maurice Benayoun (see Grau 2003, 237-240; Popper 2007, 201-205) and others, although not stating it at all, led art to the path of posthumanism.

Therefore, what can be accepted as a state of the art nowadays is that new media art – actually the continuity of conceptual art including performance, video and video installation – can now be examined as an independent posthuman discipline. To give a new definition, what can be conceived as posthuman art nowadays, is the art that explores the notion of being human in an environment dominated by technology. At the same time, transhumanist art examines the countless possibilities of several “what ifs” on human enhancement, human-machine interaction, or completely new hybrid breeds. From this point of view, the emergence of Sorgner’s euro-transhumanism appeared in the dystopic context of classic transhumanism as a critical philosophical path, whose principles are in accordance and in communication with the spirit and the subversive nature of performances and new media arts<sup>5</sup>.

*Conceptual Art* appeared in the late 1960s, becoming a dominant trend in the 1970s. Focused on the dematerialization of art and the prevailing importance of *meaning*, conceptual art started being recorded mainly after the influential 1970 exhibition of MoMA (New York) entitled *Information* (see Arnason/ Prather 1998, 628-630). The title couldn’t have been accidental. It actually drew the first contact line between art and information technology. The famous work of the American artist Joseph Kosuth (born 1945), *One and Three Chairs* (1965) was included into this exhibition. It was in fact an installation composed of one chair, a photo of this chair and a text, the dictionary definition of the word “chair”. The emerging problem was rather philosophical, dated back to Plato years: what actually *is* a chair and how it can *really* be best illustrated? Photography is also playing a prevailing role into other conceptual artists’ work, John Baldessari (born 1931), for example, leading scholars to start discussing about matters of “postphotographic practice.” (Tomas 1996, 145).

In 1965 also, Joseph Beuys (1921-1986), a German artist that was never fully accepted and absorbed into the internationalist air of the *Fluxus* movement, staged one of his early performances that can now be viewed as early posthuman art. However, we have to underline here that when this performance was first shown to the public, it was conceived as part of *fluxus* expression or early conceptualism. Later, during the eighties such works were rather viewed as early “poststructuralist postmodernist” (see Foster et al. 2007, 596-598) declarations. In the Galerie Schmela in Düsseldorf Beuys created the installation/performance *How to Explain Pictures to a Dead Hare* (see Arnason/ Prather 1998, 631-632). According to his most beloved narrative, Beuys, a pilot in the Second World War, was shot down and rescued during a blizzard by Crimean locals (Tatars) that collected his injured and frozen body and applied animal fat all over it to keep him warm.

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<sup>5</sup> Evi Sampanikou, “The Arts in the Context of Euro-Transhumanism,” *Paper presented at the International Conference 1<sup>st</sup> Posthuman Studies Conference (PSC) Philosophies of Transhumanism*, 20-21 June 2025, Babes-Bolyai University, Faculty of History and Philosophy, Department of Philosophy, Cluj-Napoca, Romania, [https://hiphi.ubbcluj.ro/CFA/Abstracts\\_PSC-2025.pdf](https://hiphi.ubbcluj.ro/CFA/Abstracts_PSC-2025.pdf) (accessed: December 6, 2025).

Beuys returned as a pacifist who wanted to “rehumanize both art and life by narrowing the gap between the two” (ibid., 631). He also belongs to the generation of post-war German artists that were never familiarized with the idea of the denial of mourning for the Nazi’s victims; therefore he expresses mourning in almost every occasion seeking reconciliation between human and animal beings and nature. In the previously mentioned performance, Beuys sat in an empty room in the gallery, surrounded by fat, felt, wood and wire, having his face covered by gold as a mask, holding a dead hare in his arms and whispering to the animal. In this performance, Beuys played the role of the shaman, the healer that could even bring the hare back into life. Beuys also created several sculptures of wood and fat talking about the transformation of the idea of sculpture and the widening of the notion of artistic creation (see ibid., 631-641). For Beuys these creations were “forms of thought” or “forms of speech” implying the fact that everything is under a process of continuous transformation and change (ibid., 631-632). The totality of his work can be characterized as life, death and art, in an early posthuman environment.

The Korean origin Nam June Paik (1932-2006) on the other hand, closely related to Fluxus during his first period and initially known for his humoristic approach, his body art performances and electronic art experimentations, was evolved into one of the leading video artists of our times with a strong belief that “the TV screen will permanently replace the canvas from now on” (ibid., 632). Fascinated by the power of the screen and the sovereignty of electronic and digital media that can easily change the reality of every image, Paik, sharing a lot of Baudrillard’s thought, became a witness of the massive hallucination imposed by TV and the later electronic media like computers, the internet, 3D and virtual reality. In one of his famous video installations from the nineties, called *Electronic Superhighway: Bill Clinton Stole my idea* (1993-1995) (see Rush 2001, 117-118; Sampanikou 2008, 265-269), his participation in the 1993 Venice Biennale in the German pavilion, Paik had gathered “dozens of monitors packed from floor to ceiling” (Rush 2001, 118-119; images: 129-130) broadcasting images of the world’s news and documentations: wars, politics, the Bill Clinton scandal, images from the nature, or disasters all over the planet, used as a record of contemporary world’s state. This is a purely posthuman view of the media ruled world, in a notion of politicized posthumanism also underlined by the artist’s declaration that his aim is “the humanizing of technology” (Elwes 2005, 144), met here with Fredric Jameson’s later notion of postmodernism (2008, 377-380).

### III. Towards a Posthuman Art

One of the most influential and most “contemporary” artists of our time is undoubtedly the American Bill Viola (1951 - 2024). Moving into digital video after several years of TV and VHS video experimentations, Viola seems initially to be fascinated by the notion of the several *masculinities*, identity, family, manwoman, life-death. Starting from family relationships, a metaphorical *locus* into which he traces the shaping of his identity, in an unusual way for a male artist, Viola makes further steps to identify this experience as “part of a wider universal consciousness” (Elwes 2005, 71). However, this posthuman approach gets clearer into Viola’s recent works (from 2000 and after), when he gets more and more inspired from Renaissance and the old masters and transforms their viewing into professional quality video works directed by him, with professional actors. His series

of video works *The Passions*, a project that began in 2000 illustrate the above mentioned in the best way (see Walsh 2003).<sup>1</sup> In a deep research for the expression of emotions motivated by a year of studies (1998) at the Getty Research Institute as a guest scholar on the topic “The Representation of the Passions”, Viola, who in the past had read Hindu, Buddhist and Sufi writers, had the opportunity to come into contact with Christian art and Christian literature of the later Middle Ages (St. John of the Cross, Meister Eckhart), as well as modern critical art history literature on medieval pictorial representation of feeling and the symbolic *language* and gestures used by the painters (see Walsh 2003, 31-32). Charles Darwin’s views on facial expression and Victor Hieronym Stoichita’s work on visionary experiences in Spanish painting influenced him most of all (see *ibid.*, 31). According to Peter Sellars, the post-September 11th atmosphere that is revealed in “high-end American art”, is met, in Viola’s art, with an alternative practice towards “a culture of mourning” that had been underdeveloping for long by a series of American artists (see Walsh 2003, 158-160). For Viola “art can have a healing function” as art is “for cultivating knowledge on how to be in the world” (Walsh 2007, 25). Viola’s art is for arousing strong emotions of participation, empathy and passion to the viewer (see Townsend 2004, 8-14), a function almost forgotten by both the artists and the public during the 20th century.

Shirin Neshat (born 1957), the well-known Iranian origin video artist and the very important South African animator William Kentridge (born 1955) are two other alternative examples of posthuman art. The first can in many ways be conceived as an American artist narrating the condition of being a woman in the country of her origin, while the second, who has never left his country, can in many ways be viewed as a humanist citizen of the world. Neshat was born and raised by an upper middle-class family in Tehran before the Islamic Revolution (1980). The Revolution found her in the States studying fine arts, therefore her stay in California became permanent. Returning to Tehran (where her family still lives) some years later, for a short visit, was a traumatic experience to her as everything had changed in a dramatic way, especially the place of women (see Grosenick 2003, 136-139; Friedberg 2006, 219). Her video work contains the sense of displacement she felt, as well as the unbalanced feeling of living between two worlds, seeking for an identity at a “third place”. This “third place” is for Neshat a series of digital video narratives about Iranian men and women struggling to get over the limits of their world and condition. After a series of photographs called *Women of Allah* (1993-1997) and her earlier videos *Turbulent* (1998), *Rapture* (1999), *Soliloquy* (1999) (see Grosenick 2003, 139), *Fervor* (2000), *Passage* (2001) and *Tooba* (2002) (see Elwes 2005, 175-177), the screening of *Women Without Men*, is undoubtedly her most inspired work. The whole project consists of five video-installations, each narrating the story of one woman: *Mahdocht* (2004), *Zarin* (2005), *Munis* (2008), *Faezeh* (2008), *Farokh Legha* (2008) that live during the 1953 coup d’état. In these five parallel and intertwining stories, Iranian female characters of different class origin revolt in their own way against the political and social conditions (see Kafetsi 2009). The stories work like ancient drama sharing a feeling of *catharsis* in the end.<sup>2</sup> They can therefore be read as political posthuman *texts*.

William Kentridge on the other hand is an artist very much engaged with humanist matters like the notion of freedom, violence and the transformations of society. His medium, animation, offers the artist, who permanently lives in Johannesburg and first appears between 1981 and 1987, a special look at such social problems as racism, and also an access to youth public. His art consists of “old fashioned” black and white

obscured images made by carbon. Kentridge's technique consists of recording the process of drawing and deleting - correcting. With German Expressionism as his immediate 20th century artistic influence (see Arnason/ Prather 1998, 141-170), but also Daumier, Goya and Hogarth (see Marian Goodman Gallery 2013), Kentridge creates a series of animated characters around the main two: Soho, the industrialist, always clad in a costume with stripes recalling the early industrial period and Felix, the anti-apartheid intellectual, naked most of the times, both personifications of the conflicting white South African consciousness. The artist describes himself as a member of a white elite who *kenw* what was happening during the apartheid. According to Kentridge's own words, he is interested in "*political art* [...] the art of unfinished gestures and an uncertain end" (Tone 2003, 98-112). Among his famous works are *Felix in Exile* (1994), *Stereoscope* (1999) and *Fragments for George Melies* (2007). Kentridge's humanistic approach and arguments make him one of the purest and most politicized posthumanists of our times.

#### **IV. Art Between Posthumanism and Euro-Transhumanism**

We have to deal however with the posthumanistic in comparison to eurotranshumanistic view. Among posthumanist artists we could generally include H. R. Giger, as a forerunner, Stelarc, Orlan, Piccinini and Eduardo Kac, that are the commonly accepted paradigms. As these artists give an emphasis to the body and especially one aspect, its limits, we now believe that their work can be viewed as posthumanistic and at the same time as euro-transhumanistic practice, if we take into consideration the principles of this recently coined by Sorgner term. More specifically, Stelarc can be considered as a euro-transhumanist artist, since he is early engaged with the possibilities of enhancing human body and considers the natural human body obsolete and proposes technological intervention and genetic enhancements in order to gain a broader understanding of "what it means to be human", a concern that is also very much included in the principles of Euro-Transhumanism<sup>6</sup>.

Also, the bulk of the formerly called "electronic art" that has nowadays evolved to either digital or virtual art, fulfills the requirements of an analytical approach to the philosophical background of both Critical Posthumanism and transhumanism, dealing with the body as a micro-world and a temple and the meeting of the human brain with "the machine". Therefore, we would like to introduce here three major artistic examples: Karl Sims, Knowbotic Research and Jake and Dinos Chapman, all of completely different origin and background.

The biotechnologist and computer graphics artist and researcher Karl Sims, born in the sixties, became known with his *Galapagos* twelve-monitors interactive installation (1995, 1997-2000, Intercommunication Centre, Tokyo), inspired by Darwin's theory of natural selection (see Rush 2001, 205-208, images: 221-222; Popper 2007, 126). *Galapagos* is actually a computer graphics based visualisation of Darwin's theory. 3D Graphics in this installation resemble to new organisms, "genetic" ones, developing into the environment of the computer. This development can be done by any visitor of the

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<sup>6</sup> Evi Sampanikou, "The Arts in the Context of Euro-Transhumanism," *Paper presented at the International Conference 1st Posthuman Studies Conference (PSC) Philosophies of Transhumanism*, 20-21 June 2025, Babes-Bolyai University, Faculty of History and Philosophy, Department of Philosophy, Cluj-Napoca, Romania, [https://hiphi.ubbcluj.ro/CFA/Abstracts\\_PSC-2025.pdf](https://hiphi.ubbcluj.ro/CFA/Abstracts_PSC-2025.pdf) (accessed: December 6, 2025).

exhibition and consists of random changes of either shape, or color/texture or other characteristics to convince the viewer that a new breed of creatures is actually happening (see Sims 1997). *Genetic Images* (1993) was the early version of this installation (Centre Pompidou, Paris). The artist considers the project a “collaboration between human and machine” for two reasons: its potential as a tool and the unique method it suggests “for studying evolutionary systems” (ibid.). It can however be a basis for discussing transhumanism in an open-minded way.

Knowbotic Research, a German-Swiss electronic art group established in 1991, is composed of Yvonne Wilhelm, Christian Hubler and Alexander Tuchacek. Their work that according to Oliver Grau (2003, 213-217) is “developing hybrid models for digital representation of knowledge” has become the field of a very analytical critical approach by both the aforementioned (Oliver Grau) and Frank Popper (2007, 345-350), while they were also recorded by other scholars (see Tribe et al. 2006, 56-57). Undoubtedly, their most prominent project is the virtual installation *Dialogue with the Knowbotic South* (1994-1997), a work that “processes scientific data from research stations’ networked databases to create a changing abstract representation of Antarctica” (Grau 2003, 213). The data collectors are software agents, the knowledge robots or “knowbots”. The knowbots interact with (human) visitors of the exhibition and poetic software machines, while the projected image resembles star constellations or supernovas (see Grau 2003, 213; Popper 2007, 249). This exchange of feelings, images and experience between human beings and knowbots is actually putting the development of this project in an early transhumanist discussion on the human-machine interaction and the possibility of new directions of developing (and enhance) knowledge.

We’ll end this text with the duet of the London-based brothers Jake and Dinos Chapman (born 1966 and 1962), of British-Cypriot origin, who belong to a series of “provocative” artists of this century that create “hermaphrodites” with genetic anomalies manifested in absurd combinations of arms, heads, legs and torsos, with the nose, ears or mouth replaced by an anus, a vulva or an erect penis (*Fuck Face* 1994, *Cock-Shitter* 1997) (see Riemschneider/ Grosenick 1999, 98-101). Their example illustrates, in the best way, that art is becoming, more and more a post- and transhumanistic discipline, reminding us that biotechnology can not only “enhance” human species, but also “breed monsters”, in Goya’s terms. The reason Goya is mentioned, is no other than the Chapmans’ respect to Goya and their straight influence by his engravings that are visualized by the artists’ life-size sculptures made of resin and fiberglass. Their nightmarish work *Great Deeds Against the Dead, after Goya’s etching* (1994), composed of fiberglass dismembered bodies tied in a tree’s trunk and branches, exactly imitates Goya’s *Grande haxana! Con muertos!* (A heroic feat! With dead men!). Chapmans’ creatures are actually an irony to biotechnology or rather an irony to its possible unlucky experiment results. Their work, often accused as mere bad taste by several art historians, functions as a reflective mirror of the diachronical moral ugliness produced by human beings, with aspects of biotechnology being a part of it nowadays.

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# SCIENCE FICTION COMICS AND GRAPHIC NOVELS. TOWARDS A POSTHUMAN FUTURE?

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## **Abstract**

*The aim of this work is to examine some case studies of graphic novels in the context of Posthumanism and Euro-Transhumanism. From this point of view, we explore how graphic novels could be considered as examples of Transhumanistic thought or how the heroes of Euro-Transhumanist origin are gradually been transformed when appearing into a Critical Posthumanist context. In this respect, several case studies of graphic novels allow us to examine how the end of Postmodernism calls for a re-invention of Humanism, more inclusive and transformed into Critical Posthumanist thought. From the point of view of the research that focuses on digital wellbeing, graphic novels highlight the need for an ultimate 'beginning' for all, through a return to the roots of philosophical thought and creative imagination that consist the core meaning of being 'human' in a meta-technological era.*

## **Keywords**

*Graphic novels; science fiction comics; posthuman art; Euro-Transhumanism; Critical Posthumanism.*

## **I. Science Fiction Comics and Graphic Novels. Towards a Posthuman Future? Critical Posthumanism, Euro-Transhumanism and Visual Ethics**

The best way to deal with Posthumanism is analyzing it in cultural terms as a philosophical trend that opens the frames of exclusively anthropocentric Humanism to embrace all forms of natural existence (e.g. the animals, the environment) but also to approach, critically but open-minded, other forms of existence (e.g. artificial intelligence) and defend the rights of all. We can thus accept that Posthumanism is the ideological expression of a contemporary cultural and political theory born immediately after Postmodernism (Sampanikou 2015, 241-242). And also, taking into consideration its openness, to accept another dimension of Posthumanism: sustainability, as a logical balance between humanity's existence and technology, taking distances from both Eurocentrism and colonial imperialism (Vattimo, 2013).

Critical Posthumanism and Euro-Transhumanism are thus, as new philosophical and interdisciplinary terms, an integral part of contemporary audiovisual culture. But are they really new? Scholars are very much engaged with recognizing and attributing (Critical)

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Posthumanist ideology and ethics to a big part of the cultural production of the past, arguing for example on the relations between Nietzsche, Darwin and even Heidegger or Habermas and Posthumanist thought (Sorgner, 2011, online). We will now focus on the example of the science fiction genre with main references to comics and graphic novels either inspired from sf literature or not. The same stream of thought is however not totally absent from other, more 'realistic' works, sociopolitical or autobiographical comics and graphic novels for example. As a rule and as we can see in other fields of contemporary culture, Critical Posthuman topics and character models are built on the denial of dualisms, on taking the interaction between human beings and technologies for granted and on analyzing this interaction from a more sociological or anthropological point of view. On the other hand, Euro-Transhumanist topics and character models criticize the meaning of being 'human' in environments ruled by technology and societies organized by enhanced or totally mechanic ex-human beings who sometimes preserve or acquire the qualities and ethics that humanity has lost.

This text is moreover emphatically in search of how posthumanist ethics affect one of the most expressive contemporary arts (born however in the 19th century), comics and graphic novels and how they include broader, not exclusively anthropocentric, values, that tend, however to be humanist, even not in the Enlightenment sense. During the last decades, from the eighties to nowadays, comic book stories tend to follow different directions per decade, analyzing things in specific ways influenced by the ideology of the times. Usually, in stories written during the eighties, a phenomenally Transhumanist hero who also interacts with a Transhumanist setting, proves to be keeping or have kept human values and ethics at the same time that the behavior or real humans tend to become more machine-like or animal-like. Expressions of this attitude are also met in cinema production, Ridley Scott's *Blade Runner* (1982) for example, inspired from but so different from Philip K. Dick's, *Do Androids Dream of Electric Sheep* (1968), no matter if the central hero is the same in both, bearing the symbolic name Descartes.

Similarly, in stories written during the nineties, the Transhumanist environment is also the background setting but the message is more Critical Posthuman: we usually meet human heroes who revolt against the anarchy and chaos that technology has brought and seek ways to re-invent humanity, human values and nature on a new basis and new terms. As comics perfectly interact with cinema, an example from cinema for this period could be Terry Gilliam's movies, the early *Brazil* (1985), or *12 Monkeys* (1995).

Subsequently, in stories written during the '2000s, including the Euro-manga production, Posthumanism seems to characterize most of the (European at least) production: transformed or recreated heroes, most of them human, though their origin doesn't really matter, act in a Messianic way to lead the human race back to posthuman values and awake them from being ruled by machines or Transhumans. The *Matrix* trilogy (though the first movie comes out in 1999, the second and third come out in 2003) could be the best example from cinema from this decade.

What I am finally looking for is the political vision of the being called 'the posthuman'. Politics is a crucial point of contemporary graphic novels and includes serious moral concerns on the social landscape, the natural environment, sustainability and the essence of being human in times you have to re-define the term. Dignity, freedom and free will of the individual contradicted with traditional or 'mutated' forms of power that are common science fiction philosophical concerns are also at the center of this discussion.

## A. *The Watchmen*

I believe that the best way to start discussing Posthumanism and Transhumanism in comics could be Alan Moore's (script) and Dave Gibbons (design) famous graphic novel *The Watchmen* (1986-1987)<sup>1</sup>, that has since its first publication been recognized as one of the first 'mature' comics<sup>2</sup> bearing elements that can be interpreted as a transition from Postmodern to Posthuman thought. There is this famous frame in *Watchmen* where Ozymandias is sitting in front of hundreds of screens in a room<sup>3</sup> where he enjoys glory and the reality he and other ex-heroes have literally constructed. In fact he is a monster, a tycoon adored by the media, who advertises himself as the incarnation of Nietzsche's Übermensch and leads the life of a multi-millionaire and feels he is an Olympian God, he even gets dressed like one. Ozymandias is the most successful from a team of seven ex-superheroes, six [actually seven] men and one woman [actually two women], with no real superpowers, the six now old and rather marginalized by a law forbidding super-heroic actions, in Margaret Thatcher's world that does not seem to need them anymore. Ozymandias will be the main responsible for a mass destruction that is been felt to approach since the beginning of the novel and makes the atmosphere, page by page, more and more menacing. To underline this menacing atmosphere, Moore has written a parallel story into the book, a dark pirate story read in chapters (in similar sequence to the chapters of this graphic novel) by a little boy who just happens to be into the setting as a neutral person, reading it.

Alan Moore has posed several ethical and also political problems in *Watchmen* that make this graphic novel a perfect model of Posthuman thought. Pellitteri thinks that Moore wonders what happens if in a real or at least 'realistically designed' world, a number of individuals decided to become costumed vigilantes and act outside the law. It would certainly create a world "strongly oriented towards right-wing political ideologies". He even goes further to say that Moore suggests here that this world would be ruled by right-wing politics because United States and Great Britain are right wing, and superheroes are an Anglo-Saxon cultural product bearing the same dominant ideology<sup>4</sup>.

One of the most interesting facts in *Watchmen* is that the story follows the Postmodern trend of superheroes who do not really have superhuman powers, unless they are mutant superheroes like *X-Men*. While *X-Men* stories should mainly be perceived as examples of Transhumanist thought, *The Watchmen* could really be their Posthumanist opposite, as, no matter how tragically wrong these 'superheroes' lead their lives to a dead-end, their initial purpose has been to defend humanity and traditional human values. Even the two far right-wing members of the team, Rorschach and The Comedian, bear elements of humanity deep inside, while the only mutated hero among them, Dr Manhattan, the ex-human scientist Jon Osterman that had a nuclear accident, is a new atomic creature carrying all Osterman's memories and personality. Dr Manhattan has been transformed into a god, surpassing all the limits of space, time and human nature. He is a creature of Transhumanized form and at the same time the main evidence of the eternity of human

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<sup>1</sup> Moore and Gibbons #XI, 2.

<sup>2</sup> Kawa, 211-213.

<sup>3</sup> #XI, 2.

<sup>4</sup> 2011:86. Also, Robichaud 2009: 5-17.

spirit and soul as he chooses to rebuild his ex-body and receive a phasmatic human aura, among millions of other possibilities he now has<sup>5</sup>.

### B. *The Killing Joke*

Another great example from the late eighties could be a Batman story, *The Killing Joke* (1988), written by Allan Moore and designed by Brian Bolland (art-cover) and John Higgins (colour). This is a story about madness and the limits of human reason owing so much to Foucault's *History of Madness* (1961), more than one could originally tell. Valereto<sup>6</sup> attempts an interesting reading of the story as the evolution of Joker's madness (the same way that the recent movie deals with Joker) and its analysis through not only Foucault's, but also Derrida's and Deleuze's thought. However, one of the most interesting points in the story is how a sane and moral human being like Jim (Commissioner Gordon), a crime persecutor and Batman's close friend, can momentarily turn to madness when his dignity and personality are violently attacked by The Joker who kidnaps and imprisons him among circus monsters (mutated beings?), after shooting his daughter Barbara, trying to lead him to madness: "Memories can be vile, repulsive, little Brutes... Memories are what our reason is based upon. If we can't face them, we deny reason itself! Although why not? We aren't contractually tied down to rationality! There's no sanity clause! ... Madness is the emergency exit..."<sup>7</sup> Moore puts these words to Joker's mouth when he leads Jim naked to the cage with the intention to keep him there forever and drive him mad. Memory is however Joker's own concern in the story, a memory of him being a family man<sup>8</sup> before turning into this hideous "mask". Moore underlines here the strong connection of memory, reason and human condition, difficult to be denied even by a monster like The Joker, or even by Batman himself who does everything to keep distances from human feelings wearing the Bat costume, but who however turns to be rather 'addicted' to human values. Batman is thus the main bearer of posthuman ethics in the story.

### C. *Judge Dredd*

The *Killing Joke* designer, Brian Bolland, living and working in Britain, is also one of the main designers for *2000AD* comics' *Judge Dredd*, created in the mind of John Wagner (Dredd's original writer also under the pseudonym T. B. Grover) and Carlos Ezquerra (design)<sup>9</sup> published since 1977 (year 2099 for Dredd's world) and running through all the following decades<sup>10</sup>. Dredd is a merciless cop and judge in a future society called Mega-City (there are numbered Mega-Cities, 1, 2, etc). The Judges are an Order that actually rules this world: they have the right to arrest, judge and kill all the trespassers and outlaws and you can become an outlaw for nothing in this society... He has no mother and father; he is a clone produced in a lab (this is the state politics for the production of judges) who

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<sup>5</sup> Digiovanna 2009:109-111.

<sup>6</sup> 2011: 69-80.

<sup>7</sup> Moore – Bolland – Higgins 1988: 21.

<sup>8</sup> Robichaud 2008: 79. Also, Valereto 2011: 75-76.

<sup>9</sup> And also Pat Mills, the editor that developed *2000AD* in 1976.

<sup>10</sup> In 2008, prog [story] 1595, Dredd is diagnosed with benign cancer...

is trained not to have any feelings but a perfect sense of justice and a Protestant notion of punishment that has to be imposed on anyone that doesn't follow the rules. According to his designer Brian Bolland<sup>11</sup>, Dredd is a fascist and also a parody of fascism. He's also an allegory for Margaret Thatcher's politics<sup>12</sup> and also a perfect example of how a Transhumanist creature would really look like. His team of writers and designers have however managed to make Dredd a more complex character<sup>13</sup>, turning him into a rather likable hero hiding a human soul under his very official judge uniform. They have also made him completely human in terms of aging: in 1977 (2099 for the comic) he was over thirty and nowadays (2134 for the comic) he is more than seventy years old. Strangely, he has not had any genetic improvements so far... In a short story, "Vienna", first published in *2000AD* # 116 (1300), the readers learn that Dredd has a niece, a daughter of his ex-judge cloned brother Rico, who had become an outlaw and was killed by Dredd. Dredd cares and visit his niece, he even plays with her, and he also rescues her when she is kidnapped by one of his enemies. In a more complicated and rather long story, first published in a series of *2000AD* issues in 1980 (15 March 1980 the first, prog 156-181, epilogue in 182), "The Judge Child" (progs 156-181; epilogue in 182)<sup>14</sup>, Dredd wanders on several enemy lands, wild societies where the law is unknown, putting his life in risk countless times, to find an adolescent that oracles say is destined to be the greatest judge of all. He finally finds the child, but when he is about to take him to Mega-City, he decides to abandon him behind. This decision is an outcome of Dredd's own free will. After so many years being a judge, Dredd starts to discover human values: he violates his orders because he sees so much hate and cruelty in this child's eyes that he is actually afraid of making him a judge. Step by step, Dredd is more and more recognizing the importance of being human as a prior necessity to being a judge. Dredd is a hero of a Transhumanist origin that is gradually been transformed into a Posthumanist.

#### D. *Druuna in Morbus Gravis*

Moving a little further from the Anglo-Saxon world, South, in Italy, in 1985, Paolo Eleuteri Serpieri created the character of Druuna in a series of albums under the titles *Morbus Gravis* (=Serious Disease) and *Druuna* (or: *Morbus Gravis I* and *II* according to some editions), followed by five "sequels".<sup>15</sup> Druuna is an exceptionally attractive posthuman being bearing not only the qualities of a dynamic survivor, but also an expressive mediterranean femininity. The posthuman atmosphere of the story is supported by the excellent artwork, placing the action in a diachronical post-industrial architectural setting. This setting of place and time in the story is related to a spaceship named "The City", at an unspecific time in the future, a long time after the final destruction of Earth that has brought civilisation to an end. Most of the inhabitants don't know what the city is and what lies beyond. Human species is under extinction. Religious fundamentalism based

<sup>11</sup> Bolland, 18-20.

<sup>12</sup> How, 226-230.

<sup>13</sup> "The Day the Law Died", *2000AD* # 108

<sup>14</sup> For a list of all Dredd stories: <http://upload.wikimedia.org/wikipedia/en/6/6c/Dredd2AD.pdf>

<sup>15</sup> *Creatura* (1990), *Carnivora* (1992), *Mandragora* (1995), *Aphrodisia* (1997), *La Planete oubliée* (2000). All seven albums were republished in 1999. A first appearance of a woman Druuna-like character and octopus-like monsters took place in 1981, in a short (16 pages) comic story by Serpieri "In His Likeness", see the site: [www.druuna.net](http://www.druuna.net).

on a dark order of robot priests and an uncountable number of ex-human mutants having been transformed into carnivorous octopus-like monsters expanding the so-called “disease”, are the main elements of this world<sup>16</sup>. *Druuna*’s desperate search for the serum, the medicine, under horrible circumstances of disorder, criminality and sexual violence sets the directions of the main plot. The mysteriously healthy *Druuna*, who was born after earth’s destruction and has never been part of any organised human society living exclusively between robots and mutants, is revealed to the reader as the posthuman counterpart of a post-Transhumanist environment created by scientific advance, with no moral limits. She thus becomes the heiress of the notion of humanity, preserving all the humanistic behavioural attributes, even the loss of morality under certain circumstances, but *never* the loss of reason, compassion and solidarity.

### E. *The Metabarons and the Black Inkal*

The Nineties are perfectly represented in Posthuman thought with the french-speaking works related to the famous writer Alexandro Jodorowsky<sup>17</sup>, especially in his extraordinary collaboration with the designer Juan Gimenez that had as a result the [*Saga of Metabarons*], inspired from science fiction literature and epics like Frank Herbert’s *Dune* (1965). The *Saga of Metabarons* is a graphic novel series published from 1991 to 2003.<sup>18</sup> Jodorowsky has also co-operated in the past with one of the most famous of the designers, Moebius (Jean Giraud, b. 1938)<sup>19</sup> for *The Black Incal [L’Incal Noire]* series, from 1981 to 1988. The futuristic atmosphere of the design in both series of stories intensifies Jodorowsky’s Posthuman irony from many aspects. For example, the psychedelic atmosphere inspiring both the designs of the *Metabarons* and *The Black Incal* clearly criticises the Transhumanist approach to the future. Actually, the stories cooperate somehow. The main character in the *Metabarons* series, *Otto*, was first born in the *Black Incal*<sup>20</sup>. The semi-heroic atmosphere of the *Metabarons* dynasty comes into a strong contradiction with the anti-heroic humourous tone of the *Black Incal*<sup>21</sup>.

In the *Incal* stories *Moebius* rather follows the eighties attitude and style. The notion of a big subterranean metropolis with an upper and lower world, a motif we meet in a number of science fiction stories of the times, a city guarded by robot-cops, is for once more present in the story. There is even a “suicide square”, a place where anyone can jump into the void, be shot by others while falling and finally melt into acid. Mutations are humorously criticised in the story. A good example is the case of the extraordinary beautiful aristocrat lady (aristocrats have the privilege to bear a technical nimbus around

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<sup>16</sup> The same elements are usually met in SF/horror films. See: Creed, 127-159.

<sup>17</sup> The Russian-Chilian script-writer is actually also a designer, a director, a writer, a mysticist. The best guide to *Jodorowsky*’s work, containing the complete series of *Incal* and *Metabarons* albums is the official *Les Humanoïdes Associées* site. *Jodorowsky* is one of the founding members. See: [www.humano.com](http://www.humano.com).

<sup>18</sup> The stories published by *Les Humanoïdes Associées* in France are: 1. *Otto the Great-Great-Grandfather* (1992), 2. *Honorata, the Foremother* (1993), 3. *Agnar, the Great-Grandfather* (1995), 4. *Odda, the Great-Grandmother* (1997), 5. *Steelhead, the Grandfather* (1998), 6. *Donna Vicenta, the Grandmother* (1999), 7. *Aghora, the Father-Mother* (2002), 8. *Nameless, the Last of the Metabarons* (2003).

<sup>19</sup> Jean Giraud creates the character of *Blueberry* in 1963, in *Pilote* (script: Jean-Michel Charlie). Giraud is rather “classicist” in design. On the other hand, Moebius, his alter ego, is a modernist SF creator.

<sup>20</sup> *Jodorowsky* comes back to develop this character ten (!) years later. It must have been an obsession to him.

<sup>21</sup> There are eighteen (18) albums so far in total, thirteen (13) of them are already out, comprising a series of *Before Incal*, *Incal* and *After Incal* thematics.

their heads, the same nimbus we see in holy icons...) who visits the lower city -under the protection of the rather idiot protagonist of the series, the detective John Difool (a parody of Harrison Ford)- and has sex with the Wolf, a huge mutant with the body of a supernatural human male being with a huge penis and the head of a wolf. By midnight the beautiful lady turns out to be the product of a strange drug-based mutation as she turns into a horrible age-old woman, frustrating the Wolf who chases John Difool into the lower city labyrinth channels, in areas belonging to crime syndicates and staffed with mutants, monsters and replicas<sup>22</sup>.

On the occasion of the *Meta-Barons* series that reflect ideas on Metahuman existence, a combination of Ancient Greek tragedy, classical science fiction and old tribal myths, the main themes are, artificial intelligence (the story is told by two robots -the dominating species at the time the story unfolds- who are telling stories to each other)<sup>23</sup>, the isolated racism of a safe fortress meta-city (the *Metabunker*) supported by all means of technology, and finally the issue of biotechnology and prosthetics, that has created improved human body parts that comprise a tradition for the *Metabarons* sequential generations. The heroes belong to a special aristocratic cast of the future destined to be leaders of planets and galaxies. They are supernatural but human and their actions are recorded for the posterity in epic dimensions. Each male member of this cast must suffer a specific rite of passage when he comes of age to become a real man: he must accept mutilation by his own father and then immediately replace the missing member with a technical member that will stand powerful in the position of the former. Otto, the first of this saga has his ear and inner lobe and part of his brain violently extracted by the hand of his father, accepting this suffering without even changing his facial expression or shed a tear. His father is proud because he himself couldn't avoid leaving a tear drop when he had undergone his own mutilation. Arms, legs, even penises are thus sacrificed to make the perfect aristocrat warriors, who, gradually, generation after generation tend to become less human and more and more biotechnological beings. They even replace their sex or turn into both sexes to rule, Aghora the Father-Mother for example (Book 7, 2002). Even further: Steelhead is one of the last Metabarons (Book 5, 1998) who has become almost entirely mechanical as he was decapitated and has an iron head and brain. The ironic element in the story is that Steelhead tends to be a Humanist! He will defend human race as none of his predecessors has ever done. It has already been stated that the script is clearly influenced by *Dune*, while the expressionist industrial colours underline the Transhuman atmosphere of the plot.<sup>24</sup> Even the work process of the designer, who works directly on the computer as only few designers of his status do, seems to bear Posthuman qualities.

## II. The Japanese Influence and Euro-Transhumanism: Euromanga Series

The 2000s are the Euromanga decade and Franco-Belgian production will be the first to welcome the Japanese influence. Needless to say, that Japanese tradition and production has actually been the first to turn to a discussion on technology and the future of the human race, long before Europe and the United States become engaged with Critical

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<sup>22</sup> There is also a series by Jodorowsky – Janjetov under the title: *The Early Years of John Difool*, published from 1984 to 1994.

<sup>23</sup> Robots keep playing a secondary role in SF comics stories.

<sup>24</sup> The Argentinian designer's former studies in Industrial Design are evident.

Posthumanism and Euro-Transhumanism. Katsuhiro Ottomo's *Akira* (1982-1993), for example could in fact have been recorded as the first manga and anime engaged with Posthuman issues<sup>25</sup>. As far as it concerns Europe, a wonderful and relatively recent story and a perfect example on how European Posthumanist thought is translated into comics scripts and images is the French Euromanga *Wake (Sillage)*, by Philippe Buchet (designs) and Jean - Pierre Morvan (script), first published in 1998. The protagonist of the whole series is a girl named Navis, the only descendant of the human race, a child discovered by the Alien Forces Fleet [Wake or Sillage], on the surface of an evacuated planet. They rescue her as a protected species, the only rescued representative of humanity, having inherited all the biological characteristics of her ancestors. As a creature of 'unusually special intelligence', for the aliens, she grows up enjoying a high reputation in the Wake, undertaking, during her teen-age years, several missions on planets.

In one of her missions, in a story officially recognised as *steam-punk* and published in album 3 / part 3 under the title: *Engrenages [Unexpected Events]*, Navis visits a planet of human-like creatures in a setting similar to the cities on earth during the early industrial era. For a while she hopes she will satisfy her deepest strong desire that is to meet creatures of her own species. However, the human-like citizens turn out to be Puntas, a goat-like but intelligent species that have been transformed into human beings by a scientist from Earth that has actually 'produced' them in the lab fertilising with his own semen one of the Queens, female creatures that are fertilised like Bee queens and are the mothers of all the Puntas. The original Puntas are now living out of the human cities keeping a peaceful reconciliation with nature and actually continuing an ecological behaviour that bears Post- and Metahumanist qualities from many aspects, from the aspect of respect for the lives of animals for example. They never kill for food, and they do not have any sense of pleasure in doing so. They do not go hunting but they accept buffaloes that are about to die who become their food immediately after.

What makes the human-like race human is a serum the Punta's species need to keep human characteristics. The serum is produced by scientists that work in a secret laboratory where also the man from earth, the father / ancestor lies for hundreds of years preserved with the help of cryonics. He recovers his consciousness 'waking up' whenever it is required to take serious decisions on the evolution of the human-like race, who ignore everything about him and the importance of the serum. Navis arrives at the planet in an era when the human-like politicians, initially under the scientist's influence, have become too oppressive and a revolution starts against them and against the obligatory receiving of the serum. The rebels believe the serum is a drug that makes them submissive. *Navis* will help rebels go to the serum factory and reveal the secret and will for the first time meet another human being, the awakened scientist under conditions of tragic irony as he is immediately killed by the leader of the rebels.

### A. The Comics of Enki Bilal

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<sup>25</sup> *Akira* takes place in New Tokyo in 2030. A Third World War has devastated society the world, violence and disorder are the rule. Some teenage bikers accidentally discover an important secret military project, the consequences of which are unconceivable...

In one of the early graphic novels by the famous Enki Bilal (b. 1951 in Belgrade, living and creating in France)<sup>26</sup> on Pierre Christin's script, *La Ville qui n'existait pas* [*The City that Never Existed*] (1977), the motif of the happy isolated world, created as experiment on a dream of political utopianism, can nowadays be read as a Posthumanist *text*. Melancholy is the dominant characteristic in both the story and Bilal's design. The story is also a critique to Marxism and, mainly, to the Communist regimes of the Eastern Block, still existing at the times. The plot takes place at an industrial town mainly inhabited by workers to the local factory, that turns into an experimental working class 'Paradise' watched over by the crippled granddaughter of the founder of the industry, who believes she is creating an ideal world. The futuristic and colourful town, protected by a huge dome from the external world, a dome no one can thread without a pass, offers any possible facility to its inhabitants and their children and a modernized working environment. It however becomes a 'golden cage', and workers start leaving the city, thus making it something that 'never existed'. A main topic in the story is human revolt to the authorities' madness and the revenge of perfection acting as a boomerang to its creators; therefore, it can also function as an additional contemporary criticism to Transhumanist thought and the contemporary notion of mechanised perfection.

However, it is *Le sarcophage* [*The Sarcophagus*], Bilal's artwork on Pierre Christin's script in 2000, that actually reflects Posthuman ethics. The story is about a Museum of the future built into the heart of a nuclear station, Pylon 4 in Chernobyl, the exact site of the 1986 nuclear accident. It's quite interesting here that Bilal questions and criticises the role of the museum in the 21<sup>st</sup> century: it must be 'a museum about life and death'<sup>27</sup>. The details are more emblematic. The museum is composed of four buildings /sections: The first building is the 'Relics of Memory', containing the rooms 'Glasnost', 'Taliban'<sup>28</sup>, 'The Great Suk' [The Great Market], 'Zoo', 'Monuments' and 'Last Congregation'. The second section of the museum is 'The Modernist Industry', a critique to the notions of both Modernity and Postmodernity, containing: Cosmetics, Drugs, Sports, Rich people, Poor people. The third section is 'The Future', containing Chemical and Nuclear Weapons, Videogames and a room named 'Immortality', dedicated to 'Cloning, Biotechnology and Human Will for Immortality'<sup>29</sup>. The fourth section is in the heart of the Chernobyl atomic pile, covered by cement since 1986, in the shape of an ancient sarcophagus. It is the place of Life and Death, a Sarcophagus, a vessel containing everything. It is, at the same time, a graveyard, a place of entertainment and a lab. Christin and Bilal make a clear statement by signing this work: the end of Postmodernism calls for a re-invention of Humanism, more inclusive and transformed into Critical Posthumanist thought.

### B. A Greek Example: "The Japanese"

<sup>26</sup> There are hundreds of international newspaper and magazine articles on *Enki Bilal*. Most of them are now concentrated in Internet sites. Some of them are, the designer's official site: [www.bilal.com](http://www.bilal.com), [www.humano.com](http://www.humano.com), that is the official site of *Les Humanoïdes Associées*, [www.scifi.com](http://www.scifi.com) and [www.desbois.com](http://www.desbois.com). Also see Bilal's full bibliography and work in: [www3.sympatico.ca/ans.beaulieu/Bilal/Bilal.htm](http://www3.sympatico.ca/ans.beaulieu/Bilal/Bilal.htm). For exhibitions and interviews see: [www.enkibilalandeuxmilleun.be](http://www.enkibilalandeuxmilleun.be) and [www.lesinsomniaques.com/bilal/bilal.htm](http://www.lesinsomniaques.com/bilal/bilal.htm) with three video-clip interviews.

<sup>27</sup> Sampanikou, 2001 and 2004.

<sup>28</sup> An ironic (and prophetic) reference to the 21st century, months before 9/11 (2001).

<sup>29</sup> Christin – Bilal, 2000.

Another case of Posthuman production comes from Greece in 2000s and, similarly to the bulk of comics and graphic novels production from the year 2000 and after, derives manga archetypals. Constantinos Papamichalopoulos (b. 1975) is a typical representative of the Greek generation of the nineties, whose North American and manga influences become more than clear in his both script and design. Papamichalopoulos interprets the contemporary world through violent suffocating black and white images. He draws them as monumental size figures in big blocks of black ink and projected on huge all-white backgrounds. He owes the noir atmosphere of his stories and the monumental size of the figures to his favorite United States' designers Jack Kirby and Frank Miller. On the other hand, he owes the facial characteristics of his protagonist and his name: *The Japanese* to his manga influences.<sup>30</sup>

*The Japanese* (2000 - 2008) is a two-volume adventure of a battailous Metahuman being in Athens, somewhere in a distant future, in a society that is at the same time familiarly Greek that also reflects parallel contemporary political realities. Both albums function in three ways at the same time: a. as expressions of Post- and Meta-human ideas, b. as political criticism, c. as a tribute to manga. *The Japanese* is at the same time human and cyborg. In his era, human and machine have been so assimilated that they have become a new hybrid human breed in a machine ruled world. *The Japanese* is actually a stranger in a strange land, the land of Greek decadence and pessimism, where he has to fight in order to survive. The plot is difficult to follow as it is based on poetry. In the first album, the Japanese enters the Athenian underground where entrance is prohibited after fighting a huge machine cop whose size is duplicated every time he shows off his authority. This notion of the Police as servants and keepers of a corrupted System that denies entrance to anyone who isn't a part of it, apart from bearing Posthuman elements, is common to both anarchist and left ideologies in Greece inherited from contemporary historical facts. In the first pages of the second album the Japanese escapes been killed by an armed and swearing Orthodox priest, while later he returns armed with a hyper-weapon to kill the priest. The whole story evolves like a videogame with cops and priests setting ambushes around the Japanese and swearing at even God himself, while the Japanese conflicts them and answers to their swearing with poetry verses<sup>31</sup>. *The Japanese* battles their 'monstrous' face and their hypocrisy.

Apart from being a Japanese,<sup>32</sup> the hero also bears the facial characteristics and style (e.g. shaved head) of the designer himself, thus denoting the issue of artistic isolation and the search for identity. This is also a way for the artist to express his commitment to manga as an *otaku* ['devoted follower paying respect' in Japanese] and his respect to the Japanese culture, the first that can really be recorded as Posthuman. In the first album, the human Japanese is transformed into a human-machine cyborg because he 'is bored of this miserable life in an unpleasant city surrounded by unpleasant people'. To escape

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<sup>30</sup> Papamichalopoulos, a talented Fine Arts graduate, is also a visual artist. His artistic work is highly influenced by black and white photography, a tribute to the era when art becomes the product mechanical reproduction through photography, sharing Walter Benjamin's ideas as indicated in his classic famous essay written in 1936 (See: Benjamin 2008).

<sup>31</sup> These battles against the priests reflect strong disapproval of the Greek Church's involvement to political and social life, as some of the revealed major political and economical scandals in Greece involve Church people related to politicians.

<sup>32</sup> According to everyday speech in Greece, a 'Japanese' is a person that keeps a stranger's attitude in any situation, e.g. 'Stop playing the Japanese to me!' [in an angry voice].

this, he becomes a cyborg and heads to Eleysis<sup>33</sup> to find the truth. Cops transformed into cyborg creatures will try to stop him countless times and he will even fly acquiring machine wings to fulfill this escape.

However, I believe that the most Posthuman and interesting part of the *Japanese* is the second album, *The Japanese. Deuteronomion* [Deuteronomy-The Biblical Book], published eight years after the first (2008). This is the story of a return or a passage ritual from *myesis* [rite of passage] to fight against all aspects of New Hellenic reality. The enemies here aren't only the cops and the priests, but all 'Neohellenes'. From this generalized aspect Papamichalopoulos gets deep into both Nietzsche and Transhumanist thought viewing the intellectual artist as *Übermensch*. Therefore, a series of sequential battles in the album comprise a totally necessary and 'holy' war: the private (?) war of the Japanese that is seeking for the Greek origins to ancient cults, against the enemies of the strange country. Posthuman turns here into a Greek issue related to the preservation and prevalence of ancient values.

### C. *Chaos* by Philippe Druillet

The Japanese's suffocating world also bears elements of Phillippe Druillet's influences. Tribute to the famous French designer has been paid by several Greek designers so far. Known for his adaptation of Gustave Flaubert's *Salambo* (1862) in a series of graphic novels, Druillet has created the perfect Posthuman protagonist, Matho or Matosh (according to Flaubert) and his alter ego Lone Sloane (according to the designer), a space traveler and warrior. Druillet published his first Sloan stories in 1966 (first album in 1972)<sup>34</sup> and later moved into the *Salambo* (1980), *Salambo 2- Carthage* (1982-1984) and *Salambo 3- Matbo* (1986) graphic novels. *Chaos* comes many years later, as an independent continuity. In the story *Chaos*, published in 2000, Druillet introduces us to an amorphous Metahuman world: "Fascinating monsters, idle intellectuals, beauty lovers satiated by ancient treasures; their palaces, like ancient caravans, are flooded by Cashhan treasures. Their museums are temples. Their gardens are the planet. Their oracles are memory collectors. Their religion is the ultimate art. Madness, for once more! They seek immortality before death. In vain, however. Time is against them. For ever..."<sup>35</sup> *Chaos* is the ultimate mutation and the warriors engaged into it cannot have purely human physiognomy and nature. Sloan's risen body has actually been reconstructed. He is a compilation of prosthetic surgeries therefore his body is technically 'improved' but physically disfigured. Similarly to the aforementioned Metabarons, he faces the tragic irony to get distance from human nature in order to comprehend and conquer it.

## III. Conclusions

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<sup>33</sup> The ancient Greek city, a religious center in antiquity and the place of a famous sanctuary, now an industrial suburb of Athens.

<sup>34</sup> For Druillet visit: <http://www.chez.com/druillet/bd.htm>.

<sup>35</sup> Druillet, 2

The stories presented above summarize the centrality of the notion of producing a *new meaning* in contemporary comics and graphic novels in Critical Posthuman terms and underline:

1. The need for an ultimate ‘beginning’ for all, through a return to the roots of philosophical thought and creative imagination that consist the core meaning of being ‘human’ in a meta-technological era,
2. The need for art to become ‘dangerous’ once more and spread philosophical ideas – Critical Posthuman ideas on this occasion,
3. The need for a new, inclusive Humanism, in alternative Greco-Roman and Renaissance terms, similar to what Euro-Transhumanism is now denoting. According to Edgar Wind,<sup>36</sup> Plato would be jealous of the condition art has fallen into nowadays, as the terrible demon of imagination he so hard tried to exorcize, had lost its disastrous powers and art is becoming harmless. Hegel has on the other hand explained that when art moves into a safety zone it can be very popular but its influence on our lives will disappear.<sup>37</sup>

This is not the case with comics and graphic novels nowadays that consist a ‘dangerous’ art filled with Critical Posthuman thought.

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<sup>36</sup> Wind, 22.

<sup>37</sup> Hegel, *Forlesungen über die Aesthetik* I, εκδ. H.J. Hotho, 1835, 134.

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## **PART II**

# **TECHNOLOGICAL WELLBEING, TRANS- AND POSTHUMANISM, EURO-TRANSHUMANISM: CULTURAL PERSPECTIVES**

# WELLBEING AND MASS CULTURAL PRODUCTS IN THE AGE OF POSTHUMAN

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Panos Kritikos\*

## ***Abstract***

*Examining the concept of well-being through a posthumanist lens, it is difficult to ignore the contribution of mass cultural consumption products in shaping the perception of the “consumer audience” regarding what is defined as “living well.” Mass cultural products, directly linked to the composition and functioning of cultural industries since the early 20th century, map the needs, desires, visions, and concerns of an audience trained to associate these needs with objects, narratives, and representations that stir the subconscious and “materialize” in the real world*

## **I. Introduction**

From the sterilized and commodified version of the “American Dream” of the 1950s and its connection to the “accessible to all” capitalist model of economic development, through the search for meaning in the contemporary world of the 1960s and 1970s—where the internal quest for individual and social utopia grew and ended abruptly within a few years—and the post-apocalyptic visions and nightmares, remnants of the Cold War frenzy of the late 20th century, pop culture products have been continuously present and growing. Sometimes to depict and satisfy desires (real or imaginary), sometimes to alleviate the pain and insecurity of the hyper-demanding and competitive daily life, creating the necessary safe space (a comfort zone) on one level and the nostalgic perception of utopia on another, and sometimes to familiarize the audience with the fear of the Unknown and all those elements of the material world that cannot be controlled, offering the audience the necessary vocabulary with which to frame their reality.

The digital reality of the 21st century was dynamically prefigured decades earlier, initially in a rudimentary form, with greater depth from 1970 onward, as a form of prefiguration of events and concerns through a plethora of cultural records ranging from simple objects of childhood daily life to complex, philosophically oriented artistic representations. With the main medium of recording being Science Fiction in all its forms, the 20th century familiarized the audience with concepts, terms, technological achievements, and possible versions of a foretold future, largely creating its own idiolect, initially limited, expanding later as dissemination and recording media evolved and creating the first methods for decoding a future reality. The contribution of *Postmodernism*

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in the second half of the century to the analysis, understanding, and connection of historical past with a rapidly transforming world was decisive for framing the philosophical and analytical model of reality perception. Throughout this journey, mass cultural products were present in co-shaping the perception of the emerging new world. Books, comics, games, television, and film productions compose a diverse and often chaotic mosaic shaping and reshaping the perceptual capacity of the consumer audience, which, depending on dissemination capability, sometimes acquires universal characteristics turning objects and images into instantly recognizable symbols (pop culture icons), and other times is limited to creating safe perceptual spaces enhanced by the use of digital communication media. In any case, it is difficult to disregard or ignore the decisive contribution of this cultural mosaic that constitutes the distinct features of the term *pop culture*. For decades, pop culture products have functioned as reflections or distorted versions of contemporary daily life, which, with changing dynamics depending on geographic location, transform the perception of existence into a postmodern palimpsest that, under the dictates of social, cultural, and technological changes of the 21st century, must be woven as part of a new worldview and life perception.

At this exact point in time, the theoretical approaches and reflections of *Posthumanism* seem to be reshaping the content of contemporary mass cultural products. Or could the opposite be true? Perhaps these products, fulfilling roles similar to those they played in the previous century, prefigure developments of the new and reopen a window of dialogue regarding the search for meaning in the world that is coming or is already here. Could the concept of well-being in the 21st century be described by contemporary cultural productions that oscillate timelessly between the notion of consumer goods and a means of perceiving reality, preparing answers to questions far beyond the realm of commercial management and moving to the margins of philosophical reflection?

The text that follows will attempt to examine new fields of ideological and ontological inquiry incorporated into the content of cultural industries today, which reflect at a semiotic level the dialectic of posthumanist theories. The “world” and the “body,” dominant fields of study in the posthumanist research spectrum, constitute the building blocks for shaping the perception of well-being both materially and digitally. Likewise, cinema and comics, two cultural landmarks of *Modernism* since their inception, explore, as narrative forms enhanced by the presence of the image, both the content and the degree of penetration of the concerns of the respective historical periods into consumers’ cultural perception. In the second half of the 20th century, these two storytelling techniques, riding on *Postmodernism*, contributed to shaping perceptions of the historical past and the imminent future. With reference, therefore, to recent examples from television, cinema, and comics, the concerns set about the shaping world and the role to be played by new perceptions of the body and the notion of the “human,” in conjunction with new technology, in the reality of the 21st century will be examined. The post-apocalyptic dystopias of the TV adaptation of the comic book series *The Walking Dead* and the new cinematic version of *Planet of the Apes*, where familiar forms of dystopian futures are used to redefine the overall meaning of existence and what is defined as “human,” but also the dystopia of prosperity and existential entrapment satirically mapped in the live-action cinematic representation of the iconic doll Barbie, constitute indicative samples regarding the infiltration of the posthuman perspective into widely consumed cinematic and television products. Similarly, in the exploration of consequences of the penetration of the digital world into the body and mind, the comic

book series *Tokyo Ghost* offers its dystopian version, while in the movie *The Substance* and the comic book series *Come Into Me*, the human body and consciousness form the narrative field where transhumanist interventions meet the “body horror” of David Cronenberg’s cinema. Alongside additional references to 21st-century cultural products, specific aspects of the posthuman approach to the concept of well-being, as reflected in the pop culture production of the Western world, will be examined.

## II. This is the New Shit: Dystopia as Posthumanist Renaissance

“Everything has been said before  
There’s nothing left to say, anymore  
When it’s all the same,  
You can ask for it by name”

*This Is the New Shit*, Marilyn Manson  
 (“The Golden Age of Grotesque” album, 2003 / “Matrix Reloaded” soundtrack, 2003).

When in 1516 Thomas More wrote the text of *Utopia*<sup>1</sup>, the reader of the time was invited to enjoy a narrative functioning as an allegory, as political and social critique, and as an alternative perspective on the organization of an ideal state. Describing a fictional island and its social and political structure, the text operates within the realm of the literature of the *Fantastic* and in the space a modern reader might describe as *Political Fiction*. In More’s fictional world, a world of contradictions is woven in which the concept of well-being teeters between paganism and conservative Christian beliefs, “socialist” social structures and “imperialist” economic organization, and the deep conviction in the superiority of human nature over irrational living beings. Several centuries later, the second half of the 20th century finds humanity attempting to deconstruct this weave by creating a contrasting dichotomy: the capitalist utopia of the American Dream of the 1950s and its counter communist version through the Union of Soviet Socialist Republics (USSR). For many years, cultural mass production either highlighted, incorporated, or criticized this opposing view, leaving a significant mark on theoretical attempts at analyzing the issue’s many facets. The critical presentation of ideological issues emerging from the confrontation of these two worlds through allegories, satirical approaches, and mostly via the presentation of alternative versions for shaping a possible future formed the core of cultural products moving in the broader realm of the *Fantastic* and substantially contributed to building a theoretical dialogue touching on philosophical issues. Among other things, the notion of well-being became a field of philosophical debate, focusing on two main axes: how humans perceive the human body (and everything connected with it) and the world in which that body must survive.

Two of the most characteristic examples (which could be viewed as milestones) of how this issue was introduced to the broad public of the 20th century come from cinema. In 1968, George R. Romero unfolded a nightmarish version of redefining the human body and the notion of immortality (largely connected with the idea of well-being within

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<sup>1</sup> Thomas Hobbes, *Leviathan, or the Matter, Forme and Power of a Commonwealth Ecclesiasticall and Civil*, edited by Michael Oakeshott (New York: Touchstone, 2008).

the framework of a religious and technological utopianism) with the film *Night of the Living Dead*. Moving away from traditional forms of representation of the “invasion” of a dead body into the living world, such as those recorded in films like *White Zombie* (1932) and *I Walked with a Zombie*<sup>2</sup> (1943), Romero presented a nightmarish version of “resurrection” of the human body and its elevation to a state of post-existence, characterized by acquired brain functions and cannibalistic instincts. These new post-human creatures lack the dominant element of the humanistic version of human nature, Reason, and elevate Instinct as the main driving force of their action. This inevitably leads to their entrapment in an existential deadlock, in a parasitic non-existence (a distorted version of Christian Purgatory) as they teeter between two worlds without belonging to either. They move and feed instinctively, are and are not the individuals who were the foundation of their existence, and fall into inertia when there is no stimulus to activate their action. In the ensuing years, variations of this representation (some created by Romero himself) formed their own distinct subcategory of fantastic narratives which did not limit themselves to depicting an intense survival struggle that would end with the lighting of the cinema lights but composed symbolic narratives oscillating between existential anguish and sociopolitical reflection. This version of representing the human body opened the way for further exploration, through the emergence of body horror as a distinct narrative cinematic subgenre, notably through the filmography of David Cronenberg from the 1970s onward. The human body no longer represents the safe and familiar shell surrounding human existence but a potential source of uncontrolled terror. The sanctity of the body as the vessel of divine breath, according to Christian doctrine, turns into a symbol of social and moral decay, transforming the “living dead” into a post-human creature-symbol of a foretold, nightmarish future.

The same nightmarish future, within an updated technological and ideological framework, is also explored in the film series *The Matrix*. In 1999, cinephile audiences experienced on screen the updated version of what had already been foretold in 1984 through James Cameron’s *The Terminator*<sup>3</sup> the idea of the destruction of the world and the eradication of humanity by Artificial Intelligence. The Wachowski sisters present an innovative cinematic interpretation of an indeterminate near future where they pose a series of philosophical questions that go far beyond the usual level of semiotic critical analysis, openly inviting the audience to experience a complex cinematic and narrative journey where they must choose between two seemingly simple options: would they take the red pill or the blue pill<sup>4</sup>? This is because, as the film progresses, the perception of not only all the elements composing reality but also the spectator’s understanding of what is real and what is not is openly challenged. Before the invasion of the digital world of social networks, the Wachowskis openly prompt the broad public to reflect on how they

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<sup>2</sup> Films dealing with the topic of “zombies,” before George R. Romero, followed the religious tradition of voodoo magic in representing the resurrected dead body, in which a sorcerer animates a corpse to use it as his thrall.

<sup>3</sup> Possibly the first science fiction film that records the danger of humanity’s extinction caused by Artificial Intelligence. In the film, a military AI system named Skynet activates a series of atomic bombs destroying the planet and starts a war between the surviving humans and machines.

<sup>4</sup> In the first part of the film, the character Morpheus offers the protagonist Neo two pills. The red pill will give him the ability to perceive the world of the Matrix as it really is, while the blue pill will restore him to his previous cognitive state before meeting Morpheus. Essentially, it is a recurring philosophical question in the Matrix filmography concerning the choices a person makes regarding how to perceive reality.

shape their reality and to choose what they want to perceive as real and what not. Therefore, the open questioning of “the real” and its associations, through a successful, commercially and critically, cultural product, brings the consumer audience face to face with posthumanist philosophical questions that, even in their popularized form, under normal circumstances would lie outside their range of interests. A similar example of the way cultural industries contribute to shaping public opinion regarding technological innovations can be found in the early 1990s when the public discussion about the cloned sheep Dolly prompted mainstream cultural production to develop narratives examining practical, ethical, and philosophical issues about cloning<sup>5</sup> Likewise, *The Matrix* serves as a reference point for the penetration of a posthumanist perspective in a significant number of 21st-century cultural products in the Western world and as a film that, among other things, raises important questions about how humanity perceives the concept of well-being. Humanity, enslaved by Artificial Intelligence, is mentally sustained by the simulation of a (supposedly) utopian world; its body is mechanically preserved through a complex transhumanist supply network; its dreams sustain the energy supply of the machine world, and its awakening relies on the strength of its will to choose conscious liberation and the appropriation of dystopia against conscious participation in a superficially constructed utopia. “This is the New Shit,” according to Marilyn Manson, a song that no coincidence was part of the soundtrack of *The Matrix Reloaded*. The human body and the world surrounding it are placed at the center of philosophical reflection within a posthumanist framework shaped by the new technological, social, and ideological world emerging in the 21st century.

### *A. “We are the Walking Dead”: New Worlds, Familiar Passions, and Thoughts on the Future of Humanity*

Paraphrasing T.S. Eliot, the world of *The Walking Dead* did not end with the “bang” of a nuclear war foretold by the Cold War dystopias of 20<sup>th</sup> century speculative fiction but with the “whimper” of the “enemy within” brought by technological evolution of the 21<sup>st</sup> century<sup>6</sup> At least, this is what Robert Kirkman and Tony Moore implied when in 2003 they released the eponymous comic series and respectively the producers of the eponymous TV adaptation in 2010 did not explain why the old world ended<sup>7</sup>. And this is because in reality, as shown by the Covid-19 pandemic, when all those elements that constitute the normalcy of daily life cease to function, the reasons for it matter little to the average person; what remains is the management of the new normal and reflection

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<sup>5</sup> Dolly the sheep was the first mammal cloned from an adult cell. Although not the first cloned animal, it became famous due to the extensive media coverage. This publicity opened public debate on cloning and bioethics, both on television and academic levels. Most of the global population was unaware of the term “cloning” until then.

<sup>6</sup> The reference concerns the lines “This is the way the world ends, Not with a bang but a whimper”, from the poem “The Hollow Men”. See T. S. Elliot, “The Hollow Men,” in *T. S. Elliot: The Complete Poems and Plays* (London: Faber & Faber, 2004), poem originally published 1925.

<sup>7</sup> This is one of the basic plot elements of the comic book series that was also preserved by the team of its television adaptation. Although many readers in the series’ correspondence column wondered about the causes of the resurrection of the dead (with many of them proposing their own theories), Robert Kirkman very consciously avoided giving an explanation considering that it would not contribute anything substantial to the artistic goals he had set for the narration.

on where one stands and how one proceeds to the next stage. Focusing mainly on the TV adaptation, purely for reasons related to its wide audience impact and not the quality of the original material, in *The Walking Dead* the viewer/reader witnesses a multidimensional and thorough presentation of a world that unexpectedly and “silently” vanished<sup>8</sup>. All the taken-for-granted elements that shape the daily life of Western humans (electricity, telecommunications, easy access to drinking water and food, etc.) become precious goods whose cost is often the protagonists’ very lives, as the “universal trust” that humanity placed until then in gold or money ceased to exist<sup>9</sup>. Simple objects turn into trophies of survival, since in the “new” hunter-gatherer state humanity reverted to, value codes have shifted or completely reversed. The viewer/reader becomes witness to the regression of the human species to its original developmental stage, where it is forced to regain acquired survival skills lost millennia ago. The reconnection with the natural environment and the primitive nature of humans becomes violent and traumatic, both physically and psychologically. Instincts are unleashed and social rules collapse. The image of the “reborn” human in *The Walking Dead* is not that of the “noble savage” found in previous theoretical approaches but a direct contrast to the image of the actual living dead in the narrative. The series’ protagonists did not choose to reunite with nature within a conscious renunciation of the modern world and its social and technological structures, aiming ideally to save the planet from the “virus” of humanity (a dominant term for the human species in *The Matrix* and similar narratives), but found themselves trapped in a violent regression equating them with the roaming corpses of their kin and friends. “We are the walking dead!” exclaims at one point the series protagonist Rick Grimes, realizing the existential deadlock in which they are trapped as their relentless and often futile wandering in search of safe refuge and satisfaction of basic needs equates them with the eternal wandering of the resurrected dead. Alongside the corpses of the dead, the wandering bodies of the survivors give a sense of endless waiting for a predetermined end as they could pass to the other side of the balance at any moment. In many parts of the narrative, the side of the dead opponents is enriched with familiar faces who, one TV episode or comic book issue earlier, were on the opposite shore. This new spiritual sense of existence’s futility detaches from the earlier sense of futility—a product of capitalist materialism of modern societies—and acquires an ontological presence demanding a new level of consciousness. This consciousness seems to come to the series protagonists through a succession of internal processes starting mentally and psychologically and actualized in practical management at the material level.

In this new state of existence, the individual self is reevaluated. Each survivor in the world of *The Walking Dead* must manage a trauma: the trauma of survival. The person who saw their family and friends perish, powerless to intervene; the person who sacrificed others to survive; the person who sees themselves “mutating” into something difficult to accept. Throughout the series, the internal transformation of the protagonists dominates the narrative structure. A police officer discards any sense of Law as the adhesive tissue

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<sup>8</sup> The television series evolved into 11 seasons, totaling 177 long running episodes, between 2010-2022, seven spin-off series, and four web series. The original comic book series was published in 193 monthly issues (2003-2019) and many one shot specials. Both the large number of episodes and the large number of issues released offered the viewer/reader an in-depth picture of the world being portrayed.

<sup>9</sup> For the “universal trust” that led to the creation of money and the way it functions during the social evolution of the human species, see: Yuval Noah Harari, “Chapter 10: The Scent of Money,” in *Sapiens: A Brief History of Humankind*, translated by Michalis Laliotis (Alexandria, 2015), 183–97

of societies and resorts to extreme violence and atrocious crimes to protect his family and group. He succumbs to the law of the strongest as, in the new order, the law of natural selection prevails. An abused wife and mother becomes the community's deadliest weapon, exhibiting indomitable will and unparalleled strength under any circumstances, even in the presence of her dead child. A high school teacher turns into the series' emblematic "villain," a "machine" of pain and chaos, motivated primarily by imposing his will on those who refuse to yield to his desires. He later evolves into an archetype of the repentant criminal. The list of characters exceeding their initial selves and reaching a new level of existence and action is long. Their common feature is transcendence: of thought and perception, personal trauma, and their powers. The degree of success in this transcendence varies among individuals but remains a prerequisite for survival. The new reality demands a new kind of human who rejects moral dualisms, integrates with the environment, and unlocks latent instincts and abilities. There are no absolutes, easy solutions, or conventional moral values. Everything is reevaluated by circumstances. Social civilization follows the collapse of material civilization and reconstitutes itself under a multi-perspective view, without certainties or guarantees. The humanistic elevation of individuality recedes into the background. The series' protagonists must shed the identity elements shaped before the collapse and identify their existence with the desires of the collective. Strength lies in numbers. The survival of the individual aligns with that of the group to which they belong. A group in which one is compelled to enroll to increase chances of survival. And each group is forced to cooperate with others and create communities to increase the above chances.

The posthumanist perspective in the series, regarding the approach to well-being, is mainly reflected in the composition, structure, and functioning of the communities formed in this new world. On the first level, well-being equates to survival. In the early period of the collapse of normality, the protagonists (acting essentially as representative specimens of the human species) struggle to survive. Time seems to have stopped for them, and their days exhaust themselves in a search for food and refuge. Their descent to the hunter-gatherer level does not allow for long-term planning, and their previous cultural background seems to contribute little to their survival under new conditions. The violent transition is reinforced by the presence of the resurrected dead lurking at every step. However, this initial dualistic confrontation between the "good" survivors and the "evil" dead is soon replaced by a broader perception of Evil. Early in the series, the living dead become part of nature, akin to a destructive tornado, a deadly disease, or a dangerous wild animal. They dominate the space but can be bounded, limited, and sometimes used as defensive or offensive weapons. As the protagonists' familiarity with the living dead progresses, their viewpoint on the danger they represent changes. They "respect" them but do not fear them. They learn to coexist with them. They mimic their behavior and move relatively safely among them. At various points in the plot, the protagonists smear themselves with the intestines and blood of the dead to mimic their smell, allowing safe passage among them; this acts as a symbolic seal of this coexistence—an unholy "baptism" leading to their transition to the next level of existence: harmonious coexistence with horror. This is because true horror does not come from the dead but from surviving humanity. The perception of well-being is distorted. Survival is even associated with living alongside the hybrid deformation of human nature represented by the living dead.

The regression of human nature and the collapse of social and value structures leads survivors to form communities that sometimes draw on past social structures and sometimes adopt entirely new characteristics. The “Alexandria” community, where the protagonists seek refuge, is a typical example of an agrarian community reminiscent of similar communities in historical pasts. Its organization and administration are determined by a council of citizens electing a coordinator. Each member is assigned a role aimed at community development and prosperity. Its strength lies in cultivating citizens’ sense of security and collective responsibility. Sustainability and prosperity are ensured by gradually recovering forgotten skills from members (mostly urban residents) like farming, water extraction, and animal domestication. Simultaneously, all members, regardless of gender or age, are trained in protection techniques so they can also function as a military body. A similar organization and structure exists in “The Kingdom” community. The difference there lies in power being assigned to a “king,” who, along with a group of advisors and elite members, becomes responsible for the “kingdom’s” prosperity. Due to the king’s sense of responsibility toward his “subjects,” the community prospers, and he (a former zoo employee) accepts his role (speaking Shakespearean English and walking with a tame tiger as a symbol of power), believing that reviving a model of organization that ensured the growth and prosperity of similar communities in the past will fulfill its purpose now. Both communities strengthen their forces by welcoming new members wishing to join them and show no expansionist ambitions.

In contrast, the “Woodbury” and “Saviors” communities adopt more authoritarian and aggressive strategies. Led by The Governor and Negan, respectively, two disturbed personalities with strong narcissistic traits, these communities restore the model of absolute power with dictatorial touches. Power is “assigned” to members standing out due to their lack of moral qualms and capacity to impose their will by any means. Both The Governor and Negan do not hesitate to resort to any means to ensure community survival, equating that survival with their own existence. These two communities, like “The Kingdom,” dissolve once their leaders are either murdered or lose the ability to impose authority. A traditional model of power exercise and societal functioning that has historically ensured human survival is, once again, ousted under new historical circumstances. The new humanity forming in *The Walking Dead* world, beyond personal management of new consciousness imposed by conditions, is propelled toward seeking new forms of social organization.

In this direction, and indeed in a groundbreaking way, the community of “The Whisperers” seemed to move. Fully identifying human nature with that of the living dead, the Whisperers harmonize their voices with the sounds of the moving corpses, mimic their movements, and “wear” their faces. The members of the community consider themselves dead both literally and metaphorically. They use masks and body language allowing them to move safely among the dead, wander as a unified pack, and act jointly. Their identification with the dead acquires even metaphysical characteristics as they perceive the identity of this coexistence almost in absolute terms. For the members of the community, death is merely the next level of transition from this intermediate hybrid existence, and under the new normal, the members cease to function as autonomous units and there are no distinct social roles. They even reach the point of completely rejecting human identity by not using names (the leader of the pack is called simply Alpha) or adopting dietary habits based on raw food and the consumption of rodents and insects, while living in burrows or fully exposed to the natural environment. The

resurrected dead around them seal this new identity and act as a physical extension of their new selves. The “Whisperers” emerge as a new species, a non-genetically modified post-human, as a product of a symbolic evolutionary process attempting to adapt to its new natural environment and to abolish or redefine the dualistic separation between “dead” and “living.” Despite their “self-imprisonment” in this hybrid level of existence and the revulsion this evokes in readers and viewers of the series, the community of “Whisperers” seems to function harmoniously, with members accepting and harmonizing with the new reality and openly “challenging” conventional social structures of organization and function.

This “provocative” contrast between typical social structures and the community model of the “Whisperers” intensifies when the series protagonists come into contact with the community of the “Commonwealth.” The first contact with the community is portrayed as a cultural shock for the protagonists for two reasons: The first relates to the fact that this specific community is a reflection of the world that was lost, a world that in the consciousness of the wandering survivors had been assimilated as a definitive, irreversible loss for which they have mourned and now are called to re-approach. The second relates to the fact that they are unable to operate or adapt to this social organization model with which they have essentially lost every trace of familiarity. The “Commonwealth” community gives the impression of having remained untouched by the end of the world. More so, it is presented as a utopian version of the 1950s capitalist American Dream: happy citizens, abundance of goods, prosperity, welfare, security for all. For the citizens of the “Commonwealth,” the end of the world was just a nightmare that passed and, for some, a situation they almost never experienced. Its organization and functioning continue to be based on past structures, except for an enhanced level of external security due to special conditions. Therefore, one would expect for the series protagonists that this community would represent everything they have sought since the beginning of their journey. Soon, however, they realize that the return to this organizational model is problematic. This is because the sense of preserving the world before destruction represented by the “Commonwealth” is accompanied by the preservation of all the pathologies that accompanied it. Class division, nepotism, opacity, (covert) violence, and traditional roles of ruler-ruled seem to remain intact or at least adapted to new conditions. The concept of an external enemy (this time in the form of the living dead) continues to function as a pretext for the authoritarian imposition of “order and security” by the system, militarism normalizes in citizens’ consciousness (the community’s head of security enjoys celebrity status), and expansionism is justified as a means of border security and prosperity. As its name “Commonwealth” showcases, it continuously expands by voluntary or involuntary incorporation of other communities. The expansionist model of the old world (“you-must-join-us-to-become-stronger-and-we-will-protect-you”) used by the “Commonwealth” may seem “polished” compared to the violence of Negan and the “Saviors,” but essentially remains the same: pure, traditional imperialism.

The new psyche of the series’ protagonists, as shaped under the new conditions, struggles to handle the return to this model. For many characters, the return to this “normalcy” is accompanied by the reinstatement of their social roles before the collapse. Social roles they either rejected or surpassed during their personal trauma management. Dualisms and absolutes no longer have a place in their world. The experience of self-managed communities like “Alexandria” and “Oceanside” proved in practice that

prosperity can derive from harmonious balancing of social roles and actions; the identification of the individual with the community does not need to pass through the extreme collective consciousness (hive mind) model of the “Whisperers”; the expansion of community borders and members does not justify the violence of Negan and the Governor; and certainly, the reproduction of the problematic model of the old world does not guarantee the new one’s prosperity. For these reasons, they resist, unable to adapt or rather reintegrate. The series’ survivors did not just survive the onslaught of the dead but an entire perception and functioning system imposed on them by an ideological and social model requiring a very specific place in the world. In the world of the living dead, however, they shaped their path, fought for it, and are unwilling to negotiate it. Their conditions of well-being are no longer a matter of imposition or negotiation. No longer feeling “living dead,” they exploit the old system’s pathologies, organize their revolution, expose the community’s shortcomings, and win. The “Commonwealth,” as dreamed by its founders, collapses—not with a whimper but with a revolution.

### *B. “Do You Guys Ever Think About Dying?”: Existential Questions in a Plastic World*

During the Renaissance, Humanism focused on projecting individuality and the individual as a unit, offering a new proposal (or rather a reformulation of the perception of humans as formed during the Hellenistic era) regarding ontological existence. Inevitably, the concept of “well-being” detached from its exclusive bond to community, as understood in previous centuries, and focused on the spiritual and social development of the individual. The connection of “living well” with the idealized image of the human body is a product of this ideological shift which, timidly at first and increasingly over the centuries, formed a consolidated perception about which the perfection of existence passes through the perfection of the image. The technological advancements of the 19th century, which solidified the power of the image as the means of shaping contemporary visual culture, initially facilitated and later imposed the idealized image of the human body—sometimes as a means, sometimes as an outcome, often as a mass consumer product—on humanity’s consciousness. A simple tour of the modern internet world can confirm beyond any doubt the power images exert in the 21st century and the extent to which bodily “perfection” equates to existence’s perfection. And despite contemporary cultural and ideological movements like #metoo or the aesthetic and ideological elements composing woke culture undeniably projecting an anti-dualistic, multi-perspective, and consequently posthumanist (?) view regarding the aesthetic approach and representation of the human body, aesthetic representations established since the second half of the 20th century continue, if not monopolizing, at least dominating aesthetically: well-toned men and women, exercise and nutrition guides, recommended ways to shape a healthy daily life for body and mind, yoga, calisthenics, fashion advice make up a mosaic of proposals and perceptions, all under the prism of a consumerist and, consequently, capitalist viewpoint. The body as a “temple,” whose metaphysical nature is exhausted in the vessel surrounding it, and its identification with “well-being” as a result. The digital space functions not only as a medium but also as a field of representation of this perception, the “virtuality” of which equates with the “virtuality” of the medium itself.

A characteristic example of this “virtual” and image-based world perception is the plethora of mass cultural products. These consumer goods contribute significantly to shaping the receiver-consumer’s perception regarding the world image they form, as from a very young age they are “nurtured” with images, roles, and symbols determining what is considered acceptable or not, their role often expected to be adopted to be accepted by other community members, and, most importantly, the image they must build for themselves to secure success and “well-being.” The gender-based segregation of this “success recipe” was the dominant, dualistic view during the “explosion” of consumer goods in the 20th century. Since the 1950s, the *Barbie* doll has been the ultimate fantasy for young girls discovering in her wonderfully designed and ideally structured plastic world the components they must seek in the real world: a wonderful partner, a perfectly organized house, perfect friends, and a rich wardrobe ensuring an impeccable image for successful outings<sup>10</sup>. Similarly, the introduction of the “action figure” in the dreamlike world of young boys, during the 1960s, fueled childhood imagination with extensive adventures by adopting a multitude of dynamic roles characterized by hypertrophic muscles, oversized phallic associations, and weapons: fearless soldiers, brave firefighters and police officers, daring astronauts, barbarian warriors, and invulnerable superheroes secure the patriarchal perception of gender roles and guide young consumers’ imagination<sup>11</sup>. Regardless of the “play value” these representations offer, a factor that cannot be ignored and guarantees the timeless commercial success of these recipes is their connection with the surrounding cultural context. The reasons for Barbie’s commercial success could not be examined independently of the cultural and ideological elements composing the “consumer dream” of the 1950s nor independently of the emergence of the new age aesthetic and lifestyle culture of the 1980s and 1990s. Similarly, the success of *G.I. Joe* and *Masters of the Universe* could not ignore their semiotic connection to U.S. militaristic foreign policy or the image of the action hero methodically shaped by Hollywood production in the second half of the 20th century<sup>12</sup>. Although the timelessness and success of the products composing pop culture is a multi-factorial issue and not necessarily linked to politics, one cannot ignore, seeking the big picture, the role played by dominant ideological structures in the production of such consumer goods. It took some decades for Barbie’s world to be enriched with individuals of different ethnic origins or for dress choices outside the realm of “broadly accepted” to be introduced<sup>13</sup>.

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<sup>10</sup> The Barbie doll was created in 1959 by Ruth Hundler and since then has been produced by the toy company Mattel. It is one of the company’s longest-lasting and most successful toys, and both the name and the image of Barbie have become instantly recognizable worldwide. For the history of the doll’s creation, see the documentary: *The Toys That Made Us*, Season 1, “Episode 3: Barbie,” created by Brian Volk-Weiss, Netflix, 2017.

<sup>11</sup> For the history of the creation of “action figures” and popular boys’ toy franchises such as *G.I. Joe* and *Masters of the Universe*, see *The Toys That Made Us*, Season 1, “Episode 3: He-Man” and “Episode 4: G.I. Joe.”

<sup>12</sup> For the evolution, ideology, semiotics, and representation of the “action hero” in 20th century cinema, see: Yvonne Tasker, *Spectacular Bodies: Gender, Genre and the Action Cinema* (London: Routledge, 1993).

<sup>13</sup> Although the first doll with African features (named Christie) was introduced into the Barbie world in 1968, the first “black” Barbie was released in 1980, and it took another ten years for versions of the doll and her friends with different ethnic features to be released. Similarly delayed was the introduction of different or vulnerable social groups into the series. This conservative approach, directly linked to political correctness, multinational corporate practices, and the countless “variant editions” of the doll, is incisively satirized in a video on YouTube titled: “Black Metal Barbie or Daughters of Northern Darkness”. It is a fake commercial spot that follows the typical pattern of a 1990s Barbie product advertisement, framed with the extreme aesthetics of black metal and horror tropes associated with it, and could be interpreted both from a

And certainly, her cinematic adventures in the 2023 namesake film would have taken a very different form without the incursion of a posthumanist theoretical and ideological perspective into 21st-century mass cultural production.

The film *Barbie* (2023), directed by Greta Gerwig, could, under normal circumstances, simply be another cinematic adaptation of a successful franchise, with aesthetics and goals similar to numerous film adaptations inspired by comics and past toys, attempting to commercially exploit consumer nostalgia for their “lost” childhood or to reintroduce an old commercial formula to a new, dynamic audience, blending any anachronistic aesthetic elements with the aesthetic and ideological demands of the 21st century. To a great extent, this is also how a large number of cultural products linked to pop culture function: Nostalgia, postmodern critical approach and aesthetics, deconstruction, re-composition, pastiche. *Postmodernism* in the latter half of the 20th century set the ideological and aesthetic foundations for the semiotic reading and creative approach to a significant part of mass cultural products, but the 2023 *Barbie* film seems to take a step further. It does not limit itself to modernizing its image (after all, Barbie dolls have traditionally been the ones always following the dictates of contemporary fashion) nor to critically deconstructing its plastic world. The difference comes with introducing critical discourse into a virtual social framework that was not created to allow such, which is clarified to the audience already in the film’s promotional campaign. In the first short promotional trailer, the cultural impact of the creation of the plastic doll is stated: young girls dressed clearly in Victorian aesthetic clothes playing with baby dolls preparing them to take on the mother’s role, as shaped within a patriarchal framework, are shocked and impressed by Margot Robbie/Barbie’s adult proportions and daring swimsuit appearance. Following this is the symbolic breaking of the old doll and throwing it into the air, accompanied by Johann Strauss’s “Thus Spake Zarathustra<sup>14</sup>.” The clear postmodern reference to Stanley Kubrick’s opening scene of *2001: A Space Odyssey* (1968) adds an additional semiotic layer to the scene as it questions the possible expectations of the viewer. Is this a clever promotion of an otherwise typical toy-to-screen adaptation, or does the totemic connection of the doll to the traditional image of woman/motherhood (and its questioning) leave room for further semiotic interpretations? The answer seems to be given in the first official trailer, where amidst the impressively visualized plastic world and the Dionysian ecstasy of the protagonists, Barbie/Margot Robbie asks: “Do you guys ever think about dying?”

This simple and universally posed question about the mortality of human nature is reflected upon Barbie’s plastic and utopian world; a world carefully crafted not to be shaken by existential questions. The “invasion” of the concept of death into the “immortality” of the plastic dream is entirely compatible with the multidimensionality

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postmodern and a transhumanist perspective. For the video see: Gwenmarie White, dir., *Black Metal Barbie or Daughters of Northern Darkness*, Premiered at California Institute of the Arts, November 11/16/2017 (available on YouTube).

<sup>14</sup> In the opening scene of *2001: A Space Odyssey*, a group of ape-like prehistoric humans discover the mysterious monolith that “connects” the various scenes of the film’s episodic narration. Contact with the monolith “grants” human beings intelligence, and the scene ends with one of them throwing a bone into the air which, in the next scene, takes the form of a space station. Both the structure of the scene and the symbolism embedded in it are transferred unchanged to the teaser trailer for the *Barbie* movie. See: Stanley Kubrick, dir., *2001: A Space Odyssey* (MGM, 1968).

promoted by the posthumanist perspective. The questioning of Barbie's utopian world, unfolded in all its grandeur during the first part of the film, with the necessary satirical/humorous comments deconstructing the entire edifice of the utopian consumer dream on which the source material is based, is enriched by the reflection on what is defined as "real" and "human." The plastic world is portrayed as utterly real to its inhabitants but begins to deconstruct once the biological reality of death enters it. The "real" inhabitants of Barbie's world immediately appear less "real" once they begin to perceive themselves as real humans. Alongside them, their world malfunctions as all the transcendent elements of utopia "land" in reality. Once again, and following the traditions of body horror literature, the warning comes from the body itself. The "stereotypical" Barbie/Margot Robbie, from the moment she experiences her first existential crisis, cannot maintain perhaps the doll's most characteristic attribute: the unnaturally shaped and permanently pointed toes that handicap her in a bizarre stance, making her almost a parody of the female nature itself. Similarly, parody elements can be found in the anatomy of the "strongest man in the universe," He-Man, from the corresponding series of children's toys, *Masters of the Universe*, with all the possible and improbable muscle combinations that "challenge" the scientific understanding of human anatomy. If one accepts that in both cases these figures function as models reflecting idealized perceptions of representing the human body, the "invasion" of flat feet ("Flat feet!", scream in panic Barbie's other versions) symbolizes the stereotypical detachment from the surrounding space and its harmonization with a more realistic version of reality. The change in the stereotypical Barbie's perspective and the guidance she receives from her "weird" version introduce new data into the plastic world. The "weird" Barbie (not a standardized factory product but a DIY version by young girls who "vandalize" their dolls by creating their own "Barbie variants") seems on one hand the truest of the multiple versions of the same doll flooding Barbie's world and, on the other, seems to understand better than anyone what exactly is happening as she represents a dose of reality in an illusory world. She represents a real version of female representation, created by real girls refusing standardized and politically correct dolls and choosing to "infuse" their personal energy into designing and shaping their toy, crudely cutting its hair, dressing it in anything, and improvising makeup. This contrast between the real and utopian worlds runs throughout the film. Many elements of this contrast may seem familiar to viewers who have seen similar past films like *The Purple Rose of Cairo* (1985), *Last Action Hero* (1993) or *Pleasantville* (1998) where the juxtaposition of real/fantasy at a cosmological level functions as an interesting game of semiotic impressions. However, in this case, there is an open rupture with the dualistic perspective which seemingly questions the entire structure upon which the primary material is based<sup>15</sup>.

If Barbie of previous decades represents a constructed childhood fantasy and a shortsighted depiction of the world operating in a dualistic and evidently constructed framework regarding the representation of the human body and social roles, the cinematic Barbie seems to propose a multidimensional perspective concerning existence

<sup>15</sup> In all three of these movies, the narrative pattern of contrasting the "real" world with the world of fictional stories is followed. According to this, either a fictional character enters the real world (as happens in the *Barbie* movie), or vice versa. This symbolic "invasion" of the real into a "fictional" one offers an opportunity for numerous social, cultural, philosophical, and other commentaries by the creators, and is a common tactic in the postmodern reading of contemporary cultural products. For more details, see: Kawa Abraham, *Virtual Gazes: Postmodern Narration in Comics, Cinema, and Literature* (futura, 2002).

and well-being. It approaches consumerism as an inhibitory factor in the evolutionary process of human nature that confines perception and action within contradictory dichotomies that protagonists must overcome. Barbie's matriarchal utopia malfunctions in the same way the patriarchal perception of the real world does when introduced into Barbie's plastic world by a disillusioned Ken (Barbie's friend and potential love interest) who tries to break free from the empty and stereotyped image shaped by his manufacturers in an effort to harmonize the masculine figure with the "girly" fantasy<sup>16</sup>. Free will and expression are promoted as the dominant new values of Barbie's world which, combined with a turn (or perhaps return) to political action, attempt to weave oppositions into a new reality. Like the protagonists of *The Walking Dead*, both Barbie and Ken experience an awakening that prevents their return to the previous state as they begin to see the world differently. Their entry and experience in the real world during the film transforms their shifted perspective into impetus for action leading to an overall reevaluation of their existence and world. Although part of a fully mainstream American Hollywood blockbuster filtered through the demands of a mass consumer product, they represent a characteristic example of posthumanist perspective infiltration in contemporary cultural goods where restructuring perception is proposed as a prerequisite for significant transition to a new state of being. Barbie does not transform from a doll to a real woman thanks to the magical power of some Blue Fairy, as in Carlo Collodi's classic tale Pinocchio, nor because she became a model "good girl" according to dominant views but through conscious disengagement from the dualistic view of her role and acceptance of those aspects previously seen as unacceptable elements of her nature. Her visit to the gynecologist at the film's finale could be seen as a symbolic acceptance of her sexuality and overall femininity in an attempt to give feminist dimension to the work or as the culmination of a quest where "the plastic doll" chooses to coexist with the "real woman" trying to redefine what is real or not, acceptable or not. The rejection of the assigned role does not necessarily accompany the rejection of her image. Margot Robbie/Barbie remains an impressive and powerful woman of the 21st century. The intertwining of these two identities, combined with acceptance of multiple social roles aligned with modern demands, seems to shape a differentiated and multiperspective understanding of the notion of "well-being" moving along both spiritual and ontological levels.

### C. "Remember you are one": Interweaving as an Existential Continuous Becoming

An equally interesting approach to the multiple forms that the search for "well-being" can take, and the nightmarish dimensions that can emerge from the obsessive quest for "immortality" and the perfection of the image identified with it, is found in Coralie Fargeat's film *The Substance* (2024). Building upon the nightmarish and posthumanist deconstruction and representation of the human body that dominates much of David Cronenberg's filmography, and with clear references to the eerie aesthetics and surreal semiotics in David Lynch's work, *The Substance* records the internal and external conflict

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<sup>16</sup> Essentially, it is a commentary on how the children's toy manufacturing industry operates, which, largely for purely accounting reasons, imposes specific patterns of representation and behavior that "trap" children into reproducing certain social roles, something that the transhumanist perspective of the movie attempts to deconstruct.

of Elisabeth Sparkle/Demi Moore with the nature and image of female identity. Starting from the protagonist Elisabeth's professional downfall from a long-running and popular fitness TV show due to her age, Fargeat introduces numerous feminist issues with multiple layers of reading and ideological implications: the interdependent relationship between the male and female gaze, the commercial exploitation of the female image, the social imposition of image perfection as an end in itself or an obligation of female identity, and the biological racism this entails are approached as ongoing issues concerning female nature and identity in the 21st century. The transhumanist elements introduced in the narrative, where the use of modern technology allows the creation of a new, renewed, and perfected genetically and physically copy of Elisabeth, in the form of her alter ego Sue/Margaret Qualley, shift the level of ideological conflict. The improved version of Elisabeth, born literally through cellular tissue using a special serum, not by normal childbirth but via a horrific detachment from her back reminiscent of the alien birth in John Carpenter's film *The Thing* (1982), does not conflict with the male gaze and patriarchal perspective that led her host to seek a controversial pharmaceutical escape but turns against the very body that birthed her. The clash between Elisabeth and Sue for the time and space they will claim turns into a pointless, vain, predetermined and ineffective battle for "immortality," where anxiety about maintaining the perfection of the image opposes the basic instruction accompanying the serum: "Remember you are one." Like William Wilson, Edgar Allan Poe's protagonist, the conflict is not about confrontation with the world but competition with one's own self, inevitably ending in defeat<sup>17</sup>. Assimilating the dialectic of the modern capitalist dream where "well-being" is linked to image perfection, the younger and more beautiful Sue fights to impose her presence fully aligned with the role patriarchal structures prescribe. The sterile plastic world of material prosperity portrayed in Gerwig's *Barbie* acquires in *The Substance* the sterile dimension of a world reminiscent of a science lab where the human body is the literal and semiotic object of a eugenics experiment under real conditions. Elisabeth/Sue aspire to claim those elements that, according to the male gaze, shape the successful immortality of the image but are engaged in a battle they essentially cannot win. Like Poe's protagonist who dies at the story's end by his own hand, the Elisabeth/Sue inability to accept the harmonization of their identities with mutual coexistence conditions leads to a grotesque reconstruction of their identity and ultimately, to oblivion.

The instruction accompanying the serum that triggers Sue's birth is simple and clear: from the moment the new body is born, each of the two versions has seven days of continuous presence. During this time, the active body maintains the inactive one. After this period, the inactive body must be activated. This process continues endlessly and is irreversible. Essentially, the two versions of Elisabeth Sparkle must coexist harmoniously within a fixed and alternating timeframe. The imbalance of this coexistence activates a series of chain reactions leading to the deconstruction and distortion of both identities. Sue's inability to accept her outdated, aging self and intoxicated by youth and beauty's arrogance leads her to break rules reflected in Elisabeth's body's gradual distortion. Elisabeth's refusal to accept bodily decay and her bondage to the male gaze perspective

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<sup>17</sup> In Edgar Allan Poe's short story, the protagonist confronts a doppelgänger, a fictional copy of himself, with whom he constantly competes, until their deadly duel. For the full short story, see: Edgar Allan Poe, "William Wilson," in *21 Stories and The Raven*, edited and translated by Katerina Schina (Athens: Metaichmio, 2011), 308–33.

triggers a process leading to rapid aging decomposition and a race to save what can be saved of her body. Her enemy is no longer time's natural decay but the improved version she tries to preserve. Like another William Wilson, she vainly tries to surpass her new self's perfection.

The "totemization" and desacralization of the body constitute a central ideological concern in *The Substance*, a process conveyed through numerous references to cultural products of the past which, if approached from an "evolutionary/linear" perspective, may chart the transition from the postmodern ideological and aesthetic conception of contemporary *Visual Culture* to contemporary posthumanist theories. The visual representation of the body throughout the film's progression moves from the hedonistic yet clinical photographic depiction of Helmut Newton to the critical and idiosyncratic photographic gaze of Diane Arbus<sup>18</sup>. The female body as a scopophilic object but also as an object of a "theatre of paradoxes" which is "deified" and "demonized" as needed. Familiar and attractive yet paradoxical and grotesque. Optimization and distortion of the body are presented as a process intensified by the presence of the external factor represented by the serum named "Substance." Following the narrative tradition of body horror, Fargeat pushes this evolution to extremes, subjecting the bodies of the two protagonists to mutations/distortions that border on what could be defined as "human." However, this change does not arise from bodily mutation due to an experimental surgical method, as in Rose Miller/Marilyn Chambers in the film *Rabid* (1977), nor entirely from a failed scientific experiment like Seth Brundle/Jeff Goldblum in the remake of *The Fly*<sup>19</sup> (1986). In Elisabeth/Sue's case, the mutation is a technical dysfunction, not of the serum itself but of the two protagonists' inability to reconcile the intrusive serum process with the transcendental process of accepting their identity. Their survival, as with *The Walking Dead* protagonists, relies on transcending identity limitations and intertwining it with their new environmental data. The failure to accept and the conflict of the two identities lead to bodily distortion symbolically warning for the maintenance of this balance. In the film's final sequence, the two identities merge, and the new Monstro ElisaSue (a hybrid creature resulting from the union of body parts of the two women) experiences a distorted version of the illusory success and acceptance dream promised by the Media world. Like another Elephant Man—but grotesquely deformed, almost entirely devoid of anything human—this strange creature exposes itself

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<sup>18</sup> These are two different representations of the human body by two iconic photographers in the history of the evolution of the art of Photography. The bodies of Helmut Newton, photographed mainly for fashion magazines, are characterized by allure and sexuality but at the same time seem to lack the element of eroticism, as the photographer's detached gaze approaches them more as "products" and less as objects of erotic interest. On the other hand, Diane Arbus, choosing to photograph "unique" people, both in appearance and personality, highlights the elements of the "bizarre" and the "grotesque" that the human form can take. The "clinical detachment" of the gaze of these two photographers seems to be adopted also by Fargeat in the depiction of the bodies of the two protagonists in the film.

<sup>19</sup> In the film *Rabid*, the young protagonist undergoes an experimental, surgical procedure that mutates her body, which acquires a kind of "stinger" that extends from it and feeds on the blood of other bodies. In *The Fly*, the mutation of the protagonist scientist is due to a failed teleportation experiment. A fly trapped in the chamber that decomposes and reconstructs the DNA of the teleported being mutates the body of Seth Brundle/Jeff Goldblum and mixes the insect's DNA with that of the human, with disastrous results. The *Fly* by David Cronenberg is a remake of the 1958 film of the same name by Kurt Neumann. For the actual films, see: David Cronenberg, dir., *Rabid* (Canada: Cinépix Film Properties, 1977); *The Fly* (New Line Cinema, 1986); original *The Fly* directed by Kurt Neumann, 1958.

to an ecstatic crowd, achieving the transcendence of acceptance its creators failed to accomplish<sup>20</sup>. This new nature's acceptance is partly undermined by hiding its true face behind a photo of the "perfect" Elisabeth stuck to the creature's face, reminding us of the deep psychological influence the external gaze exerts on self-perception. When even this last concealment of true nature is lost, surreal catharsis follows in a symbolic bloodbath. Just as *The Walking Dead* protagonists symbolically sealed their forced coexistence with the dead by smearing themselves in their entrails, Monstro ElisaSue seals its forced coexistence with the world by drenching the raucous crowd with its blood. The use of the "grotesque" is no stranger to the pluralistic reality perception characterizing the scene, as it constitutes a structural element of the posthumanist perspective. Stefan Sorgner, studying aesthetics in posthumanist artworks, offers examples of aesthetic approaches mentioning "the aesthetics of monsters," "hybridity aesthetics," and "formlessness aesthetics," all easily identifiable in Monstro ElisaSue's representation and symbolic dimension<sup>21</sup>. The serum "Substance" represents the technological evolution in the film that transmutes the anxiety of death and the quest for eternal life into a commercial pharmaceutical product. Likewise, The Substance can be viewed as a cinematographic product embodying the posthumanist perspective in critical dialogue regarding "well-being" in an ever technically evolving world where the ethics of image, both symbolic and literal, clashes with the world enveloping it. The body as image and its depiction remains an ethical and ideological issue heavily associated with the quality of existence and its elements.

## II. Interweaving as Coexistence of Gaze and Mind

Within the context of further exploring the relationship between the image and the world, as well as the elements that define the identity of existence, the continuous expansion of the perception boundaries of the consumer-viewer or reader appears as a consequence of a continuous friction with representations that undermine established perceptions. Since the early 21st century, the multi-perspective approach to vision and representation proposed by the theoretical framework of *Posthumanism* complements or coexists with the multiple-level reading theory of *Postmodernism*. Even in relatively "conservative" narratives, in representational or ideological terms, such as fantasy, the dualistic perspective "imposed" somewhat by "pulp" magazines and largely adopted by comic books and cinema during the 20th century seems to be revised. In the early 2000s, authors such as Mike Carey and Bill Willingham, under the aegis of Vertigo, a publishing company targeting a broad readership but simultaneously encouraging a "different look" in comic book narratives, attempted and largely succeeded in releasing a "conservative" and strictly delimited narrative model from genre conventions and introducing many elements that would establish a liberated and guilt-free artistic expression responding to the ideological

<sup>20</sup> Part of the form of Monstro ElisaSue as well as the way she is exhibited to the public refers to the film *The Elephant Man* by David Lynch, which is inspired by the life of Joseph Merrick, a man whose body was characterized by severe deformities. For the actual film, see: David Lynch, dir., *The Elephant Man* (Universal Pictures, 1980).

<sup>21</sup> Stefan Sorgner, "Aesthetic Concepts of Posthumanist Works of Art," in *Philosophy of Posthumanist Art*, ed. Evi Sabanikou (Thessaloniki: Epikentro, 2024), 115–63.

and aesthetic “needs” of 21st-century readers<sup>22</sup>. The surpassing of the established perspective and the intertwining elements found in comic book series such as *Lucifer*, *Fables*, and *The Unwritten* paved the way for a posthumanist approach in similar genre narratives, as similarly happened in cinema. The cultural impact of this approach is palpable in many comic book series published in the years following.

The comic book series *Saga*, created in 2012 by Brian K. Vaughan and Fiona Staples, constitutes a characteristic example of this aesthetic and ideological transition<sup>23</sup>. Narratively balancing between *science fiction* and *fantasy*, the series impresses with revolutionary representational forms used to visualize characters across its pages. Exploiting the artistic freedom offered by placing its plot in a distant universe, the creators appear to use every possible aesthetic and representational combination for both main and secondary characters, creating a remarkably multifaceted aesthetic universe where every form of representing sentient beings can be accepted. The forms of all protagonists are characterized by elements of inter-speciesism, hybridity, transhumanism, mutation, the uncanny, the grotesque, and all those elements accompanying posthumanist representational forms found in contemporary art. While this approach cannot be deemed entirely innovative since similar representational forms appear in other popular past narratives, such as the universes of the *Star Wars* and *Star Trek* franchises, what differentiates the work of Vaughan and Staples is that the posthumanist perspective does not exhaust itself in the visual representation of characters’ forms but extends to the representation of their psyche. In *Saga*’s universe, the representation of the alien surpasses the visual impressiveness and is enriched by anthropomorphic traits and behavior pervading every species, no matter how alien or uncanny. Non-human forms are not mere figures in the background of a bar or a galactic senate meeting in a *Star Wars* film, nor the sympathetic and humanized alien or android of *Star Trek* saga. The dualistic perspective placing the human form at the center of these narratives and dominating over every different or incomprehensible “other” gives way to a multi-perspective view not only regarding what might touch the “human” limits but also what readers might accept as “protagonists” in a long-running series. The posthumanist perspective of the series imposes the presence of the non-human form at the center of events and in absolute harmonious coexistence with the anthropomorphic form. Characters’ actions are ideologically detached from their representation and judged solely by their motives and deeds. Monstrous beings act with entirely pure motives, hybrid mechanomorphic entities are depicted with distinctly “human” behavior, seemingly innocent alien beings are characterized by rage and aggression...

Readers are impressed by the imaginative variety of representations, but the plot’s evolution focuses on a comprehensive portrayal of characters’ personalities, to the extent that the acceptance in this universe of every form is based not on appearance but on action. This expansion in form representation on *Saga* pages appears to reflect a broader ideological concern found in contemporary cultural products, especially in their attempt to connect the concept of “well-being” with acceptance of diversity.

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<sup>22</sup> For the contribution of Vertigo to the evolution of representations of the Fantastic, as well as the historical context and the way transhumanist concerns are introduced in fantasy comics, see: Panagiotis Kritikos, “Chapter 2: Myths, Beliefs and Postmodern Visions,” and “Chapter 3: Beyond Conventions—Imaginary Reality,” in *Comic Worlds of the Fantastic: Visualization and Ideological Representations in Fantasy Comics* (University of the Aegean, 2017), 111–93 and 176–271.

<sup>23</sup> Image Comics, series published since 2012, 72 issues to date, ongoing.

The recent cinematic revival of the *Planet of the Apes* franchise also places this acceptance process as a core narrative point<sup>24</sup>. In the original 1968 film (directed by Franklin J. Schaffner), the dualistic perspective characterizing much of science fiction literature until then (especially in cinema) dominates. Despite interesting suggestions about 20th-century human nature and its role in the depicted dystopia, it remains a narrative with clearly distinct roles between “good” humans and “bad” apes, aligning with familiar oppositional binaries prevalent in mainstream cinema of the time. This approach is reflected to a large extent in Tim Burton’s 2001 remake, too. However, the new film series reviving the franchise extensively portrays the “creation of the planet of the apes” and reflects a new trend towards a broader view on elements composing the creation of fantasy worlds and protagonists’ motives, increasingly stabilized in 21st-century mass cultural productions, shifting aesthetic and ideological elements in a posthumanist direction.

The first element revised is the asymmetrical representation between humans and apes. By placing Caesar, the ape as protagonist of the first three films—functioning as a biography of both himself and the emerging new world—the contemporary viewer gains a clear picture of both the destruction of the old world and the causes leading to it. A key aspect is the partial “humanization” of the character and the partial stripping of messianic traits previously attributed to him. In the 1968 film, Caesar is referred to as the “Creator” of the ape world, his memory honored and inspiring respect, without fully clarifying his role. Essentially, it reflects the traditional Creator-God concept where the acceptance of the monumental image suffices to justify the actors’ actions without further depth or justification. In the new film trilogy, Caesar is “humanized,” losing his messianic features and presented as a complete personality with positive traits and contradictions. He has fears, passions, desires, makes mistakes, learns from them, and smoothly evolves into a leadership figure not seeking to change the status quo but to harmonize the nature of two different species, personally and communally. His intelligence’s “humanization” is justified by his brain mutation caused by an experimental drug tested on him and his human upbringing, as he had been adopted by a family of humans after his mother died in a research lab. Essentially, he is a meta-ape, a product of a laboratory experiment, nurtured in symbiotic relations with humans. This results in the essential abolition of the division between “human” and “non-human” and the posthumanist inquiry into what defines being “human.” Caesar externally retains all animal traits, but his upbringing and abilities match those of a being raised as human. His relationship with humans he considers family corresponds to that of an ordinary child. His first internal conflict is managing the coexistence of his two natures. Caesar is both ape and human, with neither state undermining the other. He has the form of an animal, the ability to act and think

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<sup>24</sup> *Planet of the Apes* is a science fiction franchise present in various narrative media. It started from the novel *La Planète des Singes* by the French author Pierre Boulle in 1963. In 1968, the film adaptation by Franklin J. Schaffner achieved the necessary commercial success to lead to four more sequels. In 2001, Tim Burton created a remake of the original film, and in 2011, the franchise was reintroduced to the film audience with a series of movies depicting the events that led to the creation of the “planet of the apes.” For the original novel see: Pierre Boulle, *La Planète des Singes* (Paris: Éditions Julliard, 1963); For the actual films see: Franklin J. Schaffner, dir., *Planet of the Apes* (20th Century Fox, 1968); Tim Burton, dir., *Planet of the Apes* (20th Century Fox, 2001); Wyatt, Rupert, dir., *Rise of the Planet of the Apes* (20th Century Fox, 2011); Reeves, Matt, dir., *Dawn of the Planet of the Apes* (20th Century Fox, 2014); Reeves, Matt, dir., *War for the Planet of the Apes* (20th Century Fox, 2017); Ball, Wes, dir., *Kingdom of the Planet of the Apes*. (20th Century Fox, 2024).

like a human, and the critical capacity to alternate between the abilities his hybrid identity affords depending on the situation. He tries to pass this ability to other apes in the community. He does not encourage them to reject their primal nature and imitate humans but to perceive their hybridity as a new state of existence and well-being as a fusion of diverse elements.

The intertwining of the two different natures created new conditions for the coexistence of humans and apes, and when the former were on the brink of extinction due to a virus infecting most of humanity, this coexistence equated with survival and well-being. The new world that emerged was not necessarily characterized by dystopian elements. The “destruction” was attributed, in the film, to human error that released the infectious virus, and the community of intelligent apes that arose did not aspire to replace the human species. On a primary level, the events seem to follow a course consistent with the process of “natural selection.” A “natural disaster” (could the symbiotic relationship of modern humans with technology and their inability to control its potential negative consequences justify this characterization?) gave an opportunity for a new species to emerge and claim its place at the top of the food chain. As contact and conflict between the two communities are avoided, each follows its own course in the struggle for survival. However, isolation is impossible since the two communities effectively share the same space. The decisive presence and ideological approach of Caesar regarding the rules of this coexistence ensure the well-being of both communities, based on acceptance of the different nature of the two beings as well as the highlighting of their commonalities. As long as this symbiotic relationship operates under acceptance rules, the balance is maintained. The dystopia in *Planet of the Apes* essentially emerges when the two species reject coexistence. The rejection comes from both humans and apes. Surpassing the binary good/evil opposition to characterize either species, the ensuing war reflects a series of events triggered by both sides. The transformation of Earth into the “planet of the apes” and the emergence of the “kingdom of the apes” result from the choice of some members from both communities to follow the path of conflict rather than coexistence.

This element of intertwining, which seems to dominate as an ideological approach in the new *Planet of the Apes* version, combined with elements of hybridity, multi-perspective viewing and representation, exploration of identity and the body — key ideological concerns of *Posthumanism* — compose a motif found in many cultural products of the early 21st century, all seemingly connected with a broader inquiry about the notion of “well-being” in the new era. Beyond the dozens of alternative realities that have been recorded over decades in the multiverses of superheroes in the American comic scene, the posthumanist perspective stands at the center of many contemporary narratives. Unlike the way speculative narratives in cinema and comics absorbed the ideological concerns of *Postmodernism*, the posthumanist shift in perspective differentiates the structure of these narratives. A primary goal does not seem to be the conscious creation of multiple levels of reading that would unfold through the tools of semiotics and semiology but the open presentation of posthumanist inquiries about the body and the world it hosts. Narrative arts belonging to *Visual Culture* are in continuous communication of presenting opposing views, reflections, and aesthetic exchanges. Acknowledging the interaction of artistic expression and understanding narratives in this context as communicating vessels, many elements of posthumanist dialectics analyzed earlier appear on the pages of modern comic books. Beyond Eastern comic scenes, where

posthumanist issues also pervade, perhaps earlier than in Western cultural products, many contemporary English-language comics compose their narratives openly embracing posthumanist dialectics. Indicatively, in the mini-series *Tokyo Ghost*, Rick Remender and Sean Murphy openly explore the relationship between technology and the human body, examining the hybrid dimension perception can take when it forms a symbiotic relationship with technology<sup>25</sup>. The series presents a world where the individual's existence is inseparably linked to social networks and pharmaceutical multinational products. The world acquires characteristics of a "spectacle arena," where individualized consumption of information disconnects the individual from the whole. Connected to the internet 24/7 and genetically modified by substances and technological implants, the citizens form the ultimate consumer of multinational products, each creating their own personal microcosm based on an enormous menu of standardized and controlled media pleasures generously offered. The society of spectacle becomes the ultimate mechanism controlling consciousness and perception; the dependency relationship between consumer and product acquires symbiotic traits, and technological addiction renders independent expression extremely difficult. In this context, the literal realization of "digital well-being" takes dystopian characteristics. The fact that Japan (!), where the two series protagonists take refuge, is presented as the only "tech-free" remaining part of the planet, where an electromagnetic pulse imposes a technology-free world and traditional way of life — besides functioning as an ironic comment from the creators — brings in sharp contrast the possible reality of the "tech-dependent" human with the question of which way of life the modern city dweller must choose, what relationship they must have with technology and, most importantly, what kind of world they ultimately desire to live in. "Digital well-being" in the capitalist reality of the modern world appears as a panacea product for solving social and personal issues, with a high price to pay. A potential technological and digital consciousness humanity could develop as a counterbalance to managing its difficulties and as a new evolutionary stage of human nature most likely would lead to new nightmarish paths. At least, this is how the creators of *Come Into Me* approach this potential technological transition.<sup>26</sup> In the comic book limited series by Zac Thompson, Lonnie Nadler and Piotr Kowalski, the issue of the literal penetration of technology into the very consciousness of the consumer is examined. In attempting to exploit the audience's addiction to social network technology, scientist Sebastian Quinn creates a technological product allowing the consumer to share consciousness with another person. Exploring the limits of the scopophilic reality created by social networks, the series creators use the ideological concerns raised by body horror literature in exploring the body-technology relationship, shifting the field of action to the conscious level. The consumer not only relinquishes facets of their reality to the public but consents to a total spiritual coexistence (even if temporary) with another individual, where every privacy element vanishes. The representation forms used openly refer to David Cronenberg's horror aesthetic, essentially confirming the nightmarish dimension of the entire endeavor. The recurring nightmarish pattern of transhumanist dystopia seems to be a key core in approaching digital well-being in 21st-century pop cultural products, with the element of body horror obsessively returning to the discourse. Whether this stems from contemporary creators' insecurity in accepting a possible

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<sup>25</sup> Rick Remender and Sean Murphy, *Tokyo Ghost* (Image Comics, 2015), 10 issues.

<sup>26</sup> Zack Thompson, Lonnie Nadler, and Piotr Kowalski, *Come Into Me* (Black Mask Studios, 2018).

transhumanist evolution of humanity or if they simply believe humanity is not ready for the transition to a subsequent “evolutionary” stage remains to be seen. In any case, the quest for well-being via technological advancement and its linking to commercial products under the present capitalist and hyper-consumerist framework seems portrayed more as a stumbling block to the real perception of well-being and less as a means of its substantial realization. As aptly commented in the comic book limited series *Everything* by Christopher Cantwel and Ian Culbard, clients of the eponymous department store — where one can find anything they wish — in their attempt to connect personal fulfillment with a model of commercial management where they have been trained to attribute idealized characteristics, become trapped in a consumerist utopia akin to the plastic world of the cinematic *Barbie*<sup>27</sup>. The illusion of this individual fulfillment is reinforced by the surreal elements and eerie atmosphere of the narrative (this time with references to David Lynch’s eerie and surreal film aesthetics) contributing to dismantling the illusion and highlighting the individual’s isolation from essential elements giving true meaning to their existence. The answer to the question “what defines a happy existence” detaches from the illusory creation of consumerist and technological paradises and is transferred to the ontological awakening and development level. The interweaving of external factors shaping the individual’s perception of all that they define as important combined with their transition to a higher level of perception and clarity regarding their existence seems to constitute the posthumanist proposal for well-being formation, at least as reflected in pop culture of the first quarter of the 21st century. The incorporation of academic reflection in mass cultural products helps the gradual and smooth familiarization of audiences with posthumanist concerns and representations and upgrades their perception. The commercial dimension of these products does not weaken the structural elements of the issues raised. On the contrary, accessibility created, combined with recurring motifs, facilitate this perceptual transition of the reader-viewer and contribute to the multi-perspective vision required.

Everything is ultimately determined by the gaze of the observer...

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<sup>27</sup> Christopher Cantwel and Ian Culbard, *Everything* (Dark Horse, 2019), 10 issues (Issues #1-5 released in a monthly comic book form. Issues #6-10 transitioned from monthly single issues to collected volume due to distribution problems created by 2020 pandemic).

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# STELARC: FOR A “QUASI-PRESENT” ASTRONAUT

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Anna Hatziyiannaki\*

## **Abstract**

*As humanity considers Space migration for survival, numerous challenges—ranging from the biological threats of radiation and microgravity to ethical concerns about extraterrestrial ecosystems—complicate our long-term presence beyond Earth. Telepresence and tele interaction offer potential solutions. They allow sensorial exploration and remote operations without direct human presence.*

*Stelarc, a pioneering performance artist, explores these themes through his Alternative Anatomical Architectures, investigating the fusion of human and machine to overcome biological limitations. His work envisions the body as obsolete, requiring augmentation via prosthetics, robotics, and biotechnology. Projects such as “Ear on Arm”, “Exoskeleton”, and “Movatar” illustrate his concept of a posthuman entity designed to thrive in extreme environments, including outer Space.*

*This paper examines his radical proposals, such as a “hollow, hardened, and dehydrated” body, and telepresence-based avatars operating in Space. Drawing from the “Fractal Flesh” and “Split Body” projects, Stelarc envisions a future where human cognition and agency extend beyond physical constraints. Through such telepresence systems, he demonstrates how human perception and action can blend physical and remote existence, effectively creating virtual actual interfaces.*

*His work challenges conventional definitions of humanity and raises critical questions about the role of telepresence in redefining life beyond Earth<sup>1</sup>.*

## **Keywords**

*Stelarc; Posthumanism; Telepresence; Human-machine interface; Avatar; Mixed Reality; Space exploration; Pan-planetary physiology; alternative anatomical architectures; Prosthetics; Post-biological strategies.*

## **I. Beyond Rovers**

Although migration beyond Earth is often considered a safeguard for the survival of our species, several challenges make long-term presence in Space difficult, if not impossible (ESA n.d.). In addition to the harmful—and potentially fatal—effects of space conditions

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<sup>1</sup> In this paper, the term ‘Space’ is capitalized when it refers to outer Space, just as ‘Earth,’ ‘Moon,’ ‘Mars,’ etc., are capitalized.

on the human body, ethical concerns arise regarding the impact of human intervention on extraterrestrial ecosystems (Tavares et al 2020).

Bodily sensor-based telepresence and tele interaction, facilitated by communication satellites, offer a promising approach for Space exploration and migration, enabling remote extraterrestrial operations without the need for direct human presence.

Telepresence and telepresence-based avatars, operating in real time and anchored to the human body on Earth, as exemplified in Stelarc's projects, could extend human sensation, perception, and action into extraterrestrial environments. Rather than functioning merely as "tools," they constitute an extension of human presence and agency, integrating the physical body, sensory systems, and technological interfaces to produce a high-fidelity "virtual actual" experience. While rovers follow pre-programmed instructions, Stelarc's approach allows humans to engage with and respond to distant environments directly, effectively integrating physical and remote presence.

The performances of Stelarc, particularly his series *Alternate Anatomical Architectures*, (Stelarc 2011a) are relevant to a range of tasks and sensory experiments related to the concept of the "quasi-present" astronaut.

## II. About Stelarc

Stelarc, born Stelios Arcadiou, is a widely known and groundbreaking performance artist, and recipient of the 2010 *Ars Electronica Golden Nica*. His projects employ virtual reality, robotics, medical instruments, prosthetics, the Internet, and biotechnology.

Less well known is his fascination with the writings of Schopenhauer, Spinoza, Nietzsche, Heidegger, Wittgenstein, Derrida, and, more recently, with Actor-Network Theory and Object-Oriented Ontology.

He has been particularly intrigued by ideas such as McLuhan's notion of "technology as the external organs of the body," Baudrillard's world dominated by simulations, and Virilio's belief that "with every new technology there's a new kind of accident." Building on McLuhan's view that technology functions as the body's external organs, Stelarc notes:

"The body has always been a kind of prosthetic body coupled to its technology. And technology has proliferated in the human horizon. But with its increasing microminiaturization and with more and more biocompatible materials, technology cannot only be attached to the body but can also be implanted." (Smith 2005, 232).

William Gibson, in the preface to "Stelarc, the Monograph," aptly describes Stelarc's work as following: "I associate it with da Vinci's ornithopter, eccentric, nineteenth-century velocipedes, and Victorian schemes for electroplating the dead—though not retrograde in any way. Instead, it seems timeless: as though each performance constitutes a moment equivalent to those collected in Humphrey Jennings's *Pandaemonium: The Cowing of the Machine in the Industrial Revolution*—moments of the purest technologically induced cognitive disjunction." (Dayal 2012).

### III. The “Obsolete” Body in Space

Stelarc’s work has been extensively studied for nearly five decades. This paper focuses on his exploration of the human body beyond Earth, as his art raises critical questions: How could the “obsolete” body survive beyond Earth?

Indeed, as he argues, the harsh environment of Space, with its radiation and microgravity, necessitates a reimagining of the body, in order to overcome these challenges, as the problem of Space travel has shifted from technological limitations, to limitations of our fragile biology.

He proposes implanted components (that) energize and amplify our capabilities, exoskeletons and robotic structures that can further enhance the body, while the use of micro-robots to colonize the surface and internal tracts of the human body, will assist with monitoring and protection. One can recognize in these quotes, multiple hybridizations in his projects like “Ear on arm”, “Exoskeleton”, “Movatar”, and many more. As he says, “the body is biologically ill-equipped, not only in terms of its sheer survival, but also in its inability to adequately perceive and perform in the immensity of outer-space. Rather than developing specialist bodies for specific sites, we should consider a pan-planetary physiology that is durable, flexible and capable of functioning in varying atmospheric conditions, gravitational pressures and electro-magnetic fields.” (Stelarc 1990).

It should be noted that his suspension performances, have a concept of gravity’s exploration as a physical phenomenon. Brian Massumi aptly comments: «Stelarc repeatedly evokes the pattern of ripples and hills that form on the hook-stretched skin, calling it a “gravitational landscape.” ... The body-transducer transforms gravity from an invisible condition ... into a visibility.» (Massumi 2002).

### IV. The Posthuman Concept

The significant shift in Western Europe regarding the notion of care of the self seems to have taken place at the sixteenth century, when a new concept is emerged: That of care of an anthropocentric world.

Stelarc’s work pushes the boundaries of the body, prompting a reevaluation towards the Posthuman concept. His art explores a radical solution: to redesign ourselves through human-machine interfaces in order to overcome our limitations. For him, “it’s not an issue of utilitarian improvement of the body, but rather exploring alternate anatomical architectures.” (Ford 2025).

As innovations in technology erase the boundaries between human and machine, and our bodies merge with prosthetics, code, and other tools, we are ushering in a novel form of existence in which the traditional definition of “human” is called into question. Stelarc’s art lies at the core of Posthumanism because it challenges the fixed boundaries of the human body, treating it as a mutable platform that can be technologically extended, reconfigured, and hybridized, thereby questioning conventional notions of identity, embodiment, and human limits.

While thinkers like Francis Fukuyama raise concerns about the ethical implications and potential loss of human dignity, (Fukuyama 2002), others, like Donna Haraway,

embrace the concept of the cyborg as a new form of being: She argues that “we are cyborgs. The cyborg is our ontology.” (Haraway 1985, 149-181).

Besides, for Katherine Hayles, “the posthuman does not really mean the end of humanity. It signals instead the end of a certain conception of the human, a conception that may have applied, at best, to that fraction of humanity who had the wealth, power, and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice.” (Hayles 1999, 286).

Stelarc not only theorizes the concept of the posthuman body but also enacts it, using his own body as a site of experimentation. In practice, he merges human and machine through prosthetics, robotics, and telematics, thereby blurring the boundaries not only between body and technology but also between physical presence and extended, technologically mediated spaces.

## V. Post-biological Strategies

It is self-evident that the growing symbiosis between body and technology heralds a stage in which Darwinian evolution no longer governs the trajectory of the human body. Stelarc, envisions “postbiological strategies,” approaching the concept of the body as a structure for redesign. For Space travel, he proposes a “Hollow, Hardened and Dehydrated” body, because a hollow body, would be a better host for technology. In his 1991 article for Leonardo journal, he mentions:

“If we could engineer a synthetic skin that could absorb oxygen directly through its pores and could efficiently convert light into chemical nutrients, we could radically redesign the body, eliminating many of its redundant systems and malfunctioning organs—minimizing toxin build-up in its chemistry.” (Stelarc 1991).

Well, although this concept may seem extreme, breathing through the skin is a natural phenomenon: cutaneous gas exchange occurs in many amphibians (Burggren & Feder 1986). Furthermore, advances in artificial skin are ongoing, with materials being developed that exhibit varying degrees of breathability. Notably, researchers at Cornell University achieved a breakthrough in 2022 with a novel biohybrid biomaterial, offering promise for the creation of artificial skin capable of mimicking the properties of natural human tissues. (Darkes Burkey et al. 2022).

A porous body and a semi living skin, bring to mind two of Stelarc’s projects, the “Stomach Sculpture” (1993) with the insertion of a small sculpture in his stomach via esophagus, (Stelarc 2009) and the “1/4 scale ear” (2003) (Stelarc. n.d.a) with bioculturing human cells, respectively.

## VI. Immortality

Let us explore now another intriguing vision for the human body in Space, as put forth by Stelarc: “In the extended space-time of extraterrestrial environments, the body must become immortal to adapt.” On the notion of immortality, as Stelarc explains in a footnote in the same text, it is used neither in a spiritual nor in a utopian sense. Clearly, the body’s life span must be exponentially extended for it to function adequately in the expanded space and extended time of the extraterrestrial environment (Stelarc 1991).

“Immortality” - the “holy grail” of Transhumanism - has been explored as a concept by several key figures in the field. Among them, Hans Moravec argues for the possibility of uploading human consciousness into computers, achieving a form of digital immortality (Moravec, 1988), while Ray Kurzweil, fueled by technological advancements believes that “we’ll achieve radical life extension, potentially overcoming aging altogether.” (Kurzweil 2005).

Stelarc, declares “death is an outmoded evolutionary strategy”. He explains that the fertilization outside the womb and the possibility of nurturing the fetus in an artificial support system, means “no biological birth.” On the other hand, if the malfunctioning body can be redesigned with replaceable parts, “technically there would be no reason for death, given the accessibility of replacements.” It should be emphasized, however, that the artist clarifies, that “the notion of immortality is used in neither a spiritual nor utopian sense.” (Stelarc 1991, 591-595).

Stelarc’s vision of a “hollow” and “immortal” posthuman body, as illuminated by a statement from his 2009 lecture, offers a new starting point for the creation of a Posthumanist entity for Space exploration.

Let us stop for a moment at a quote by Stelarc, during that lecture:

“the realm of the post-human may no longer reside in the realm of bodies and machines but rather in the realm of autonomous, intelligent, operational entities sustained on the internet and in electronic media. Bodies and machines are ponderous, they perform with friction and weight in gravity. Avatars perform smoothly and at the speed of light. Images are eternal. Avatars have no organs.” (Stelarc 2009).

Stelarc’s notion of the avatar differs fundamentally from popular science-fiction portrayals. Rather than imagining alternative bodies in remote biotechnological ecosystems, Stelarc conceives the avatar as an extension of the human through networked, machinic and telematic systems. His framework centers on human-machine augmentation, aiming to expand perception, action and presence beyond the biological body. In this sense, his work resonates with key currents of Posthumanist thought, which envision technologically mediated forms of embodiment capable of transcending inherited evolutionary limits.

## **VII. A Wired and Split Posthuman Entity**

Imagine a human body on Earth augmented with technology and linked to an AI-powered avatar stationed on a distant planet. This human-avatar system would form a single entity with a two-way connection for reciprocal control. This concept parallels Stelarc’s “Actuate/Animate: Event for Avatar” performance (Stelarc 2011b) where his gestures controlled an avatar in a virtual environment. The key difference is that the avatar would now reside in an actual extraterrestrial location. The connection between the body and the avatar would be established through a network of high-bandwidth satellites, designed to handle the vast distances and time delays inherent in extraterrestrial communication. The mutual remote control between body and avatar could be based on Stelarc’s projects “Fractal Flesh” (Stelarc 2025a) and “Motion Prosthesis” (Stelarc 2025b) both of which utilized computer models for control.

The body on Earth would have a split physiology, operating in a “voltage in-voltage out” mode inspired by Stelarc’s “Split Body: Voltage In/Voltage Out”, 1995 project (NetworkMuseum– Fractal Flesh 2025).

The left half of the body on Earth, would become “involuntary,” controlled by the avatar’s program in Space. The right half would retain control through a wired “Third Hand” or “Virtual Arm” actuated by data gloves. Stelarc himself has said, he has been intrigued not only with human-machine interactions but also with virtual-actual interfaces, to investigate the interface between the actual and the virtual world, with the body acting seamlessly in mixed realities, and with an intelligent avatar that performs in the real world, with optical density and tactile experience (Hatziyiannaki 2017).

Positioning the body as a locus of radical experimental inquiry (ArtWiki 2015), Stelarc investigates telepresence and the dynamics of the involuntary body in his seminal work *Split Body*, challenging conventional boundaries of agency, control, and human-machine integration.

His “Extended Arm” performance exemplifies this concept, with his left arm controlled by a program, while his right operates a mechanical extension. This split and amplified body would act as a data transceiver, receiving and sending information between the human and the extraterrestrial avatar, creating an interspatial experience of Mixed Realities far exceeding traditional virtual reality. In these split body performances, the body becomes both a possessed and a performing one. On the left side is “voltage in”, on the right side is “voltage out”. “Voltage in” to control the body, “voltage out” to activate the mechanical hand (Stelarc 2024).

## VIII. When Electronic Space Becomes an Action Medium

By integrating a video headset, sensors, and an “ear on arm” implant, the body-avatar entity, facilitates optical, sensory, and acoustic interaction. This wired body-intelligent avatar system, would become then a Posthuman entity. To use a Stelarc’s quote:”The body has become a contemporary chimera of meat, metal and code. Its metabolism, musculature, sensory and cognitive capabilities are hard-wired to its instruments, machines and computational systems. Bodies become end-effectors for other bodies in other places and for machines elsewhere, generating interactive loops and recursive choreographies of interaction. Fractal Flesh proliferates.” (Stelarc n.d.b)

This posthuman entity could be animated by an improvised choreography, similar to Stelarc’s “Parasite” (Parasite 1997) exploring alternate anatomical architectures, interrogating issues of embodiment, agency, identity and the Post-Human.

Furthermore, the Earth-based component of this Posthuman entity, could achieve a state of immersive telepresence on an extraterrestrial location. To achieve an audiovisual telepresence, the wired body would be equipped with a video headset for vision, and an implant based on “Ear on arm” for hearing. This implant would function as a remote listening device, transmitting sounds to earphones worn by the body-human operator. As he precises about the “Ear on arm” project, “The final procedure will re-implant a miniature microphone to enable a wireless connection to the Internet, making the ear a remote listening device for people in other places. (RE WIRED / RE MIXED 2024)

Essentially, this Posthuman entity, would allow the operator to see, hear and feel, what the avatar sees, hears and touches in Space, through the use of embodied sensors.

At the same time, the body also receives and circulates data to Space, from the earthly environment. This audiovisual and sensory immersive experience, would be facilitated by teleoperation, drawing inspiration from Stelarc’s “Cyberhuman: Involuntary Body / Third Hand (Split Body: Voltage-in / Voltage-out) (Stelarc 2011c)

Moreover, Stelarc envisions teleoperation systems as a way to project human presence and perform actions beyond Earth. He argues: “With teleoperation systems, it is possible to project human presence and perform physical actions in remote and extraterrestrial locations. A single operator could direct a colony of robots in different locations simultaneously, or scattered human experts might collectively control a particular surrogate robot.” He points out as well, that a single operator could control multiple robots in different locations, or a team of experts could work together to guide one robot. He claims that “teleoperation systems would have to be more than hand-eye mechanisms. They would have to create kinesthetic feel, providing the sensation of orientation, motion and body tension. Robots would have to be semi-autonomous, capable of ‘intelligent disobedience’. With teleautomation, forward simulation-with time and position clutches-assists in overcoming the problem of real-time delays, allowing prediction to improve performance. The experience of Telepresence becomes the high-fidelity illusion of Tele-Existence. Electronic space becomes a medium of action rather than information” (High-Fidelity Illusion) (Stelarc n.d.c)

As humanity considers Space migration for survival, numerous challenges—complicate our long-term presence beyond Earth. The “obsolete body” needs to be re-engineered in order to rise to the requirements of the interplanetary species humanity seeks to evolve into. Stelarc’s work may find applications for Telepresence, teleoperations and sensorial exploration. As himself cites about “Pan-Planetary Physiology”, “Unplugged from this planet (...) the body is biologically ill-equipped, not only in terms of its sheer survival, but also in its inability to adequately perceive and perform in the immensity of outer-Space. Rather than developing specialist bodies for specific sites, we should consider a pan-planetary physiology that is durable, flexible and capable of functioning in varying atmospheric conditions, gravitational pressures and electromagnetic fields.” (Stelarc 1990)

We should not forget that Humanity faces the vast unknown of space, yet our bodies remain anchored to Earth. Stelarc reminds us that the human body is not immutable—it can be extended, re-engineered, and liberated. Through telepresence, robotic augmentation, and radical experimentation, he envisions bodies capable of thriving beyond our planet, resilient to extremes of gravity, atmosphere, and environment. The future, he shows, is both a challenge and an invitation: a realm where imagination, technology, and the human spirit converge to redefine what it means to exist in the cosmos

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# POSTHUMAN WELL-BEING IN POPULAR CULTURE: A SEMIOTIC READING OF THE AVATAR FILM SERIES

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## **Abstract**

*This chapter explores how Avatar: The Way of Water (2022) interprets well-being from a Posthuman and semiotic perspective. While Posthuman philosophy has thoroughly studied embodiment, ecology, and technology, the concept of well-being has gotten little attention in this discussion. Drawing on semiotic frameworks such as Yuri Lotman's semiosphere and Roman Jakobson's transmutation, the study uses qualitative semiotic analysis to look into how the film translates philosophical conceptions of interdependence and vitality into cinematic form. Avatar's visual and emotional language depicts well-being as a distributed process that covers species, bodies, and media, rather than an individual trait. The chapter concludes that popular culture serves as a platform for philosophical and ethical problems about life, care, and sustainability, establishing Avatar as a critical cultural text for understanding well-being in the Posthuman period.*

## **Keywords**

*Posthuman Well-being; Semiotics; Posthumanism; Avatar; Popular Culture; Sustainability; Transhumanism; Metahumanism.*

## **I. Introduction**

The concept of well-being has historically been articulated within humanist frameworks that value the individual subject, rational autonomy, and anthropocentric ethics. In the Posthuman period, however, such frameworks are increasingly challenged by philosophical currents that redefine existence beyond the human, emphasizing relationality, technological mediation, and multispecies entanglement (Ferrando 2019; Nayar 2014). Critical Posthumanism, Transhumanism, and Metahumanism are distinct yet overlapping movements that address these transformations in different spectrums. Nonetheless, the concept of well-being has rarely been compared between them. This chapter fills that gap by investigating how well-being is conceived within those

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movements and how those imaginaries are translated and produced in current popular culture.

Popular culture, particularly cinema, has become a critical site where these philosophical shifts are not only represented but also experienced and produced. While scholarly discussions in Critical Posthumanism, Transhumanism, and Metahumanism often employ complex theoretical language, media translates these discourses into emotionally resonant narratives that make Posthuman ideas accessible to broader audiences. Science fiction cinema, in this case, serves as a cultural interface through which the changing meanings of life, technology, and environmental care are visible and emotionally experienced (Herbrechter 2013; Elleström 2020). A powerful example is James Cameron's *Avatar: The Way of Water* (2022), which visualizes issues of interdependence, embodiment, and technology mediation through its wide ecological world-building and hybrid aesthetics. This study views the movie as a semiotic environment, where conflicting Posthuman ideas of flourishing are negotiated and reformulated for general audiences, rather than only as entertainment.

In this study, Posthuman well-being refers to forms of living and prospering that emphasize coexistence and relational balance among human, nonhuman, and technology agents (Dedeoğlu and Zampaki 2023). A semiotic reading that pays attention to transmutation across modes (Jakobson 1959; Elleström 2020) and the cultural ecology of signs (Lotman 2005) enables us to trace how such philosophical concepts are expressed in cinematic codes (picture, gesture, sound) and emotive register. The research thus places *Avatar* within a broader semiosphere of discourse: where academic ideas, market logics, and audience affect intersect to form specific ideals of life, care, and sustainability (Dedeoğlu and Zampaki 2023; Sampanikou 2023).

This chapter asks two interrelated questions: (1) How is well-being conceptualized within and across major Posthuman paradigms? (2) How are those conceptualizations translated semiotically in *Avatar: The Way of Water*? The paper proceeds as follows: first the theoretical framework establishes semiotic and Posthuman foundations; next the methodology explains the process of multimodal semiotic analysis; then after a narrative overview, a three-part close reading considers ecological, technological, and embodied dimensions of well-being in the film; finally, the discussion and conclusion frame the findings and indicate implications for Posthuman cultural theory and the relative spectrum of well-being.

## II. Theoretical Framework

This study integrates semiotic and posthuman perspectives to look at how well-being is understood and expressed in *Avatar: The Way of Water* (2022). Semiotics give analytical tools for comprehending how meanings flow across media and matter, whereas posthuman philosophy provides a conceptual framework for reconsidering life, ethics, and vitality beyond the human person. The convergence of these perspectives allows us to conceptualize well-being as a process of communication and relation that spans biological, technical, and symbolic systems rather than an interior human condition.

### *A. Semiotics Beyond the Human*

Yuri Lotman's semiosphere concept defines culture as an ecosystem of interconnected sign systems that are constantly translated and exchanged (Lotman 2005, 213). Meaning is never set in this area; it develops from the interaction and alteration of diverse codes. Roman Jakobson's (1959, 234) concept of transmutation, thus the translation of meaning from one semiotic system to another, expands on this perspective, allowing us to learn how philosophical conceptions migrate from abstract speech to cinematic form. Lars Elleström (2020, 6) adds to this concept by characterizing media as transmodal interfaces in which meaning is formed through sensory and material experiences. These frameworks work together to provide a semiotic understanding of *Avatar* as a dynamic ecosystem of signs that serve as a bridge between philosophy, technology, and affect.

### *B. Posthuman Paradigms and Well-being*

The philosophical component of this theoretical framework is derived from three interconnected strands of Posthuman philosophy. Critical Posthumanism focuses on the decentering of the human and the ethical reevaluation of life as relational and non-hierarchical (Ferrando 2019; Herbrechter 2013). Transhumanism emphasizes technological advancement and the possibility of hybrid forms of living (Sorgner, 2022). Metahumanism, as defined by Jaime Del Val (2022), values indeterminacy, embodiment, and emotional movement as defining characteristics of being. Across these perspectives, well-being might be reframed as a state of dynamic interrelation, hence, an ongoing negotiation between human and non-human forces, rather than an individual state of balance.

Recent research supports this pluralistic approach. Cielemecka and Daigle (2020) believe that well-being in Posthuman contexts must account for the "entangled ecologies of care" that connect bodies and ecosystems. Dedeoğlu and Zampaki (2023) emphasize sustainability as a major ethical horizon of Posthumanism. These ideas together lay the intellectual groundwork for interpreting vitality as systemic rather than anthropocentric.

### *C. Well-being in Semiotics, Posthumanism and Popular Culture.*

Utilizing semiotic and posthuman approaches, this study may track how conceptions of well-being, such as relational and multispecies forms of vitality are represented and mediated throughout cultural systems. Semiotics give a vocabulary for studying these translation and exchange processes, whereas posthuman philosophy provides a conceptual foundation for reconsidering what it means to live well in a world of interconnected human, nonhuman, and technological entities. Within this perspective, cinema becomes a tool for making ethical and ontological concerns visible through image, sound, and affect.

## **III. Methodology**

This study uses a qualitative, interpretive methodology that blends semiotic analysis with Posthuman theoretical viewpoints to look into how well-being is portrayed and mediated

in modern popular culture. The primary goal is to follow the semiotic transformation of Posthuman philosophical ideas, particularly those concerning ecological balance, embodiment, and technological advancement, into cinematic narratives that are accessible to a global audience.

### *A. Semiotics Analysis and Intermedia Translation*

Semiotic analysis is the primary methodological approach, based on Roman Jakobson's idea of transmutation, which examines the movement of meaning across multiple modes and media (Jakobson 1959, 233–34). This method enables the investigation of how abstract Posthuman ideals regarding well-being such as co-flourishing, relationality, and vitality are expressed using filmic language, which includes picture, sound, movement, and discourse. As Lars Elleström (2020, 3) points out, transmutation includes not only verbal but also sensory and affective communication. As a result, this work examines cinematic space as a multimodal semiotic field in which ethical and ecological meanings are both generated and experienced.

Through this lens, *Avatar: The Way of Water* (2022) offers as an intermedial space for visually and narratively performing the Posthuman concept of well-being. The approach focuses on sequences that convey relational well-being, meaning between humans and nonhumans, technology and nature, individuals and groups. Such moments of contact or transformation are regarded as semiotic nodes at which several systems of meaning (ethical, ecological, and technological) intersect.

### *B. Case Selection*

*Avatar: The Way of Water* (2022) was chosen as a single case study due to its global impact, deep visual and narrative complexity, and explicit exploration of Posthuman concepts. The film is part of a larger series, with future releases that will broaden its narrative world, allowing for longitudinal analysis of changing representations of well-being. Its story focuses on the four natural elements (water, earth, fire, and air) providing fertile ground for studying ecological, embodied, and technological forms of relationality. While single-case research restricts generalizability, the goal of this study is conceptual depth rather than broadness, allowing for a deep, nuanced understanding of how Posthuman concepts of well-being are semiotically mediated in modern audiovisual culture.

### *C. The Semiosphere as Analytical Environment*

The methodological approach builds on Yuri Lotman's concept of the semiosphere to map the relational context in which these indicators function. The semiosphere is described as a continuum of overlapping semiotic systems (Lotman 2005, 206) and presents a theoretical paradigm for understanding the cultural ecology of Posthuman well-being. Within this perspective, *Avatar* is viewed not simply as a film, but also as a component of a larger network of discourses (e.g. philosophical, environmental, and technological) that co-create meaning.

This approach places the film's narrative and aesthetic choices within a larger cultural semiosphere in which academic Posthuman notions interact with popular conceptions

of health, sustainability, and empathy. The analysis traces how ethical and ecological forms of well-being are conveyed through cinematic strategies emphasizing connection, care, and environmental balance, drawing on Braidotti's (2019) notion of affirmative ethics, as well as critical Posthuman insights from Sampanikou (2023) and Ferrando (2019).

#### *D. Analytical Process*

The analysis has three stages:

1. **Conceptual Mapping** entails identifying essential Posthuman themes of well-being based on the theoretical framework, such as ecological (Critical Posthumanism), technological (Transhumanism), and embodied (Metahumanism).
2. **Semiotic Deconstruction** involves reviewing the film's narrative, images, and conversation to identify moments that visually or symbolically convey certain types of well-being, such as neurological symbiosis (T'saheylu), multispecies collaboration, or hybrid embodiment.
3. **Interpretive Synthesis** means locating these filmic patterns within Lotman's semiosphere to demonstrate how well-being operates as a relational and transformative process that integrates intellectual discourse with popular perception.

Throughout the process, the study strikes a dialogue-based balance between theory and cultural representation. Its goal is not to verify a theory, but rather to learn how philosophical abstractions about well-being are converted into audiovisual storytelling. Reflexivity is acknowledged, as the interpretation is situated inside the researcher's Posthuman theoretical lens, recognizing the relational co-construction of meaning between observer, text, and cultural context.

### **IV. Analysis: Semiotics of Posthuman Well-being in Avatar**

James Cameron's *Avatar* films (2009; 2022) provide an ideal foundation for investigating posthuman well-being in popular culture. Pandora's cinematic universe acts as a semiosphere (Lotman 2005), where ethical, ecological, and technological meanings meet, resulting in multimodal manifestations of relational and transformative well-being. This section analyzes the representation and blending of ecological, technological, and material forms of well-being through the lens of semiotic deconstruction.

#### *A. Narrative Overview*

These films construct a visionary ecological mythology that examines humanity's technological ambitions, ethical boundaries, and relationship with non-human life.

In the original film, paraplegic marine Jake Sully replaces his deceased twin in a mission to Pandora, a lush moon rich in unobtainium, a precious mineral vital for Earth's energy survival (Wilhelm and Mathison 2009, 16). Through neural-link and cloning technologies, humans control genetically matched Na'vi "avatars" to communicate with (or exploit) the indigenous population. The Na'vi, deeply connected to their deity Eywa

and their ecosystem (Wilhelm and Mathison 2009, 25), resist human colonization. Jake's immersion in Na'vi culture leads to his transformation. Specifically, he abandons his human identity, embraces their environmental ethics, and ultimately transfers his consciousness permanently into his avatar body and lives with Neytiri, the chief's daughter (Cameron 2009).

The second film expands James Cameron's ecological mythology into an oceanic environment, redefining humanity's relationship with technology and Pandora. The story follows Jake Sully and Neytiri, the current leaders of the Omaticaya tribe, as they escape their forest homes to seek safety among the Metkayina reef people as human invaders return to Pandora in hybrid bodies created from their human counterpart DNA. The film deepens the *Avatar* universe by focusing on the marine ecosystem and the Metkayina's spiritual rituals, which revolve around symbiotic relationships with the ocean and its sentient animals, such as the tulkun. Through Jake's children, particularly Kiri, whose hybrid nature connects her to Eywa's planetary intelligence, the story addresses the contradictions between technological embodiment, ecological belonging, and survival ethics (Cameron 2022).

The human exploitation of amrita, a tulkun-derived (whale like) substance that halts aging, reinforces the narrative's critique of colonialism and speciesism. General Ardmore's claim that Pandora must become humanity's "new home" epitomizes anthropocentric dominance and technological arrogance. In contrast, the Metkayina's "way of water" articulates a philosophy of interconnectedness: "The sea gives and the sea takes. Water connects all things" (Cameron 2022). This worldview embodies posthuman and metahuman ethics, where intelligence, emotion, and vitality circulate across species and systems.

Ultimately, Cameron's *Avatar* saga reimagines well-being as a condition of relational harmony, between human, non-humans, technologies, and environments. It challenges anthropocentric superiority and envisions a posthuman ecology grounded in balance, reciprocity, and the shared continuity of life.

### *B. Embodiment and Hybrid Subjectivity*

One of the most stunning examples of posthuman well-being is the Sully family's embodied change. Jake's children, particularly Lo'ak and Kiri, experience sensory immersion in the aquatic environment, learning to move, breathe, and speak in tandem with the sea. These sequences show the posthuman concept of identity as flexible and relational, which aligns with Ferrando's (2019) definition of ontological openness. The Sully family's bodies are examples of hybrid subjectivity, combining human, Na'vi, and aquatic characteristics. Lo'ak, for example, interacts with Payakan, the tulkun, through both tactile and neural linkages, exhibiting an intra-active blending of cognition, emotion, and environment, as articulated in Barad's (2007) concept of relational entanglement.

Jake's avatar form continues to reflect Transhumanist potentials: while physically improved in comparison to his human body, the avatar is more than an instrument of power; it is also a means for ethical engagement with Pandora. His recurring cognitive connections to many species, including aquatic and terrestrial wildlife, demonstrate the permeability of bodily and species barriers, a key feature of Posthuman embodiment. Scenes in which Jake synchronizes with marine life for navigation or defense emphasize

the kinaesthetic and emotive features of Posthuman well-being, where physical engagement is inextricably linked to environmental responsiveness (Del Val 2022). Furthermore, Kiri's unidentified roots and latent abilities point to emergent possibilities for hybrid consciousness, echoing Metahumanist concepts such as continuous becoming, ecological and dynamic connectivity (MFF Lesvos Assembly, 2022). The story emphasizes not only physical embodiment but also affective awareness, implying that well-being includes emotional, cognitive, and ethical components. These scenes, shot with sustained underwater cinematography and orchestrated motion, convey vitality, flow, and relational interdependence, demonstrating how embodiment facilitates understanding and care across species.

### *C. Technological and Ecological Interdependence*

In the film, technology plays two purposes: as a tool for dominance and as an agent of increased relationality. Colonel Quaritch's transgenic avatar shows the dangers of Transhumanist involvement without ethical consideration. His continuing pursuit of human goals through genetic and brain alteration raises concerns about agency, identity, and ecological responsibility, which aligns with Sorgner's (2022) cautionary assessments of ethical boundaries in technological advancement. In contrast, the Na'vi's microbiological symbiosis with their surroundings demonstrates technology as integrative rather than extractive. Neural connections to organisms like the tulkun or reef-dwelling aquatic fauna serve as technology interfaces that foster collaboration, mutual understanding, and environmental care.

The film's visual language emphasizes these distinctions. Scenes illustrating human military technology battling Pandora's natural systems use harsh, mechanical colors and tight framing, whereas sequences depicting neurological connection, underwater communion, or coordinated hunting use fluid camera movement, immersive lighting, and diegetic soundscapes. This semiotic opposition encodes ethical and ecological evaluation: technology can either be used to dominate or to facilitate relational flourishing.

The subplot involving the extraction of amrita from tulkun glands highlights moral issues related with technological exploitation. The Na'vi's opposition to this extraction exemplifies a Posthuman ethic of non-exploitation that values care, consent, and the preservation of ecological equilibrium. The narrative juxtaposition of human greed and Na'vi preservation demonstrates cinema's semiotic capacity to communicate relational and ecological principles in a multimodal form, which is consistent with the concept of the semiosphere as a network in which meanings are continuously generated, negotiated, and translated across heterogeneous codes.

### *D. Semiotics of Co-Flourishing*

The film's depiction of co-flourishing, or mutually sustaining interrelations among humans, Na'vi, and other species, is a key addition to Posthuman well-being. The Sully family's adaption to the Metkayina ecosystem demonstrates ethical, emotional, and ecological interdependence. Scenes of synchronized swimming, collaborative hunting, and ritualized greetings with the tulkuns convey a multimodal ethic of care: gesture, gaze,

and tactile involvement serve as semiotic resources for transmitting relational information, ethical principles, and ecological awareness all at once.

The visual and auditory semiotics of the ocean environment emphasise connectivity. Sound design incorporates marine animal cries, rhythmic water movement, and human and Na'vi vocalizations, resulting in an immersive ecology with ethical and affective dimensions that are inextricably linked. Similarly, cinematographic framing, such as wide shots that place characters in vast underwater landscapes, emphasizes the scope and intricacy of relational networks. The film explains how posthuman well-being acts as co-flourishing, which is an emergent attribute of interspecies, inter-environmental, and inter-technological entanglements (Ferrando 2019; Barad 2007).

The story also highlights chronological and intergenerational continuity. Kiri and the younger Sully children represent opportunities for relational and ecological ethical engagement, illustrating that posthuman well-being is a continuous process of adaptation, learning, and care. The film's extended temporal journey, which spans numerous sequels, underlines the notion that well-being is cumulative, emergent, and located within wider socio-ecological systems.

## **V. Discussion: Towards Semiotics of Co-Flourishing**

The semiotic reading of *Avatar: The Way of Water* illustrates that posthuman well-being is not limited to the human subject, nor can it be reduced to pharmacological or psychological health paradigms. In the following discussion, these findings are reinterpreted through the integrated framework of semiotics and Posthuman philosophy to clarify how the film constructs a redefined sense of well-being for the Posthuman era. The film's narrative and visual tactics transform difficult philosophical concepts into experience forms, demonstrating how vitality, care, and balance are spread throughout various systems of being. The goal is to conclude the conceptual understanding of how meaning, life, and ethics circulate across ecological, technological, and affective dimensions. By studying these interconnected sections, the discussion positions *Avatar* as a cultural text that simultaneously expresses and embodies the relational ideals that underpin Posthuman well-being.

### *A. From Human-Centered Health to Distributed Vitality*

Traditional humanist views of well-being have historically emphasized autonomy, rational control, and self-sufficiency. In contrast, the Posthuman turn contends that existence is relational and interconnected (Ferrando 2019). The analysis of *Avatar: The Way of Water* shows that combining semiotic and Posthuman views reveals a reimagined concept of well-being as circulation and interdependence. Life shows itself in Cameron's cinematic world as networks of trade through which meaning flows between bodies, technologies, and environments. This is consistent with Lotman's (2005) conception of the semiosphere as an open and self-organizing system in which every sign emerges through interaction. In this sense, well-being develops not as a condition of balance, but as the energy created by communicative activities. The film's ocean imagery, such as the currents, bioluminescent patterns, and rhythmic breathing, serve as both a metaphor and an expression of this systemic interchange.

*Avatar's* semiotic design encourages viewers to see the world as a relational field in which every aspect contributes to meaning-making. The ocean, wildlife, and characters are linked by flows of information and energy, implying that health and harmony are community achievements rather than individual possessions. Thus, the concept of well-being transcends psychology and biology and enters a semiotic ecology of signs, where interconnectedness becomes a type of vitality.

### *B. Technology and the Semiotics of Hybrid Life*

Technology in this film is framed as an active participant in relational life, rather as a neutral instrument or a threat. Neural interfaces, avatar bodies, and symbiotic relationships between Na'vi and marine life all demonstrate the semiotic translation of agency across organic and synthetic systems. The sequence in which Jake's family adapts to underwater life exemplifies avatar technologies that enhance perceptual and motor abilities: the human-Na'vi hybrids represent both natural adaptation and technology mediation. Jakobson's (1959) concept of transmutation frames these hybrid bodies as a translation of identity and agency across semiotic forms, reflecting the Posthuman principle that the distinctions between humans, animals, and technology are flexible.

These representations are consistent with Posthuman concepts of distributed agency. The Na'vi-human avatars demonstrate adaptive vitality, blurring the line between biological and synthetic, individual and collective. Technology serves as a channel for relational transformation rather than dominance, in line with theories of posthuman potential. For example, neural link sequences connecting Sullys to tulkuns or underwater plants demonstrate technological augmentation that promotes multispecies awareness and caring. In this setting, technology serves as an enabler of ethical and ecological relationality by mediating relationships that support co-flourishing and shared well-being.

Furthermore, the human characters' exploitation of avatar technology, such as Colonel Quaritch's cloned avatars and the extraction of amrita from tulkuns, highlight the ethical conflicts inherent in technological progress. These scenes serve as cautionary semiotic inversions, emphasizing how technology power, when separated from ecological mindfulness and social care, can disturb well-being and relationship balance. In contrast, the positive use of technology to establish cross-species connections reorients the observer toward a wider, Posthuman perspective of health and vitality.

### *C. Environmental Interdependence and Ecological Well-being*

Ecological well-being emerges as a prominent theme in *The Way of Water*. The Metkayina Na'vi illustrate ontological relationality, in which individual and group health are inextricably linked to ecological integrity. Jake and his children interact with coral reefs, tidal pools, and oceanic animals in scenes that emphasize interdependence: successful navigation, survival, and identity creation all require alignment with environmental rhythms. Tsahaylu, or the neural relationship with other beings, serves as a semiotic metaphor for ecological attunement. The same narrative logic applies to the ethical quandaries underlying amrita extraction, highlighting the conflict between human want and global stability.

These sequences illustrate how well-being goes beyond the human subject. The film conveys that vitality develops from sustaining networked relationships between species and ecosystems, recasting health as co-flourishing rather than human-centered resistance. The film applies theoretical Posthuman concepts of environmental interconnectedness by incorporating ecological information into narrative and emotive structure, revealing that long-term well-being is inextricably linked to care, attention, and reciprocal responsiveness.

#### *D. Environmental Interdependence and Ecological Well-being*

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#### *E. Cultural and Philosophical Mediation in Popular Media*

*Avatar* exhibits mainstream cinema's ability to adapt complicated Posthuman concepts into a relatable, immersive experience. Its global reach enables philosophical notions like interdependence, hybridity, and relational caring to spread beyond academic discourse. Cameron's multimodal design, which incorporates visual metaphors, rhythmic motion, and immersive soundscapes, serves as a pedagogical semiosphere. Viewers discover relationality and co-flourishing as real, aesthetic experiences, rather than abstract precepts.

The film's narrative also includes cultural criticism. The Na'vi represent indigenous philosophical systems that prioritize sustainable resource management, relational ethics, and cross-species knowledge. While the movie portrayal may simplify or stereotype these activities, it does introduce worldwide audiences to non-anthropocentric frameworks of well-being. The story arcs of Jake and his family reveal a constant struggle of ethical and ecological obligations, emphasizing the junction of human, nonhuman, and technological activity.

Crucially, the franchise format, which includes sequels which last multiple years and explore each of the four classical elements (earth, water, air, and fire) enables an evolving meditation on relational well-being. Each edition provides new environments, ethical quandaries, and hybrid forms of life, allowing for the investigation of dynamic,

cumulative processes of co-flourishing at temporal, geographical, and species-specific scales.

## VI. Conclusions

This chapter studied how *Avatar: The Way of Water* reimagines well-being via the lenses of semiotic and posthuman frameworks. Treating the film as a semiospheric environment allowed for an examination of how visual, aural, and bodily indicators translate philosophical concepts such as relationality, vitality, and ethical coexistence into immersive experience. Across ecological, technological, and emotional dimensions, the film depicts well-being as emergent within living networks, rather than static or human centered.

The study confirms that semiotic analysis is an effective method for understanding how philosophical ideas are communicated in popular culture. Cameron's work embodies Posthuman philosophy through multimodal cinematic methods, demonstrating interconnectedness, co-flourishing, and adaptive vitality, while also making abstract ethical and ecological ideas perceptually and emotionally accessible. Scenes of avatar embodiment, tulkun bonding, and Metkayina adaptation show how relational networks of life promote well-being across species, mediums, and settings.

This insight views well-being as an ethical process of being with others, rather than a goal of personal achievement. The Posthuman semiosphere is thus both symbolic and material: it is the realm in which signs, bodies, and systems connect in order to maintain existence. Within this continuum, co-flourishing emerges as the twenty-first century's ethical horizon, thus a manner of being founded on responsiveness, sustainability, and relational awareness.

The consequences of this work go beyond the analysis of *Avatar*. They highlight a broader cultural and philosophical need to rethink health, ethics, and sustainability as shared human realities. Semiotics provides an important framework for mapping these transitions, demonstrating how meaning and matter interact in the development of global well-being. As illustrated by *Avatar*, popular culture serves as a medium for the performance rather than representation of posthuman philosophy. Immersive experiences help viewers understand relationality, hybrid agency, and planetary care. The franchise's ongoing story promises further exploration of these ideas, emphasizing that well-being is emergent, shared, and constantly negotiated. Understanding such cinematic creations is critical for understanding how culture influences current notions of well-being in a technologically and ecologically integrated world.

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# BECOMING AN ETERNAL HERO: THE MONKEY KING'S TRAVEL THROUGH TIME TO THE POSTHUMAN ERA

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Ioannis Stathoyiannis\*

## **Abstract**

*In Chinese folk tradition, religion, and mythology, the Monkey King from Wu Cheng'en's Journey to the West functions as a timeless archetype. His semiotic resonance provides a framework that contributes to cultural and personal well-being. A rebel, an ambiguous hero who opposes the heavenly gods with free will of expression, capable of 72 transformations - amorphogenesis (meaning unlimited) but also an undefined identity of his social position. Few studies have explored how recent comics, graphic novels and animated versions of Monkey King deals with traditional Chinese cosmology and Western narratives. This paper investigates how The Monkey King employs animation aesthetics and character design to mediate wellbeing cultural identity, power, and moral transformation. It first outlines the myth's historical context, then analyzes key sequences and finally discusses the implications of its globalized visual style. Monkey King is a cultural example that can today be an inspiration in the field of interpretation of emerging characteristics of modern society, from the posthumanist point of view. Its form acts as a bridge between Eastern and Western narratives, offering new interpretations in every era.*

## **Keywords**

*Monkey King; China; Timeless; Novel; Myth; Hero; Posthumanism; Transhumanism.*

## **I. Monkeys and the Monkey King**

The question of the origin of man has always been at the center of scientific research. The Homo erectus (Standing Man) appeared in Africa two million years ago. Today it's been accepted that man's closest relatives are the two families of apes, the Great Apes (Anthropoids) and the Little Apes (Hylobatidae). Primates originated in Africa and Asia are considered intelligent resourceful animals, they have multiple emotions and the disposition to communicate. They are also irritable, funny, and mischievous. They are social animals; they live in various tropical forests and live harmoniously in groups - organized communities. A strict hierarchy distinguishes each group. Baby monkeys live with their family until they grow up. Their parents will protect and teach them until they

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are gone. This hierarchy is prevalent in China and is consistent with Confucianism, where children obey their parents and worship their ancestors. Macaques, Baboons, Gibbons, are animals that were worshiped in the East and in the West. It is worth noting that there are several theories and perceptions that ancient civilizations were more interconnected than we thought. Already, we have scientific evidence that Mesopotamia during the late third to early second millennium, functioned as a way station between India and the Mediterranean through trade, allowing the transfer of goods, raw materials, people, animals, ideas and iconography between East and West. Given their revered status in South and Southern Asia, where monkeys are not only considered sacred but also live in a unique coexistence with humans, it's fascinating to see how the legend of the Monkey King might have been influenced by these cultural threads.

Apes, especially Gibbons as well as Macaques (Monkeys), have played an important role in Chinese culture for over two thousand years. The cult of Monkeys in China created myths, stories, fictions, songs, poems and gave inspiration for the multifaceted physiognomy of the Monkey King in China. This legendary figure is a cultural motif inextricably linked to the beginnings of formation and the evolutionary course of the individual cultural cycles that probably make up the oldest and the modern geocultural environment of China.

During the sixteenth century Wu Cheng'en (吳承恩, c. 1500-1580) wrote the novel *Journey to the West* (*Xiyou ji*, 西遊記, 1592) an allegorical interpretation of the historical quest to supplement the Chinese Buddhist canon with fresh scriptures (sutras) from India by the Monk Xuanzang (玄奘, 602-664). The novel is considered one of the most popular works of Chinese vernacular fiction, as well as one of the greatest pieces of Asian literature.

The main character of the novel is the Monkey King (*Meihou wang*, 美猴王), a very important figure in the folk tradition, religion, and mythology of China. His form combines human and animal characteristics, while his nature is multifaceted and symbolic.

This legendary figure born from a magical stone-egg also named Sun Wukong<sup>1</sup>. Monkey King lives in a supernatural world, at the top of the Mountain of Flowers and Fruits, located in the Aolai country, (according to the secular geography of Indian Buddhism). If we were to place this place in the real world, the location would be Huaguo Mountain (*Huaguo shan*, 花果山; lit.: Mountain of Flowers and Fruit) in Jiangsu Province, China.

Once born he became the Monkey King and soon rebels against Heaven and is imprisoned by Buddha into a mountain of rocks for five centuries (500 years). This teaches him patience and humility. The Bodhisattva Guanyin, goddess of compassion (Buddhist philosophy), assigns Monkey King to become a disciple and protect the monk Xuanzang on his Journey to the West (India), (Fig. 1). The Monkey King initially resists but eventually agrees to accompany the monk Xuanzang along with two other disciples on this journey.

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<sup>1</sup> Wukong is the religion name of the Monkey King given by Master Puti meaning "Monkey who awakened to emptiness", signifying the attainment of enlightenment and the understanding of the concept of emptiness (Taoist - Buddhist philosophy) and understanding of the concept of emptiness. It also denotes an ascetic a priest servant, a disciple of the monk Xuanzang.



Fig. 1. Summer Palace in Beijing, Long Corridor (长廊).  
Scene from the classic novel.



Fig. 2. Still from the animated film *Havoc in Heaven* (1961, 1964)

The Monkey King is a skilled fighter, a rebel who opposes heaven, with supernatural physical strength and speed. He can transform himself using his seventy-two (72) transformations (metamorphoses and amorphogenesis), which imply endless possibilities, which imply endless possibilities, although his tail<sup>2</sup> causes constant but only temporary problems. He also has the ability to turn his hair into anything he wants, often creating clones of himself, and to change his natural size. Additionally, he knows spells (symbolic magic words) to command the wind, to divide the water and create protective circles from demons. He can also fly by himself, or with the help of a magical cloud. In addition to all this, he achieves immortality in various ways and wields a magical rod called *Ruyi Jingu Bang* (Fig. 2), a golden staff that he can change in size at will.

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<sup>2</sup> For example, when he takes a different form, he always retains this appendage.

## II. Dualism

The Monkey King's complex personality, full of contradictions embodying the duality of good and evil, or yin & yang, contributes to the well-being of life. His journey from a rebellious power figure to a disciplined, enlightened monk highlights the balance and harmony essential for well-being. Displaying an ambivalent character, he first appears as a rebellious figure who uses strength, intelligence, and adaptability to overcome his foes. During the journey, he transitions into a pious, submissive, faithful disciple of the monk. This is in part thanks to a magic golden headband (*jingu*, 金箍, *jingu*, 緊箍, lit.: tight fillet) that painfully tightens around the primate's head to teach him self-restraint (discipline) and virtue. In this dualism, we have the Monkey King, who is in a state of being free yet imprisoned. Originally, he lived freely and happily on the mountain of Flowers and Fruits, enjoying the company of other monkeys free spirit unrestrained. However, as the story progresses, he is imprisoned for his actions. First for forty-nine days inside Laozi's (老子) *Eight Trigrams Furnace* (*Bagua lu*, 八卦) and later for 500 years under the *Five-Elements Mountain* (*Wuxing shan*, 五行山) by the Buddha *Rulai*, 如來).

The monk Xuanzang enforces his control over the Monkey King through a golden fillet, which functions on both a psychic and mental level. The threat of the spell – which triggers an excruciating headache upon recitation – creates a constant state of restraint, imprisoning his will and limiting his capacity for negative desires. His journey was full of hell (battles, imprisonment, quest eighty-one trials). He finally attains enlightenment by becoming the *Victorious Fighting Buddha* (*Dou zhan sheng fo*, 鬥戰勝佛).

## III. Transformation of Well-being with Instances of Monkey King

In the early chapters of the novel, Monkey King becomes a disciple of the Buddhist-Taoist philosopher Subodhi, also known as Master Puti Zushi. In the description of the myth, when Monkey King knocked on the door of the temple where Master Puti Zushi lives, he did not open it immediately. After waiting for a while, an immortal young man opened the door. After a quick exchange with the immortal young man at the entrance, the Monkey King is led to a hall where Subodhi is lecturing to a group of “lesser immortals” (*xiaoxian*, 小仙). The teacher immediately asks what is his name and where is his home but becomes upset as he believes that Monkey King is lying about his ten-year journey from afar. However, after being assured of the truth and hearing about his miraculous birth, Subodhi officially accepts Monkey King as his disciple, giving him the religious name Sun Wukong 孫悟空 (Monkey Awakened to Emptiness). Monkey lives in Master Puti's mountain home for a total of 10 years, seven as a novice and three as a close disciple. The Sage taught the Monkey King secret Buddho-Taoist practices, and as a result, he gained the immortality he had long been seeking. In clarifying this part of the myth, we see that the Monkey King attains his transformations by following the “virtue of perseverance”, for example the expectation of Immortality. A deeper meaning to interpret this transformation can be interpreted through Taoist theories of nature. If one lived in harmony with Tao (道) – which literally means road, path and the way to the universe - one could become invulnerable – immortal and can avoid human frailties (diseases, dangers, difficulties between life, and death). Taoists believe in spiritual

immortality, where the spirit of the body joins the universe after death. The roots of the philosophical theories of Taoism can be found around the 4th century BC, as a continuum of influences coming from the Early China schools of cosmological and philosophical conceptions (Granet 2012; Braudel 2020).

In my perspective, “the teacher of transformation” is an indirect reference to the teachers of knowledge. This includes the teachings of Confucius as recorded in the Analects, the Hundred Schools of Thought, Sun Tzu and the Art of War, as legalistic frameworks of punishment and rewards. The legalists Shen Buhai and Han Fei, a system for proper government administration. The Chinese classics Jin Ching with the so-called book of Changes-divining practices, and Lüshi Chunqiu with the calendar for appropriate seasonal activities. This list also encompasses the teacher and founder of Taoism Lao Tse (Tao Te Ching), the main book of Taoism, a philosophical text with declarative statements and deliberate contradictions.

Modern sinological scholars such as Kohn (2000), Robinet (1997), Komjathy (2014) refer to the various Taoist beliefs as a religion containing a combination of teachings and diverse opinions. The concept of transformation being the central core of Taoism. Greimas (1983) states that a text can be analyzed on two levels: the surface level and the immanent-deep level. At the surface level, a narrative flow of states and transformations regulates the chain of forms and concepts, while at the deep level there is a network of relations and a system of actions. In this case, the Monkey King determines the flow of the novel as a chain of events arising from his various actions. This chain reaction of plot, events, and alternation is what makes *Journey to the West* so great and interesting to the reader. At its deep level of analysis, we find very clearly concepts, practices of ritualistic traditions, philosophies of Chinese culture (Confucianism - Buddhism - Taoism) but also of non-traditional religion such as Chinese alchemy, Chinese astrology, and Zen esoteric philosophies. Additionally, it includes martial arts such as Kung Fu (武術), traditional Chinese Medicine (Chinese herbal medicine), gentle martial arts, Chi Gong (氣功) and Tai Chi Chuan (太極拳) as well as traditional concepts, ritual symbolism and practices who practiced Shamanism from various ritual orders.

In conclusion, we observe that the transformation of the Monkey King story from the original novel *Journey to the West* into multiple visual media, comics, Chinese opera, television series, and films, is a characteristic example of the process of understanding across different semiotic systems. This intersemiotic translation that is the shift from one linguistic system to a non-linguistic system, was articulated by the linguist Jakobson in his essay *On Linguistic Aspects of Translation* (1959).

At the same time, the timelessness of the Monkey King narrative is evident not only in the wider region of Asia, but also as an important cultural influence of China on Western societies.

#### **IV. Posthuman, Metahuman and Transhuman Reflections**

Contemporary artists in both the East and West have redefined the image of Monkey King in visual culture through a radical overturning of the principles of liberal capitalism, the deconstruction of stereotypes, feminism and gender fluidity, but also the transhumanist vision of a transformed future humanity. A humanity with posthuman, metahuman and transhuman versions.

Critical Posthumanism criticizes the philosophy of humanism, which placed humans at the center of the universe (anthropocentrism), and proposes a reshaping of human identity and existence in relation to nature, the environment, and other non-human beings, based on equality, solidarity, and sustainable development.

The story of Monkey King unfolds in Wu's 16th-century novel, outlines elements that can be interpreted in contemporary posthumanist philosophical thought, as seen mainly in critical posthumanism (spiritual transformation). Throughout the one hundred chapters of the novel, there is a pervasive search for knowledge. Monkey King acquires philosophical knowledge through continuous learning and ultimately enlightenment through continuous spiritual transformation.

For methodological reasons, I will divide the novel into two paths of search. In the first path of search, Monkey King examines the world (from his birth to his imprisonment chapters 1-7), travels to cities, and sees many examples of human degeneration and wickedness. While in the second path of inquiry (from his liberation to the successful completion of his goal, journey - enlightenment, spiritual victory chapters 8-100), he becomes a companion, servant, and protector of the monk Xuanzang, overcoming 81 trials and knowledge. This evolutionary transformation reflects the idea of self-improvement, self-expansion, and the pursuit of absolute power and knowledge.

In the posthumanist view, solidarity and equality play an equally decisive role in philosophical thinking. Indeed, in the novel we can discern the supportive role of Monkey King both as the king of the monkeys who cares for and looks after his tribe (monkey companions and friends), but also as his duty to watch over and protect every monkey (Wu and Yu 2012a, 126). An extension of his role of solidarity is the creation of a "brotherhood" with the seven (7) wise men, an alliance with the same beliefs (Wu and Yu 2012a, 158-159). His rebellious personality and his story itself can be an example of resistance to the injustices of modern society (environmental, social, political, inequalities, etc.) making him a symbol of every revolution and every form of resistance that humans must engage in throughout history. His evolution, through his adventurous attempts to achieve his personal goal of immortality in order to become equal to the gods, brings to mind the efforts made by man for his own evolution, both personally and as a species.

Of particular interest is the German philosopher Sorgner's (2021) take on the word "cyborg" (cybernetic organism), which has its roots in ancient Greek. In *We have always been cyborgs*, he states: "Specifically, the word 'cyber' comes from the ancient Greek word 'κυβερνήτης'(kyvernitis), which means helmsman or pilot. Thus, a cyborg is a guided organism. It is crucial here that the analogous term 'pilot' denotes someone who is in control. This gives him the necessary basis to conclude the following: "Our logic allows us to survive [...] Logic is not a device that produces truth for the sake of truth [...] but to realize the degree of logic we need [...] Our organism is guided by our trainers. Therefore, we are guided organisms, or in other words, cyborgs. We have always been "cyborgs" since we became homo sapiens" (Stamati 2023).

Following this logic, in the story of Monkey King we find the context of the mentor. Monkey King persistently asks the teacher Puti (helmsman) to teach him advanced Taoist practices, including the Way of Immortality and the Way-Path, or the principle (DeFrancis 1996, 113). The practices symbolize the right way of being, in the context of ongoing practices to achieve enlightenment or spiritual perfection (LaFargue 1992, 245-247). Monkey King himself becomes a helmsman at the beginning of the novel as king of the monkeys, with the task of watching over and protecting every monkey. On the

contrary, he remains obedient and submissive in order to atone for his sins, as a worshipper and bodyguard of the monk Xuanzang (mentor-teacher, trainer) from whom he learns about the virtues and teachings of Buddhism in exchange for his freedom.

Perhaps this impulsive nature of the monkey hides a philosopher, a guide of the human spirit who seeks truth through the constant pursuit of knowledge and personal development, as mapped out by Nietzsche in his work *Thus Spoke Zarathustra* (Nietzsche 2008), where a spiritual being tramples on the concept of human and transcends it (superhuman).

In this work, Nietzsche argues that Darwin's theory of evolution as a species is not complete; it is a journey that we must undertake with knowledge, courage, risk, and virtue, and thus we will reach through this path the "great noon," that is, the middle of evolution as higher beings. In his work, he supports in an allegorical way the concept of the artist, who will be reborn through his "decline." Overcoming his fears always presupposes chaos, or even destruction, as a necessary process of creation and evolution. The Monkey King symbolizes the free spirit, unrestricted by rules and hierarchies, seeking autonomy and freedom, while being closely connected to nature and the environment. He was born and lives on the Mountain of Flowers and Fruits, feeding vegetarian food, reflecting ecology and ecological awareness, and love for the environment. Polyphony and inclusion are central concepts within the wide variety of posthumanist approaches (Sorgner 2024, 13).

Sorgner defines transhumanism as a cultural movement that focuses on the use of enhancement technologies to help human beings surpass the limitations of their current existence. He believes it is in our best interest to take control of evolution, thereby increasing our chances of living a good life while also ensuring the survival of our species (Sorgner 2021, 1).

From this perspective, the Monkey King is a supernatural being and can be seen as a transhuman (being) entity within a transhumanist framework. One of the elements of surpassing limits is his ability to transform into anything he wishes (countless transformations), as well as to clone himself using his hair, according to a method that transcends the physical body (Wu and Yu 2012a, 148). He can travel vast distances through the cosmos using a magical cloud that travels 108.000 li (54,000 km) in a single leap (Wu and Yu 2012a, 143), and wield an 8 – metric ton magical staff, an additional weapon which he always carried (Wu and Yu 2012a, 158). Even after becoming immortal, he still requested and empowered the staff. The Monkey King essentially inherits the concept of death and abolishes it. For instance, he erases his own name and that of his friends from the list of the dead (Wu and Yu 2012a, 158–161).

These clones of him could create billions of their own clones, and in turn, those clones could do the same, a phenomenally infinite process. However, this ability of the Monkey King brings to mind the concept of cloning an organism. The idea of cloning can have different interpretations and applications depending on the context and purpose. On one hand, it can be seen as a means of renewal or exact replication of oneself. On the other hand, it can be viewed metaphorically, preserving identity and memory. In the legend, the Monkey King also had the ability to cut himself into pieces (Wu and Yu 2012c, 394). One of these pieces would become his original self, while the rest would become clones. These autonomous beings would follow his commands, just like a general command of his army, or like a mystic person using his immortal spiritual body instead of his physical one. The Monkey King becomes almighty, bionic, and achieves immortality with the help

of the “peach of immortality” (Wu and Yu 2012a, 182), pills of Longevity (Wu and Yu, 2012a, 186), by drinking “the heavenly wine”, (Wu and Yu 2012a, 179), and also by consuming the “Ginseng fruit” (Wu and Yu, 2012a, 438). Why does he seek immortality?

Because he seeks immortality, aiming to abolish time and physical evolution, whether it’s death by natural causes or unforeseen events, to become invincible with absolute power and freedom, and to rule the heavenly realm.

In the illustrated volume *The Monkey King 72 Transformations of the Mythical Hero*, 72 artists from around the world depict and interpret the multiple transformations and fantastical nature of the Monkey King in different ways.

The artists’ personalized recreations were based on three axes:

- traditional depictions of the Monkey King, incorporating digital imaging techniques using special software and effects to create impressive and fantastic images.
- Various interpretations and variations of the character, adding their personal style.
- The addition of contemporary elements and symbols to renew the image, adapting it to the modern world.

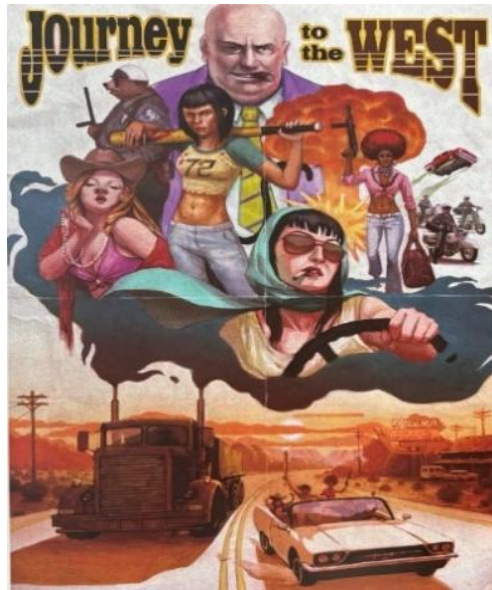


Fig. 3. The Monkey king 72 transformations of the Mythical Hero, Vincent Zhao, (Luis Melo)

As Sorgner said, based on Heraclitus’ phrase, “you cannot experience a work of art twice, just as you cannot step into the same river twice” (Sampanikou 2024, 9), summarizing in this phrase the contemporary forms of creation with digital media.

The illustrated volume is replete with transhumanist artistic approaches to King Monkey, featuring hybrid identities, biotechnological elements, and genetically modified forms of his character; while at the same time, we have depictions in the interweaving of the posthumanist view and contemporary becoming, such as the breaking down of

gender stereotypes, duality, but also the “childish lightness” of kawaii. Luis Melo (Fig. 3) states at his illustrated interpretation of Monkey King: “As I put more thought into what to draw, I got a bit lost on how to approach it in relevant way. I start developing an initial sketch that set the character in a car (instead of the white horse), it would feel like something from the 1940-1950. And it was then when my picture was developed pretty far that I thought to twist it and make it more powerful. What if they were women? I thought of the movies *Thelma and Louise* and *Trantino Death Proof*.”

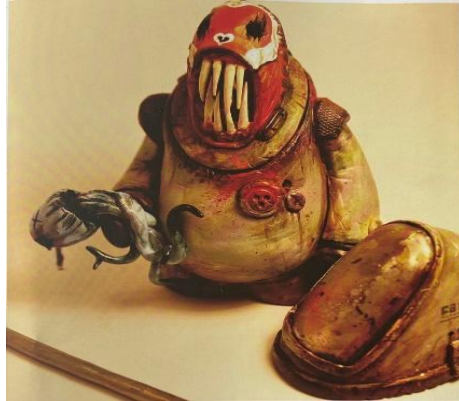


Fig. 4. The Monkey king 72 transformations of the Mythical Hero, Vincent Zhao, (Chen Wei).

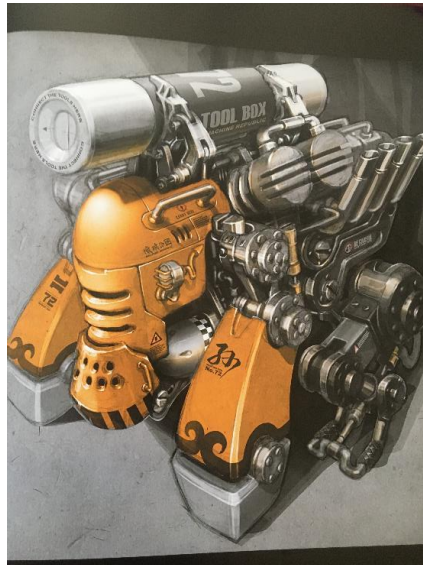


Fig. 5. The Monkey king 72 transformations of the Mythical Hero, Vincent Zhao, (Xie Yunzhang).

Similar Chen Wei (Fig. 4) highlights: “Recently I have experimenting with outer space subjects I decided to assign my monkey king to subdue the evil spirits on the other planets

“I focused on the spiritual realm when researching the character ...I love him for his almightiness, resourcefulness and his courage to safeguard justice and subdue evil spirits. Therefore, I decided to incorporate some mechanical elements ... after all we are living in the age of machines”.

According to Xie Yunzhang (Fig. 5) “...I have chosen to reinterpret the Monkey King as a machine. According to my concept, the machine can take different forms. They can be seen as clones of the Monkey King or as what he has transform into. The golden band is intended to be a heavy instrument that has incorporated multiple functions. with the help of these tools the monkey king can invert more instruments and find resolutions to more complicated problems with higher efficiency and precision”.



Fig. 6. The Monkey king 72 transformations of the Mythical Hero, Vincent Zhao, (Li Hao)



Fig. 7. Adventures from China by Wei Dong Chen (2012)

Additionally, Li Hao (Fig. 6) notes: “I started thinking about what the monkey king would do in the future when the captain black cat popped out in my mind along with an

obscure image of the police wagon featuring black and white motifs...and create a monkey king robot coming from the Future”.

The story of Monkey King has also started to be analyzed from a queer perspective, Christopher Younie in their notes article explores how the original text may be read queer and its queerness amplified through the comic series “Adventures from China” by Wei Dong Chen (2012), (Fig.7). As Christopher Younie notes in his article *Journey to the West goes Queer...* “reads as an adventure romp, a mythical quest or “historical fiction, political satire, and religious allegory” (Gray and Wang 5). This genre fluidity could account for the story’s perpetual ability to appear in a multitude of incarnations. MK, illustrated by Wei Dong Chen, was published by the Korean-based JR Comics whose CEO JR Han informs us: “We’ve set an unprecedented goal of creating comprehensive adaptations of the East’s greatest stories via one of the West’s greatest storytelling innovations: the comic book” (Lovett, JR Comics Giving Away Graphic Novels Based On Chinese Literature At Book Expo)”.

The multidimensional representation of the Monkey King is evident not only in Asian tradition but also as a significant cultural influence on Western societies. With his ability to change his appearance and adapt his identity to fit the needs and messages of each portrayal, the Monkey King achieves a universal dimension. Arguably, the Monkey King, Wukong, not only holds a prominent place in Chinese lore but also stands out as a legendary figure of intense semiotic interest in later adaptations, including television, theater, comics, and cinema. To this day, he remains widely popular in East Asian countries, although under specific conditions in the West, such as the US and Europe, making him a timeless character an eternal hero.

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## **PART III**

### **EMBODIED PRACTICES OF WELLBEING AND POSTHUMANISM**

## THE EXISTENTIAL AND THE ONTOLOGICAL: EXCESS, INDIFFERENCE AND INTELLIGENCE

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Stelarc\*

As a forward facing, bipedal body with two eyes and two ears to navigate, two limbs to locomote and two limbs to manipulate, the self is constructed as an intentional agent, with a past (what goes on before) and a future (what the body is moving towards). The body is forward facing and thus future oriented. The self experiences the world as what it has recently forgotten and what it can now imagine. Rather than an intrinsic essence, the self is a dynamically evolving and an unstable construct. Our philosophy is the outcome of our physiology.

To be an intelligent agent, you need to be both embodied and embedded in the world. The question though now becomes with what kind of body and in what kind of world. Both embodiment and existence become open to interrogation. And at a time when the individual body can be threatened existentially, by fatally being infected by biological viruses, what becomes apparent now is that the human species is confronted by the more pervasive, invasive ontological risk of infection by its digital entities and viral algorithms.

The body's task envelope has expanded exponentially. We now navigate from cosmological deep time to physical nano-scales to virtual non-places. The body inhabits abstract realms of the highly hypothetical and of streaming subjectivity, a hyper-human that becomes more than the sum of its attachments and implants, but less than the sum of its hyperlinks. Inhabiting a technological terrain of precise and powerful machines and potent computational power poses both existential and ontological risks - what it means to be a body and what it means to be human. The body needs to manage its self-tracking, biometric acquisition, surveillance, face-recognition, not to mention coping with information overload and attention deficit. It needs to be aware of autonomous decision-making systems and not becoming click-bait. Rather than the production of meaning, information overload results in the implosion of meaning. Not only are people being monitored but their behaviours and desires are also being manipulated by media machines and their algorithms. Intentions are undermined by algorithmic prompts. And agency is fractalized and distributed online. These are all existential challenges and experiments into new modes of being and co-existence with artificial non-human others. An Operational Ontology that is not essence based. The subject no longer remains the referent.

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The concern with life-style and well-being in the realm of the digital is now surpassed by the problematics and risks of interacting with the machinic and the computational that has accelerated operational capabilities beyond the body but also now amplified cognitive functions beyond the human. The digital generates zones of liminality where the experience of self oscillates between being biological, becoming machinic and with human comprehension being contaminated by computational calculation and prediction. We inhabit a time of ambivalence, uncertainty and anxiety. The body's physiology, its bodily metabolism and circadian rhythms have become contingent and conditional to the information, the intensities and the distractions created by its instruments, the operational capabilities of its machines and the insights created by its computational systems. To be propelled at high speed, the body needs to be immobilised. To be fully informed, the body becomes anaesthetised. What it means to be a body, what it means to interact and become aware in the world becomes problematic. And perhaps what it means to be human is not to be human at all.

This exponential scaling out and speeding up the machinic and computational generates an artificial life and an artificial intelligence that has conditioned and configured bodily and human behaviour. Bodies are increasingly augmented, machines become increasingly autonomous. Coupled with the desire for disembodiment we are seduced by the seamlessness and smoothness of virtuality. But the digital is not only the realm of the virtual. It also facilitates alternative anatomical architectures, soon generating a multiplicity of chimeric assemblages and hybrid synthesis not yet imagined, yet to be engineered. Circulating, Fractal and Phantom Flesh proliferates. And Artificial Intelligence may well become and Alien Intelligence. In fact, the first signs of alien life may well come from this planet.

Being digital means the body inhabits a flattened ontology of interacting algorithms, circuits, motors, machines, instruments, organisms, objects and other ecologies and networks. There is no privileging of the human. To be in excess is to be simultaneously in both proximal and remote spaces. Aliveness and affect is not only generated in the merely biological. Robot musculature becomes more robust and its dexterity becomes ever more delicate. Artificial intelligence proliferates. Neither subject nor object, AI is a zone of dynamic interactions and modulations that speak to and shape human sensory perception, human ideas and human actions. To be in excess with an array of sensing systems and amplified cognition, the body becomes an extended and affective operational system.

The self becomes situated beyond the skin, and the body is emptied. But this emptiness is not an emptiness of lack but rather a radical emptiness through excess. An emptiness from the extrusion and extension of its capabilities, its augmented sensory antennae and its increasingly remote functioning. To communicate now means to connect. To be present is to be absent. Or perhaps to be absent is to be present. Digital environments generate a disembodied presence and conversely an embodied absence. Your spatial and temporal coordinates no longer conveniently position you in one place at one time globally. You can be connected to anyone, at anytime from anywhere. We are neither all-here-now, nor all there all-of-the-time, but partly here sometimes and partly somewhere else at other times. We are becoming someone who thinks otherwise from elsewhere. There is an increasing and seamless oscillation from offline and online operation. The increasing speed of oscillation blurs any meaningful distinction between the actual and the virtual. Face-to-face communication becomes screen-to-screen

transmission. Visceral transactions are reduced to visual animations. Our screens have become our skins. Skins have become smooth. Skins as screens attain optical and haptic thickness. It is this thickening that collapses the psychological space between remotely linked bodies. There is intimacy without proximity, intimacy is generated without skin contact. The visceral has become merely the visual. Faces are flattened and flicker on and off, as digital phantoms, as glitches in evolutionary time.

# WELL-BEING

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Jean-Marc Matos\*

## **Abstract**

*Well-being puts forward that dance, as choreographed coexistence, and embodied practices, can open new pathways for political and ethical imagination in an era dominated by algorithmic systems, artificial intelligence, and ecological fragility. This text positions dance not as a form of representation but as an epistemological and ontological practice—a way of thinking, sensing, and existing in relation. Through personal artistic practice, and reflections from projects developed within K. Danse, it argues that choreography constitutes a living laboratory in which new modalities of coexistence between human, non-human, and technological agents can be rehearsed, felt, and reconfigured. The body is approached not as a stable identity but as a living, relational field, unstable, porous, and fully embedded within ecological and technological systems. In this framework, intelligence is distributed—not solely human nor artificial, but emergent from interdependence, micro perception, and shared vulnerability. Ultimately, Well-being presents dance as a fragile yet essential site of political awakening. It is a place where freedom is not defined as independence but as responsiveness to others; where care becomes an architectural principle; where ritual, error, and collective improvisation perform alternative futures. Rather than offering utopian closure, the text proposes a eutopian ethics—an ethics of the “good place” that is necessarily unfinished, imperfect, and yet profoundly necessary. Well-being, a place where coexistence is choreographed not in abstract ideals, but through the trembling of bodies, the unpredictability of relations, and the continuous rehearsal of being together in an uncertain world.*

## **I. Introduction**

To choreograph today is to move within architectures we do not see—data infrastructures, predictive models, invisible surveillance. Every gesture leaves a trace in the digital sediment of our world. Yet within this pervasive abstraction, dance insists on the tangible, the trembling, the breath. It reclaims the body as an unpredictable field of relations that resists full translation into code. It insists that life is not reducible to information. Here, choreography is not only an aesthetic practice but an ontological proposition: it asks how we can inhabit the world differently, how we can resist the reduction of existence to efficiency and surveillance.

Error, failure, and uncertainty are central to my artistic practice. They form the cracks through which freedom breathes. In works such as F\_AI\_L, Myself, or Eternity, I do not treat artificial intelligence as a sovereign entity or as a perfect mirror of human

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capacity. Instead, I approach it as an unstable partner, capable of misunderstanding, mistranslation, and poetic misalignment. When an AI fails to recognize a body or misinterprets a movement, a new relational space emerges—neither human nor machinic, but metahuman: a shared field of becoming, where identity is no longer fixed but relational and transient.

A movement is never singular. It exists only because gravity, breath, attention, and atmospheric pressure collaborate to make it possible. The body is not a closed system but an ecosystem of relations, an unstable constellation of forces perpetually negotiating balance.

In this sense, choreography is not imposed upon the body; it emerges from the ongoing conversation between the body and the world.

The ritual dimension of dance is important here—not as nostalgia for a past, but as a structure that holds space for transformation. In many of my participatory performances (see specially the RCO performance), the audience is not merely watching but moving, entering the ritual. Gestures circulate, bodies resonate, decisions are shared. Technology becomes part of this ritual apparatus—sensors, cameras, projections—but not to dominate. Rather, it listens.

It misinterprets. It reveals. The performance becomes a living organism in which agency is distributed: no single body, human or machine, controls the outcome.

This is also why I often speak of eutopia rather than utopia. Not the perfect world, but the good world—the world in process, where harmony is not imposed but continually negotiated.

Dance offers a model of this possible world: fragile, precarious, but alive. A dancer on stage is always in danger of falling; it is this constant proximity to imbalance that gives meaning to movement. Well-being, as choreographed coexistence, works the same way—it is not stability but the art of falling together without collapsing.

The body, in this light, becomes a site of political awakening. Not through slogans or declarations, but through its capacity to feel, to relate, to be affected. Every movement asks a silent question: How can I be here, with others, without dominating? How can I exist without closing myself off from what is not me? This is where choreography becomes ethics.

This is where dance becomes a way of thinking—not with concepts, but with skin, with weight, with silence.

It is here, in this fragile field of relation, that the metahuman begins—not as a superior version of the human, but as the dissolution of its rigid borders. Not a flight into transcendence, but a dive into entanglement. The metahuman is not the posthuman fantasy of invincibility; it is the recognition that identity is movement, not monument. In every rehearsal, in every improvisation, we practice this truth: we are not fixed beings. We are choreographies.

This perspective does not reject technology; it repositions it. Technology becomes a medium that can destabilize identity rather than reinforce it. In performances such as *F\_AI\_L* or *Myselves*, AI does not serve as a mirror of human perfection, but as a mirror of misunderstanding. Its errors are fertile. When a system fails to recognize a gesture or misreads a human form, the choreography does not collapse—it begins. A new relation arises in the gap between expectation and interpretation. The machine, like the body, becomes porous, vulnerable, uncertain.

Metahumanism, as expressed by Jaime del Val, therefore aligns with my insistence that dance is not about expressing a pre-existing self, but about composing oneself in relation—human, digital, ecological. The metahuman body is an ecological body: it does not end at the skin. It includes the rhythm of a crowd, the latency of a sensor, the humidity of air, the pressure of time. It is transindividual, trans sensorial, trans material. And because it is constantly dissolving and reconfiguring itself, its ethics is not that of purity or perfection, but of care, negotiation, and attentiveness.

## II. Care, Error, and the Politics of Shared Fragility

If the 20<sup>th</sup> century taught us that power can be centralized in a single body, monument, or ideology, the 21st century teaches us that power now resides in invisible networks—financial systems, data flows, predictive algorithms.

These are no longer external machines; they are woven into our gestures, decisions, desires. Yet it would be naive to declare technology an enemy. Technology is not a monolith; it is a field of potential—capable of surveillance or of emancipation, depending on how it is choreographed into life.

The pandemic, ecological collapse, and algorithmic governance have exposed the illusion of independence. No body survives alone. Timothy Snyder reminds us that freedom is not the absence of constraints but the presence of supporting structures—an echo of the stage, where balance is only possible because weight is shared.

This is why I insist: choreography is not merely spatial organization, but an ethics of coexistence. It proposes that survival is relational, that care is not sentimental but structural.

Care is resistance to abstraction. In a world that measures value through productivity and visibility, care operates in hidden gestures: the hand that lifts another, the breath held in unison, the silent waiting. Dance trains us in this ethics—because a duet is only possible when one body listens to the other. Care is not softness; it is risk. It demands that we stay vulnerable in a world that worships invulnerability.

Technology can either reinforce isolation or amplify empathy. The question is not whether machines think like us, but whether we are willing to feel with them. In my work, AI does not replace the human; it challenges it, fragments it, multiplies it. The machine's failure to perfectly recognize the body becomes an invitation to rethink recognition itself. What if understanding does not require accuracy, but attention? What if care includes listening to the machine's error?

This is not far from the rehearsal studio. In a rehearsal, no movement is final. Every sequence is provisional, porous, open to change. There is no perfect version—only the version that exists in relation to the moment. I see the metahuman in the dancer's trembling knee, in the breath that catches, in the foot that touches the floor just a fraction too late. These are not mistakes; they are beginnings. They rupture the illusion of control and open space for relation.

In participatory installations and performances, I often invite the audience to move, to touch, to be seen—not as spectators but as co-composers. The choreography becomes a temporary society, fragile but real. Here, the politics of care are not spoken; they are danced. No one dominates the rhythm. Nobody is erased. Imperfection becomes the architecture of connection.

Failure, in this context, is not the opposite of success; it is the condition of relationship.

To fail together is to discover that existence is not a solitary act. Every balance begins as a fall. Every harmony begins as noise. Every community begins as an unknown movement toward another.

In this world of collapsing certainties, I do not offer utopia. I offer eutopia—the good place, the place of careful becoming. A place always unfinished, always vulnerable. A choreography.

And so I return to the idea of well-being: it is to coexist, which is different from agreeing;

it is to move together without erasing difference. It is to accept that we are not complete.

That identity is porous. That technology is not destiny. That bodies think.

That machines can feel—if we let them fail.

That the future is not a program to execute, but a rhythm to inhabit.

To put forward well-being is to affirm this:

We are not monuments. We are movements.

Not answers, but rehearsals.

Not isolated beings—but entangled, trembling, metahuman lives.

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- ETERNITY. Project investigating immortality, embodied epistemology, and temporality.
- RCO (Radical Choreographic Object). Project involving audience participation. [Project details available at: <https://www.k-danse.net/en/>]

# MICROHISTORICAL NARRATIVES IN THE POSTHUMAN ERA: THE PLAYFUL RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE TOOLS AND ARCHIVAL MATERIAL IN FILM. - A CASE STUDY PRESENTATION OF THE HYBRID DOCUMENTARY FILM «WHO WAS HERE?» (25', 2025)

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Evi Stamou\*

## **Abstract**

*This paper examines the relationship between microhistorical narratives and posthuman theory as shaped by the introduction of artificial intelligence tools and programs in audiovisual production, focusing specifically on archival documentary filmmaking. Using the hybrid work Who Was Here? (25', 2025, directed by E. Stamou) as a case study, it first identifies how the film fits within the category of microhistorical documentaries and then analyzes how AI tools were employed both in scriptwriting and throughout production and post-production of the film. The paper addresses key questions regarding the fragile nature of historical truth and the role of the machine as a co-creator in artistic practice.*

## **Keywords**

*Microhistory; Posthumanism; Photography; Archive; Artificial Intelligence; Documentary; Film.*

**Link to film:** <https://vimeo.com/1060838694> **Password:** aegean5

## **I. Introduction**

From its birth 130 years ago, cinema has been both the creative result of technological evolution and a field of experimentation for new technologies.

Indeed, many times film has been the driving force that fueled them. Cinema — “the most modern aesthetic product of industry and modernism”<sup>1</sup> — unlike other arts, required from its very birth the participation of machines and technology and throughout the twentieth century it evolved in tandem with their development. This evolution included the transition from silent to sound cinema following the invention of the Vitaphone device in 1927 (which enabled the reproduction of music through a disc synchronized with the film projector), the invention of the Technicolor synthetic color

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<sup>1</sup> Christos Skylakkos, *March 19, 1895: The Birth of Cinema* (Athens: To Periodiko, 2018), <https://www.topeiodiko.gr/19-martiou-1895-i-gennisi-tou-kinimatografo/> (accessed August 15, 2024).

process (perfected in 1941 with the Monopack Technicolor system), the introduction of stereophonic sound in 1950, the emergence of 3D projection, and later, the advent of videocassettes and digital cameras. In recent years, the rapid development of artificial intelligence technologies, along with their increasing presence in cinema, has prompted a reconsideration of which tools can be applied to moving images and how their use may alter their perception. In particular, for films that rely on archival material and use microhistorical narratives as their primary source, it becomes crucial to ask what role will AI technologies play when incorporated in the procedure of the filmmaking and how they might influence the relationship between the documentary genre and reality (or Truth), and, by extension, how they might affect both our individual and collective memory.

The film “Who was here?” serves as a case study to explore this complex and playful relationship between artificial intelligence tools and archival material in film. Initially conceived as part of a master’s thesis, the project, which can be situated within both the tradition of microhistory and the philosophical discourse of posthumanism, aims to explore how evolving AI technologies might not only transform cinematic production, but also influence the ways in which we perceive and reconstruct the past, and to raise questions about the fragile nature of historical truth, its relation to documentary film, the ethical boundaries that may be crossed in our attempt to keep our memories alive by creating vast databases of personal data with public access and the role of the machine as a co-creator of an artistic work.

“Who was here?” is a portrait of my father, Yannis, who was born in 1949 in a small village in Epirus and came of age in 1967, the year the military junta took power. It follows his journey from a difficult and impoverished childhood to early adulthood, his military service, and his conscription in 1974, before his move to the city. After months of training AI systems with archival material (mostly photographic family archives from Greece of the 1950’s, 1960’s and 1970’s), interviews and testimonies, the documentary, which is structured narratively around a dialogue between the human creator of the work and an AI language model, seeks to fill the gaps and inconsistencies I have detected in my family history, mostly regarding what might have happened to my father during his conscription, a period he refuses to talk about, simply saying he “doesn’t remember much.”

The film uses artificial intelligence tools and softwares (like ChatGPT, ElevenLabs, Midjourney, Photoshop and Apple face ID<sup>2</sup>) and it borrows its title from the question - “who was here?” - that the facial recognition system of the most widely used social media platform, Facebook, asked its users every time they added photos to their profile, thus encouraging them to tag the names of the people (usually friends and relatives) depicted in them<sup>3</sup>.

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<sup>2</sup> All the editions of the programs used were dated between December 2022 and September 2024.

<sup>3</sup> In 2010, Facebook launched the facial recognition system ‘DeepFace,’ which helped identify individuals appearing in photos that users uploaded daily to the social network. DeepFace was capable of identifying faces with an accuracy higher than comparable FBI systems —almost like a human. Beyond “face unlock” features on mobile phones and the facial recognition systems used at airport security checks, Facebook’s “tag suggestion” service was the most common form of everyday use of facial recognition technology (Johnson, 2021). Despite the public outcry over privacy violations, Facebook announced the discontinuation of this service only at the end of 2021, coinciding with its corporate rebranding as “Meta.” The ban on this specific service did not imply a total prohibition on the use of the underlying technology: the company retains

## II. Reimagining Microhistory: Forming a Relationship Between Archives and Posthuman theory

“Who was here?” broadly belongs to the group of films that promote the perspective of “history from below”, focusing on the use of personal archives and first-person narratives. Efrén Cuevas categorized them as “microhistorical documentaries.” Unlike traditional historical documentaries which, much like written historical texts of previous centuries, convey a sense of objectivity and construct a view of history by emphasizing public events and well-known figures, microhistorical documentaries, in correspondence with written microhistory as primarily defined by Carlo Ginzburg and Giovanni Levi, gather specific characteristics that include: the exploration of the the past through limited-scale observation, the use of narrative structures and the appropriation of archival materials, and, more specifically, the appropriation of family archival materials, which, according to Cuevas, are the main source for micro-historical documentaries and “they are usually limited, because the focus is generally on individuals outside of public history”.<sup>4</sup>

The limited scale of observation is perhaps the most defining characteristic of microhistorical research: it is used in order to understand the object of study in a different way<sup>5</sup> and to alter the content of what is represented, or, in other words, of what can be represented<sup>6</sup>. The purpose of employing a limited scale of observation is not to treat certain cases as examples that illustrate broader theories, but rather to discover, through “microscopic” analysis, historical realities that have gone unnoticed in macrohistorical analysis, in order to better explain a particular era<sup>7</sup>.

One the occasion of one of the screenings of “Who was here?” a critic summarized the film as “the story of an ordinary man seen through the eyes of artificial intelligence.” While this characterization is not inaccurate, it obscures an essential dimension of the project: the film concerns an ordinary individual situated within a specific historical period and geographical context. In the course of my research, it became evident that artificial intelligence possessed neither sufficient nor sufficiently accurate information about such a subject. Owing to this scarcity of data, the system repeatedly introduced elements drawn from unrelated narratives, other cities, and different historical and geographical settings.

This makes it even more important to return to one of the project’s initial aims: to allow a story from this group of people and region (such as rural, mountainous Greece of the 1950s, 1960s and 1970s) to gain representation and to become a legitimate subject of study.

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DeepFace, which it employs for other functions, such as providing access to users with locked accounts or allowing them to complete a transaction. Until the service was withdrawn, one in three users added tags with the names of friends and relatives to their photos (ibid.).

<sup>4</sup> Efrén Cuevas, *Filming History from Below: Microhistorical Documentaries* (New York: Columbia University Press, 2022), 7. Scholars such as Marianne Hirsch also emphasize the importance of family archives. especially in the transmission of intergenerational memory, placing family photographs and home videos on the same level as oral tradition and written texts. Hirsch, in particular, regards family photographs as a primary vehicle for transmitting memories linked to historical trauma, passed down from one generation to the next.

<sup>5</sup> Cuevas, *Filming History from Below: Microhistorical Documentaries*, 24.

<sup>6</sup> Jacques Revel, *Jeux d'échelles. La micro-analyse à l'expérience* (Paris: Editions Gallimard, 1996), 19.

<sup>7</sup> Cuevas, *Filming History from Below: Microhistorical Documentaries*, 24.

Even my father, when I told him I wanted to make this film and began collecting and digitizing the photographs from his archive, remarked that “this life is of no interest,” that these photographs “could belong to almost anyone” he knew. He doubted whether such personal archives could serve as meaningful sources of information. Yet, it is precisely this kind of material that can provide valuable insight into the lived experience of communities that have long remained underrepresented.

Of course, microhistorical documentaries do not simply use archives as sources of information; rather, they incorporate archival materials in multiple ways as constitutive elements of the work itself. In such cases, the archive is transformed from a source into the very subject of inquiry. As Ann Laura Stoler argues, this transformation compels us to rethink both the materiality and the imaginary embedded in archival collections, as well as to re-examine the truth claims that underpin documentary practices. Stoler’s perspective (widely known as the “archival turn”) redefines the archive not as a static repository but as a “field of knowledge production”, as Vincent Sánchez-Biosca observes<sup>8</sup>. Increasingly, “the archive is now seen as the site where social memory has been (and is), constructed”<sup>9</sup> and the idea that “memory is just a point of view, another way of engaging with contemporaneity”<sup>10</sup> is becoming increasingly accepted.

The archive thus becomes a cultural signifier: a mediated and continually shifting construction.<sup>11</sup> For many scholars today, it is no longer conceived as a representation of the past, but rather as a selective assemblage of materials preserved over time for a variety of reasons.

Already during the pre-research phase, and throughout the writing of the film’s script, I found myself engaged in a continuous effort to uncover the story embedded in the very act of preserving these specific photographs. My aim was to appropriate them in the new work in a way that would foreground this underlying story, while also bringing it into dialogue with my own personal memories, shaped by my parents’ accounts of that particular period.

In documentary film, “the archival appropriation has a specificity of its own, as the filmmaker is working with archival footage whose indexical link to the present of its filming vests it with a strong truth value for the spectator,” writes Cuevas. Yet, this material remains open to interpretation, acquiring new meanings when placed within the narrative framework of a documentary.<sup>12</sup> Through this process of meaning-making, the documentarian establishes a dialogue between archival footage and other expressive devices, ranging from the use of a narrator’s voice-over to the incorporation of extradiegetic music.<sup>13</sup>

In “Who was here?”, I attempt to engage these traditional documentary practices in combination with the use of new media in an effort to resonate with Catherine Russell’s proposition in her book “Archiveology”. As she argues, “film and media artists are

<sup>8</sup> Cuevas, *Filming History from Below: Microhistorical Documentaries*, 42.

<sup>9</sup> Terry Cook, “Fashionable Nonsense or Professional Rebirth: Postmodernism and the Practice of Archives,” *Archivaria* 51 (2001): 27.

<sup>10</sup> Ricardo Falcinelli, *Chromorama: How Color Changed Our Way of Seeing* (UK: Penguin Random House 2025), 38.

<sup>11</sup> Cook, “Fashionable Nonsense or Professional Rebirth: Postmodernism and the Practice of Archives,” 27.

<sup>12</sup> Cuevas, *Filming History from Below: Microhistorical Documentaries*, 43-44.

<sup>13</sup> See for example the microhistorical documentaries by Péter Forgács «The maelstrom» (1997), Marlene Booth «Yidl in the Middle» (1999) and Jonas Mekas «Lost, Lost, Lost» (1976) among others.

uniquely positioned to find and use these tools to produce critical histories and trigger historical awakenings.”<sup>14</sup> As in traditional micro-historical documentaries that make use of narrative structures, here too the narration is shaped by a dialogue, which, however, unfolds between the human creator of the work, who asks questions or makes observations that move the discussion forward, and an AI program that responds or attempts to make assumptions. This can be interpreted as a variation of what Paul John Eakin characterized in literature as a “proximate collaborative autobiography.” Eakin’s definition refers to narratives concerning a relative or friend, carried out through the dialogue of two people who recount their personal thoughts, observations, or experiences while reconstructing the life of the beloved person<sup>15</sup>. This is also the case with the project “Who was here?”, except that one of the two interlocutors is a non-human agent. This entity takes on the role of the narrator and becomes film’s central character; in a sense, it constitutes my own version of the “cyborg” as discussed by Donna Haraway – a hybrid, a compound of organism and machine, a creature that is simultaneously part of social reality and part of fiction<sup>16</sup>. By “social reality”, she considers all our “lived social relations, our most important political construction; a fiction capable of changing the world”.<sup>17</sup>

Although Haraway was referring to women’s experience at the end of the twentieth century, we can – and indeed should – extend her reasoning to contemporary reality, in which our lived experience is defined by daily interaction with artificial intelligence to a far greater extent than we realize. It is enough to consider the ways we use digital maps on our phones, biometric ticket-control systems at airports, or the everyday reliance on AI to complete tasks, produce translations, or even seek advice about our romantic relationships<sup>18</sup>, and to reflect on how we might feel were this contact suddenly taken away from us.

In an era in which the boundary between science fiction and social reality is nothing more than an illusion, “the cyborg is both a fiction that maps our social and bodily reality and an imaginative resource for highlighting certain couplings. It is a condensed image of both imagination and material reality —two interlinked centers that ground all possibility of historical transformation.”<sup>19</sup>

This non-human entity thus becomes a version of a grandmother – a post-gender grandmother of course<sup>20</sup> – an elder member of the family who remembers and recounts. Yet, its artificial nature allows us to move beyond the narrow framework of the anthropocentric dyad that underpins Greco-Roman, Renaissance Humanism and

<sup>14</sup> Cuevas, *Filming History from Below: Microhistorical Documentaries*, 44.

<sup>15</sup> Paul Eakin, *How Our Lives Become Stories: Making Selves* (Ithaca, NY: Cornell University Press, 1999), 175-182.

<sup>16</sup> Donna Haraway, *A Cyborg Manifesto: Technology, and Socialist Feminism in the Late Twentieth Century*. (Athens: Topovoros Editions), 6.

<sup>17</sup> Haraway, *A Cyborg Manifesto: Technology, and Socialist Feminism in the Late Twentieth Century*, 6.

<sup>18</sup> Speaking about the quintessence of contemporary machines, Haraway writes that “they are everywhere and they are invisible. The modern machine is an irreverent, upstart god, parodying the omnipresence and spirituality of the Father”.

<sup>19</sup> Haraway, *A Cyborg Manifesto: Technology, and Socialist Feminism in the Late Twentieth Century*, 7.

<sup>20</sup> “The cyborg,” writes Haraway, “is a creature of a post-gender world. It has no relation to bisexuality . . . or to other seductive reconstructions of an organic totality that are achieved through the final appropriation of all the power of the parts within a higher unity”. This characteristic is reflected in the film’s final shot, not only through the narrator’s spoken words, but also through the shift in vocal frequency —from a high-“feminine” voice to a low-“masculine” one.

Enlightenment thought, and toward a philosophical perspective grounded in Posthumanism: a rational mode of thinking appropriate to an era defined as much by the digital image as by biotechnology —an era, consequently, that is not entirely anthropocentric and that remains open to all technological possibilities.<sup>21</sup> By adopting this perspective, the film aims to incorporate a broader and more inclusive viewpoint that exceeds the limits of human corporeality. Without necessarily suggesting that we have entered an era in which artificial intelligence can articulate its phenomenological perception of existence in a human-legible code,<sup>22</sup> and without presuming that this entity can serve as a reliable witness capable of narrating stories about Greece and its historical or sociopolitical events (an assumption that remains under question and is tested throughout the film) it nevertheless functions as a reliable witness regarding the information and historical data about Greece currently available on the internet, to which billions of users have unrestricted access.

In a question the program itself answered, it stated that all the general knowledge it possesses from its foundational training (prior to being fed the archival documents used in the film) regarding Greece and the conditions prevailing there (during the 1950s, 1960s and 1970s) derive from data that had been uploaded to it up to August 2023. From that point onward, it ceased to be updated with new information in order to remain “stable and reliable.”

### **III. The Use of Artificial Intelligence Programs and Tools During the Production and Post-production of the Film**

The primary material of the film “Who was here?”, my father’s archive, is photographic. The majority of these photographs were taken in the outskirts of Epirus and date from the 1950s, 1960s, and 1970s. A large portion of them were taken by my father himself, who, from a young age, was an amateur photographer. Born into a poor rural family, he rented a camera from a photo studio in Arta, from which he also obtained film to capture images during excursions, weddings, festivals, and other important social occasions. Frequently, he would lend the camera to friends, which explains why several photographs also depict him.

The first program used to digitize the archive photographs was Apple’s facial recognition system, the mark of which (a yellow frame) remains visible in some of the photos in the final film as a visual element of the new image. “The most radical technologies are those that disappear. They weave into the fabric of everyday life until they become one with it,” wrote Mark Weiser<sup>23</sup>. This is precisely the reason I chose to “retain” the trace in the final result, leaving the iPhone’s facial recognition frame visible. It serves as an artistic way of making this technology perceptible before it becomes taken

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<sup>21</sup> Evi D. Sampanikou, ed. *Audiovisual Posthumanism*. (Newcastle upon Tyne: Cambridge Scholars Publishing, 2017), 1-2.

<sup>22</sup> Francesca Ferando, *Towards a Posthumanist Methodology: A Statement* (2012), [https://www.academia.edu/1243762/TOWARDS\\_A\\_POSTHUMANIST\\_METHODODOLOGY\\_A\\_Statement](https://www.academia.edu/1243762/TOWARDS_A_POSTHUMANIST_METHODODOLOGY_A_Statement) (accessed September 5, 2024).

<sup>23</sup> Graham Meikle, *Deepfakes* (Cambridge: Polity Press, 2023), 4.

for granted, before it merges into the fabric of daily life and disappears, eluding our perception, much like electricity, “which we only notice when the power goes out.”<sup>24</sup>

Apple’s face recognition system was used not only to illustrate the AI technology’s presence in daily life and all that it entails (continuous monitoring, profiling, violation of personal data, etc.), but also for a practical purpose: selecting the film’s main characters. After uploading dozens of archive’s photos, the system identified recurring faces<sup>25</sup> and suggested tags, which I initially ignored. Gradually, it took the initiative to group frequent faces: my father, at the young age between fifteen and twenty-five years old, was the person who appeared most frequently, and the system quickly classified him into the “people” category, alongside our own contemporary photos. It also “singled out” my aunt and my mother, who were also included in the film. Finally, it auto-generated albums like “Weddings” and “Trips”, combining them with existing ones. These people and categorized events shaped the film’s core and trained the text generator.



Fig. 1. The same photograph was analyzed three times by the facial recognition system, with different individuals identified on each occasion.

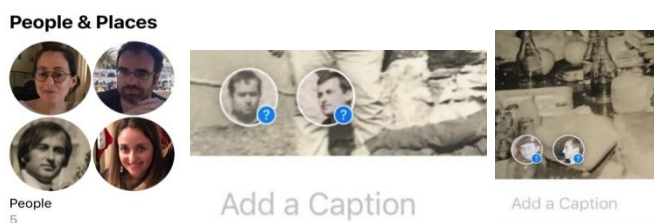


Fig. 2-4. Examples of Apple Face ID categorizing people and events and asking for tags and captions

<sup>24</sup> Meikle, *Deepfakes*, 4.

<sup>25</sup> It is perhaps worth noting an intriguing observation: each time I re-photographed the archival material, the facial recognition system identified different individuals, generating a series of variable results. This phenomenon led me to draw a (admittedly speculative) parallel with my father, whose memory, affected by gradual decline, would sometimes recognize certain individuals in photographs while failing to identify others, or, after several days, forget previously recognized faces or suddenly recall others. In this sense, the AI program appeared, from my perspective, somehow human.



Fig. 5. Example of using generative fill tool in Photoshop.

The training of the very popular chatbot, ChatGPT, which was used for the writing of the script, lasted approximately eight months. Initially, descriptions of the archive's photographs, which had been created with the help of another artificial intelligence program, Midjourney, were uploaded to it. A dialogue then began based on these descriptions, where the program was given information extracted from interviews, and was asked to connect the photograph under discussion with data it possessed regarding the prevailing conditions in Greece at the same time. After this process was repeated dozens of times, in a subsequent stage, it was asked to express opinions and hypotheses on the topics being discussed, to guess the names of individuals depicted in the photographs, or to connect people and stories from previous conversations with later ones, which it often succeeded in doing. (Notably, it rapidly recognized that my father's name is Yannis -understanding that 'Yannis' and 'my father' denote the same individual- and it independently deduced the names of my father's sisters, Maria and Eleni.)

In the final stage, the text generator was asked, as a game, to create and respond to letters I drafted based on handwritten notes and letters from the archive, in order to find its "voice" and establish a first relationship with the work's human creator. Finally, the dialogue began, extending over hundreds of pages, from which the questions and answers that constitute the film's voice-over were drawn. Subsequently, the voice-over text was uploaded to ElevenLabs' voice production program, and the film's voices were selected.

For image processing, the film utilized a range of AI programs and tools falling under the category of "narrow AI." Besides Midjourney, whose role was to provide the photographs' descriptions, the photos were processed with Photoshop's AI tools, like Generative Fill, Generative Expand, and Select and Replace. Generative Fill is a tool that allows us to add and remove content without destroying the image, achieving realistic results by following prompts. Essentially, the user selects a portion of the image they want to remove or replace and provides a written command to the program regarding the replacement content.

Generative expand, as well as the stitching together of images created with Generative Expand, formed a new, virtual space where the interaction between physical and digital reality is evident. While Generative Fill was used to guess what exists today in the place of people or structures within the landscapes of the past, Generative Expand was used to architecturally extend the space beyond the narrow aspect ratio limits of analog photography with the help of artificial intelligence.



Fig. 6. Example of using generative expand tool in photoshop

These specific tools were selected after a series of trials with different artificial intelligence programs but were deemed most suitable for processing this archive. On a theoretical level, their use aimed to provide alternative approaches for filling -visually- the gaps in the family history, which memory or the deliberate omission of events left out of the interviews of people who spoke to me, and, at other times, they helped to depict or highlight the “unspeakable.”

On a practical and artistic level, the often poor quality of the original archival images, resulting from age and inadequate preservation, combined with the low resolution of the software used in the film<sup>26</sup> and the inherent difficulty of AI programs available at the

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<sup>26</sup> The work employs the first official release of these AI tools, which had been in beta edition for some time before being launched at the end of 2023, with a resolution of 1024 pixels / generation.

time of the film's production<sup>27</sup> to accurately render certain human features (such as facial details, hands, fingers and feet) generated fragmental objects and figures that appear ghostly, reminiscent of William Hope's (1863-1933) spectral imagery. In Hope's work, figures are presented as spirits through double-exposure photography, that is partly developed in the first stage, producing the illusion of a spirit's (rather than a human's) presence.<sup>28</sup> Building on this outcome, the film creates a dialogue with early photographic and cinematic images of pioneering artists who experimented with visual representation at the time of the invention of photography in the nineteenth century. By adopting a photo-montage and collage-like methods and references, the film draws a parallel to the radical technological experimentation of the early photographic era, commenting on the integration of artificial intelligence into audiovisual works today (a pivotal moment in visual culture and artistic practice, comparable in importance to the advent of photography itself). Despite their imperfections, it is essential to document and incorporate these early AI-generated representations of human faces, objects, and other subjects into artistic practice -tracing their lineage back to the first experiments in AI imagery, such as Google's "DeepDream" in 2014 and the developments that followed. These images are not merely technical artifacts; they mark and actively shape the emergent visual, and social epoch.



Fig. 7. Spirit album, 1920, W.Hope

<sup>27</sup> The film was produced between 2023 and 2024

<sup>28</sup> See «Spirit Album» (1920).



Fig. 8: Still image for the film “Who was here?” (2025)

#### **IV. Conclusions. We can, therefore, speak of artistic co-creation with the machine? And will AI change the way we remember?**

Answering the question “Is there an AI Aesthetics?”, Lev Manovich observes that when making images with AI tools, sometimes he sees “interior spaces filled with endless objects... delicate, fragile, barely visible patterns, some two-dimensional and some three-dimensional... these are fragments, but of what?” Fragments reminiscent of vessels and statues from an ancient civilization one might encounter in a museum, except that they are generated by artificial intelligence and thus possess a different ontology “because AI extracts patterns from hundreds of millions of images and distribute them across trillions of connections”.<sup>29</sup>

While processing the film’s images, we did not always use prompts; instead, from time to time we allowed the program to improvise and propose its own versions. A particularly illustrative instance of this approach is found in the final shot: for the creation of this particular image, the program was given the bust of Yannis (after it had been cropped from the overall image) and was asked to “fill” the frame, producing an impressive result.<sup>30</sup>

The fact that it resembles a collage of images and references is largely due to it literally being a collage. This is because when you upload a photo to the program and ask it to complete the image (the gaps in the landscape, the frame, the missing visual information), it draws information from the world wide web, essentially guessing, based on all the other elements in the image, the best way it could complete it. Having access to hundreds of millions of images from human cultural history, the program draws upon the patterns (or objects) it deems most suitable.

<sup>29</sup> Lev Manovich, “Is There an AI Aesthetics?” *Spike Art Magazine* 77 (2023): 49.

<sup>30</sup> This is the image with the greatest “contribution” of artificial intelligence in the film.



Fig. 9. Film still “Who was here?” - last shot

Their fragmentary nature is due to the very nature of information transmission via computers, as well as how generative AI works: as early as 1960, Paul Baran, inventing the Future Internet Protocol, laid the foundations for the operation of information transmission via computers and, by extension, the way generative AI functions<sup>31</sup>: in order to keep it as safe as possible from a nuclear attack, information transmission was “broken down” and transferred in smaller pieces (packets). The most well-known generative AI programs (Midjourney, DALL-E, ChatGPT) operate in a similar way, breaking down images into pixels and words into smaller segments (called “tokens”), which they recombine and re-synthesize to create new “synthetic” images (or text, or music). This function may explain the distinctive and increasingly recognizable “AI aesthetic”.

On the more practical question that extends the debate on machine creativity (namely, whether artificial intelligence might replace human creativity) it is crucial to recognize that, at least at the time of this research, the AI tools and programs available, which have enabled the production of high-quality AI-generated art, operate primarily through natural language prompts. The quality of image processing outcomes depends heavily on the specificity and precision of these prompts. As Toon observes, “prompt engineering is rapidly evolving into an art form in itself.<sup>32</sup>” He states that AI will not replace human creativity; rather, it will facilitate the emergence of new artistic forms and it will enhance productivity, enabling the creation of larger volumes of content at greater speed. Furthermore, it is very possible that these tools will democratize access to creative production, allowing more people to engage with and modify new forms of media, such as collaboratively created video games, which can be shared and adapted across social platforms.<sup>33</sup>

Regarding the image and the significance of photographs (and audiovisual works more broadly) as reliable historical sources, it is impossible to ignore that we live in an era in which image manipulation, or the alteration of images through filters, additions, or

<sup>31</sup> Manovich, “Is There an AI Aesthetics?”, 49.

<sup>32</sup> Nigel Toon, *How AI Thinks: How We Built It, How It Can Help Us, and How We Can Control It* (London: Penguin Random House UK, 2024), 72.

<sup>33</sup> Toon, *How AI Thinks: How We Built It, How It Can Help Us, and How We Can Control It*, 73.

removals of elements, has become part of everyday experience. When Apple launched the first iPhone with a TrueDepth Camera in 2017, discussions focused extensively on the applications of artificial intelligence and augmented reality, explaining in detail how these technologies functioned. In contrast, little attention was paid to the device's original function as a telephone, "despite the word 'Phone' appearing in the product name."<sup>34</sup> Today, we rarely perceive smartphones as telephones; instead, they are multifunctional devices containing a range of applications that facilitate daily life, or cameras whose outputs can be edited instantly and uploaded online.

In the video "Will AI Images Change Our Memories?", Evan Puschak observes that AI programs and tools (including Photoshop's Generative Fill and Generative Expand) have, since 2023, vastly expanded capabilities. These tools perform far more than simple color correction or removal of elements from a frame. By extending the boundaries of a frame in all directions, they can place subjects in entirely different landscapes from those originally captured, thereby altering the historical moment and effectively making "reality what we want it to be."<sup>35</sup>

Writing on reality and photography Susan Sontag argues that "A photograph passes for incontrovertible proof that a given thing happened."<sup>36</sup> Indeed, the dominant perception of photography was, until recently, and perhaps still is, that it's a way to "imprison" an accurate representation of the world, a way to stop time by capturing it in images that we can refer back to at any given moment, to see how we were or what happened in the past. However, with the increasingly widespread culture of social media and camera phones, photography is now starting to have less to do with the past and more to do with the present. It's becoming a tool for presenting ourselves and our daily lives, an image of which we can control and share with others in a way that's closer to how we feel, rather than what actually happened.

Humans create narratives, Evan Puschak argues, shaping and selecting memories to fit their stories. This natural process helps preserve a coherent self. But were photographs ever truly objective? Susan Sontag notes that while cameras seem to capture reality, photographs are interpretations, just like paintings or drawings.

Photography, like memory, reconstructs moments. Just as archival materials are a curated collection by whoever saved them, so are photos and films. They are shaped by the one who records them. Their form depends on the era and its technology, reflecting today's shift into a posthuman, inclusive moment in history.

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<sup>34</sup> Meikle, *Deepfakes*, 22.

<sup>35</sup> Evan Puschak, *Will AI Images Change Our Memories?* (Nerdwriter1, YouTube video 2023) [www.youtube.com/watch?v=RP\\_-8gzd5NY](https://www.youtube.com/watch?v=RP_-8gzd5NY) (accessed August 25, 2024).

<sup>36</sup> Susan Sontag *On Photography* (Athens: Editions of the magazine *Photographos*, 1993), 17.

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# FASHION & WELL-BEING

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## **Abstract**

*This paper examines the interaction between the well-being approach and posthuman theory within the context of Fashion. It shows the relation between posthumanism, fashion and technology, and the challenges of the contemporary way of living. The analysis focuses on consumerism and the shift to more conscious consumption and eco-friendly practices, presenting a future where fashion supports well-being. Within the posthuman analysis, 'well-being' extends beyond the human to include coexistence with the environment and 'other than human' life. The rise of the digital/technology in fashion shows new ways that challenge our values and ideas towards the world, urging us for sustainable ethical and alternatives.*

## **Keywords**

*Wellbeing; fashion; posthumanism; body; sustainability; technology.*

## **I. Introduction**

Our 'healthiness' within this world, and concepts of good living are central in the discussion around posthuman theory and philosophy. Our contemporary reality is surrounded by technology. We and our world are changing through the power of technology. Whether for good or bad, it largely defines us. Thomas S. J. Smith (2019, 1) writes,

“For many, ‘sustainable development’ is seen as something of a dirty phrase. It can be obfuscatory and vague, often used by those interested in ‘sustaining’ ecological modernisation and propping up a status quo which, through ecological devastation and social polarisation, is radically undermining its own existence.”

Posthumanism seeks to balance life and technology, acknowledging the influence of technology, and showing a way to move forward together, harmonically. Within posthumanism, we understand that we are just part of a bigger world. Everything is interconnected; boundaries and limitations, differences, are rejected. Çağdaş Dedeoğlu and Nikoleta Zampaki (2022) specifically define posthumanism a concept “to

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reconceptualize our relationship with the environment, challenging humanistic, anthropocentric, and dualistic views and promoting sustainability.”

## **II. Well-being Meaning and the Turn to Posthumanism**

Being ‘healthy’ equates with being happy — or used to, if only we think of the much more complex thinking and emotions surrounding contemporary human life. In past centuries life had been less complicated, whereas significant changes can be traced back in the industrial revolution, the rise of the machine and the gradual turn in human thinking and understanding life.

Well-being is about existing and coexisting with others — not only humans but other kinds of life and the natural world. The introduction of technology and sciences has distanced us from the simple virtues of existence and brought us closer and dependent on new advancements and industrial evolution. The concept of well-being can be read either as a humanist product, or on the contrary, as a meeting point between the natural and the technological world. Discussing well-being can sound deeply anthropocentric in some ways, as has to do with human and consciousness. It is about understanding what it is to evolve, change and exist, which are classically virtues attributed to human beings. However, with the incessant rise in technology, humanity is no longer in complete charge of the world surrounding it.

Posthuman analysis comes forth as a lynchpin between humanity’s vanity and obsessions on supremacy, and the turn towards new ideas about existence and co-existence in a world that it does not belong exclusively to humans. Within posthumanism we can reimagine and reestablish our view towards body and dressing relativity with technology and engage with new ways to discuss around this current topic. Researching new materials, fabrics, and various means to create clothing will eventually bring us closer to sustainability, which is in fact, the core of the ‘well-being’ approach. Like Sharifah Shafie and others (2021) note, “the continued use of natural resources such as the use of animal fur, cotton, and leather may also result in the extinction of animals and might lead to the failure in achieving sustainable development goal” (Wai Yee et al. 2016).

The ‘turn to the digital’ will bring new perspectives into posthuman theory. The main aspects of analysis concern the questions; How will clothing be in the (near) future? And how will technology answer this? What will ‘digital dressing’ mean? Will the boundaries between the human and the artificial be breached? Digital life has opened horizons and complicated human life. At the same time, humans became increasingly dependent on technology and the new opportunities that followed. The great advancements in technology showed the way to more ‘digital’ development and the introduction of technology in everyday life.

In this context, there has been one aspect of life that was largely affected by these changes; the fashion industry. But what would we consider ‘well-being in fashion’?

## **III. The Question of Fashion Well-being**

Fashion has the power to cover the body, but in fact, it is about dressing and adorning it. That alone creates a special bond between the body and clothing and forms a relationship between the garment and the wearer. Through dressing, we communicate

with the world surrounding us, and that is also a fundamental question in the ‘posthuman well-being’s’ discourse. Wencke Gwozdz and others write in “The relationship between fashion and style orientation and well-being” (2017), “Shopping for clothing can, for example, elicit pleasure, hedonic enjoyment and satisfy self-expressive needs... Shopping has also been associated with excitement and delight.”

A. *“Study on Shaping & Nature: Seashell Dresses” (2024)*

This project explores the interrelationship between nature, living organisms, and the human body — conceptualized through the incorporation of seashells, tortoiseshells, and calico scallops painted in the dresses — and becoming one with the body, taking new forms and shapes. The seashells and shells are shaped and reshaped, becoming part of the body, illustrating a deeper dialogue between the two (Figures 1, 2).



Figures 1 & 2. “Study on shaping & nature; seashell dresses”, 2024

With this project, I reflect on bodies interacting with nature and what lies beyond. My study underlines the power and transformative power of nature intertwining with body. They coexist, one taking the shape of the other and moving to hundreds of different body representations from top to bottom. Well-being, either ‘digital’ or not, comes to answer and plays a decisive role in understanding the relationship between humans and the world. With the advancement of technology, there are more ways to address the concept of ‘well-being and find future possibilities to reshape fashion and the dressed body. Therefore, this project comes as an interface to discuss, as well, how well-being and new philosophical and theoretical frameworks can be inserted into the analysis of new types of dressing, bodies interacting with garments and their place in the world.

There are the natural, virtual, technological, posthuman, cryonised and many different kinds of bodies and embodiments— but they should all respect nature because they are all part of it in one way or another. The body, dressed or not, has countless possibilities and constantly changes. Since contemporary ideas on dressing are inspired by the past, we also need to reconfigure its connection to nature. New possibilities of dressing also become a surface to discuss posthuman metahuman and transhuman ideals. In fact, fashion can be found in all these theories; it can be transhuman if only we think of it as highly experimental and transformative, it can be posthuman and metahuman as they both represent the need to rethink pre-established and strict frameworks that restrict movement, shaping, and underline new ways of understanding fashion through exploring its boundless possibilities.

### *B. Sputniko, Posthuman Fashion and Well-being*

Our societies are determined by our artistic representations and our cultural richness. They are maintained, prospered and reshaped by our continued artistic activities, reimagining our world and contemporary realities. One of the most prominent artists of our time, who radically proposes fresh ideas about life, the relation between technology and sciences, and sustainability issues, is the Korean artist Sputniko. With projects like ‘Sushiborg Yakari’ (2010), ‘Bionic’ (2017), ‘Tranceflora Dress’ (2008), and ‘Nanohana Heels’ (2002), she challenges all limits and boundaries of life, living and dead, animate and inanimate, and introduces new ideas about reconnection to nature, understanding sciences and future technologies, and reconfiguring identities, in a world that is constantly changing. Sputniko becomes a significant case study to reflect on the intersection between technology and ‘well-being’.

Sputniko’s artistic creations are deeply critical and represent a posthuman approach fashion, challenging anthropocentrism and all the concepts that have been attributed to it — overconsumption, human supremacy, individualism etc. In fact, her work intersects biology and wearable technology, reimagining a possible future for fashion. In her ‘Tranceflora Dress’ Sputniko challenges traditional choices of textiles and fabrics, using bioengineered jellyfish and coral to create the ‘fluorescent silk’ (Sputniko). Sputniko’s artworks show the way to new fashion ethics and strongly reimagine fashion as a space for creation that answers to the challenges of our time and urges ecological awareness. This closely aligns with a posthuman understanding of well-being, where the human harmonically coexists with the environment.

What we need to emphasize is the relationship between our posthuman world and the acceptance and reinterpretation of the ‘other’, taking different forms and bringing our senses and experiences to question, while bringing forth new possibilities of existence and coexistence. Sputniko’s artistic innovation with significant impact on life and ecology, raises fundamental questions and issues of consciousness towards artificial intelligence practices and technological advancements, as well as makes us know better and understand humanity’s unique and complicated nature with the world.

We know that fashion offers a space to experiment, marvel and feel good. Dressing has also been closely related with concepts of materialism, individuality and overall anthropocentric views, as it concentrates on the human’s/individual’s image. As S. Suganya and others (2024) argue, “In today’s society, particular emphasis is placed on

material items and the construction of one's image... possessions can serve as a symbol of self-definition and an extension of the self. An individual can establish, maintain, and alter their image through clothing as a self-presentation strategy to conform to perceived social norms."

As Gwozdz et al. (2017) explain, "The need for clothing may also be psychological as clothing can function as a form of non-verbal communication to others that sends important social signals. The clothes a person wears and how it is worn may provide a signal to others about his or her identity, tastes and individuality..."

Fashion has overflowed production and become a significant part of our consumerist everyday life. Fashion industry has been one of the most profitable businesses of the 20th and 21st century. Tehmeena Shafqat and others (2023) note that, "Consumption has been characterized as one of the critical trends of the 21st century. Various product choices are available for consumers, whereas sales campaigns are triggering forces behind regular product purchases". They also observe that, on the other hand, there are those who oppose consumer and materialist habits. "Consumers have started to moderate their consumption levels. They started to prefer a simpler life voluntarily to reduce material possessions and stress, focusing more on self-determination and personal growth to achieve positive emotional well-being." And this is where the discussion around the urgency of a posthumanist 'well-being' perspective is on the right track.

### *C. Our Plastic Selves – Wasteland: The Body or the Garment?*

"Each year, around 37 million animals in the European Union are still raised and killed solely for their fur" (Humane Society International, n.d.).

Big clothing companies that focus on producing large quantities of garments to meet consumer demand have led to the production of environmentally harmful emissions and materials. For example, polyester, a petroleum-based fabric, is widely used by colossal fast fashion brands, like Zara. "The adoption of new materials and economic models to reduce the impacts of clothing production and use. We discuss these emergent technologies in the wider historical setting of the Anthropocene" ... To be concerned about the future is to be preoccupied by environmental change" (Brooks et al. 2017). Berhane (2024) writes "Fashion and textile production are moving at a faster pace than ever before. Trends that once lasted for five to ten years now last only months to a few weeks. To keep up with these ephemeral trends, fast fashion brands are emphasizing quick production of clothing. Garment production has doubled globally since 2000, and the average consumer buys 60% more clothing than they did seventeen years ago while keeping their clothing for half as long as they did before 2000." The point is to change this course we have to change our habits and tame our consumer desires. We need to understand that our planet has had enough already. Our world slowly (or quite quickly) turns into a huge landfill and there will soon be no way back. New materials and international economic models can make a difference -if properly executed- and reduce the catastrophic effects of mass clothing production. So, let's choose fashion more responsibly then, shall we?

## IV. Conclusion

The production of more environmentally friendly fabrics, and the use of ecological materials also marks a major change in the way we choose to dress, but it also shows new paths into a more technologically driven fashion that is also leading to the ‘well-being’ discourse in the fashion industry. As Catriona Tassell and others (2021) emphasize, “The detrimental environmental impacts of the fashion industry are far reaching, including carbon emissions, water consumption, air and water pollution, land use and waste production.” Moving towards this direction means adopting ecological methods that contribute to environmental change not only for our sake but for the rest of the world. Jihad Mohammad and other highlight that, Gen Z is doing well in buying pre-owned clothes and purchase less, “Pre-loved fashion items, commonly referred to as second-hand or thrifted clothing, have experienced notable popularity across all generations, especially among Generation Z.”

Thus, well-being in fashion is related to dressing consciously, with full knowledge of our footprint on the planet and other living beings. ‘Well-being’ would not solely be about humans feel content and satisfied but contribute to the prosperity of the world.

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## **PART IV**

**DIGITAL WELLBEING IN THE NEW ERA  
OF DIGITAL CONVERGENCE: TOWARDS A  
CRITICAL THEORY OF TECHNOLOGY AND  
A POSTHUMANIST ONTOLOGY**

# BEYOND USE AND DESIGN: REFRAMING DIGITAL WELLBEING IN A RELATIONAL ONTOLOGY

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## **Abstract**

*This paper critically examines the conceptual evolution of Digital Wellbeing (DWB) from its early metaphorical reference to a salutogenic orientation toward its dominant framing within risk-oriented and regulatory discourses. We argue that contemporary approaches to DWB remain grounded in persistent dualisms between human and technology, real and virtual, and use and design, as well as in the myth of technological neutrality. Drawing on critical theory of technology and on relational, posthumanist, and new materialist ontologies, the paper challenges these assumptions and reconceptualises digital wellbeing as a relational phenomenon emerging within sociomaterial assemblages, rather than as an individual psychological state or a matter of correct use.*

## **Keywords**

*Digital Wellbeing; Relational Ontology; Sociomateriality; Posthumanism; Agential Realism; Critical Theory of Technology; Technological Neutrality; Dualism.*

## **I. Introduction**

Our prior systematic review<sup>1</sup> indicates that the term *Digital Wellbeing* (DWB) appears for the first time in the literature in 2012, in the article “*Children and Digital Wellbeing in Australia: Online regulation, conduct and competence*”<sup>2</sup>. In that text, the authors present DWB as a *more salutogenic approach* alternative to “protectionist models of cybersafety”, proposing it as a way to support children’s empowerment and their development as “active, ethical and critical participants in digital culture.”<sup>3</sup>

A salutogenic approach derives from *salutogenesis*, which means the “origin of health”—a term Antonovsky coined by combining the Latin *salus* and the ancient Greek

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<sup>1</sup> Paraskevi-Chrysovalantou Zangogianni and Evangelia Kavakli, “From Digital Era to Digital Wellbeing Era,” *SHS Web of Conferences* 210 (2025): 03004.

<sup>2</sup> Bjorn Nansen, Kabita Chakraborty, Lisa Gibbs, Colin MacDougall, and Frank Vetere, “Children and Digital Wellbeing in Australia: Online Regulation, Conduct and Competence,” *Journal of Children and Media* 6 (2012): 237–254.

<sup>3</sup> Nansen et al., “Children and Digital Wellbeing in Australia,” 249.

*genesis*.<sup>4</sup> Salutogenesis “refers to a scholarly orientation focusing attention on the study of the origins of health and assets for health, contra [pathogenesis] the origins of disease and risk factors”.<sup>5</sup> Instead of focusing on risk factors, it emphasises “salutary” factors, and moves beyond the dualisms “well/diseased” and “health/illness” introducing “a continuum model, which sees each of us, at a given point in time, somewhere along a “healthy/dis-ease continuum” highlighting that health is not a fixed state but a dynamic position along a spectrum.<sup>6</sup>

Importantly, a salutogenic approach is not limited to individual bodies or individual pathologies, and it can also be applied at the level of communities and collectivities, that is, groups of people who share certain social circumstances, life conditions or challenges, and whose wellbeing cannot be understood by looking only at a single diagnosis or risk category. For Antonovsky, this shift is both moral—because it resists reducing a person to a diagnosis—and scientific, because meaningful health promotion must engage with the full complexity of people’s lives.<sup>7</sup>

In our reading, approaching DWB from a salutogenic perspective shifts attention beyond simple protection from digital risks, and instead opens a broader set of possibilities for how wellbeing is shaped in and through digital environments. In the original article<sup>8</sup>, this reference to a salutogenic perspective can be understood primarily as a metaphorical point of orientation rather than an engagement with Antonovsky’s theory of salutogenesis. However, this salutogenic orientation was not sustained in later uses of the term.

As the concept of DWB evolved in the years after 2015, and particularly during and after the COVID-19 pandemic, its meaning became broader and more diffuse.<sup>9</sup> DWB gradually turned into an umbrella concept encompassing some studies that foreground the benefits of digital technologies, alongside many others that emphasise their risks and negative outcomes, as well as work attempting to negotiate a balance between the two by appealing either to user autonomy and self-regulation or to ethical and responsible technology design.<sup>10</sup>

In dominant strands of research and broader societal debate, DWB is thus primarily associated with screen time<sup>11</sup>, social media use<sup>12</sup>, digital addiction<sup>13</sup>, and mental health concerns, moving it overall closer to a problem-oriented, risk-focused perspective rather

<sup>4</sup> Johnathan Hewis, “A Salutogenic Approach: Changing the Paradigm,” *Journal of Medical Imaging and Radiation Sciences* 54, no. 2S (June 2023): S17–S21; Aaron Antonovsky, “The Salutogenic Model as a Theory to Guide Health Promotion,” *Health Promotion International* 11, no. 1 (March 1996): 11–18.

<sup>5</sup> Monika B. Mittelmark and Georg F. Bauer, “Salutogenesis as a Theory, as an Orientation and as the Sense of Coherence,” in *The Handbook of Salutogenesis*, ed. Monika B. Mittelmark et al. (Cham: Springer, 2022).

<sup>6</sup> Antonovsky, “Salutogenic Model,” 14.

<sup>7</sup> *Ibidem*.

<sup>8</sup> Nansen et al., “Children and Digital Wellbeing in Australia.”

<sup>9</sup> Zangogianni and Kavakli, “From Digital Era to Digital Wellbeing Era.”

<sup>10</sup> *Ibidem*.

<sup>11</sup> For an indicative example, see Clarissa A. Dekker and Susanne E. Baumgartner, “Is Life Brighter When Your Phone Is Not? The Efficacy of a Grayscale Smartphone Intervention Addressing Digital Well-Being,” *Mobile Media & Communication* 12, no. 3 (2024): 688–708.

<sup>12</sup> For an indicative example, see Mariek M. P. Vanden Abeele, Annabell Halfmann, and Edmund W. J. Lee, “Drug, Demon, or Donut? Theorizing the Relationship between Social Media Use, Digital Well-Being and Digital Disconnection,” *Current Opinion in Psychology* 45 (2022): 101295.

<sup>13</sup> For an indicative example, see Marvin Dadischeck, “Conceptualizing Digital Well-Being and Technology Addiction in I-O Psychology,” *Industrial and Organizational Psychology* 14, no. 3 (2021): 401–403.

than a salutogenic one. Within this broader field of discussion, technologies and practices such as screen-time monitoring apps<sup>14</sup>, digital detox interventions<sup>15</sup>, and even digital wellbeing tourism<sup>16</sup> are often framed as responses to “digital overload”, as reflected across a broad body of research, of which only a few indicative examples are cited here.<sup>17</sup>

Despite their apparent heterogeneity, these approaches rest on a shared ontological premise: a modernist dualism that presupposes human and technology as separate, pre-given entities, positioned in a relation of externality, and that figures wellbeing as the outcome of the “correct” or “incorrect” uses of technology. Within this framework, the digital is alternately constructed as a threat to “real” life or as a means of its enhancement, while the very distinction between the two remains fundamentally uninterrogated.

## II. Digital Wellbeing and Dualisms

The various interpretations of the term DWB, and the directions its research applications have taken, reflect a set of widely shared assumptions. The first concerns the conceptual separation of the real and the virtual, nature and technology, the human and the technological, as if these were clearly bounded and autonomous domains—and, by extension, distinct spatiotemporalities—between which subjects can move. The second widely held assumption is that technology is neutral. We will examine these assumptions in detail below.

### A. The “digital” and the “real”: human–technology dualism

The very existence of the adjective “digital” separates “digital wellbeing” from “wellbeing” as such, thereby introducing a distinction between a form of wellbeing associated with the “real” world and another that is experienced in the virtual one. Dominant discourse frames digital technology as an external environment—a separate domain that we can “enter” and from which we can also “exit.” Consequently, digital life is often presented as parallel or secondary to “real” life, which is assumed to be “lived” primarily off-screen.

This dualistic conception functions as the ontological backdrop of both protective and balancing approaches to DWB. When wellbeing is understood as the outcome of the “balanced use” of technology, it presupposes a subject that pre-exists technological mediation, able to regulate its relationship with an external technical object. The notion of addiction, the rhetoric of excess, and even the practices of “digital detox” all reinforce

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<sup>14</sup> For an indicative example, see Alberto Monge Roffarello and Luigi De Russis, “The Race Towards Digital Wellbeing: Issues and Opportunities,” in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)* (New York: Association for Computing Machinery, 2019), Paper 386, 1–14.

<sup>15</sup> For an indicative example, see Thomas Radtke, Tobias Apel, Karina Schenkel, Jonas Keller, and Eva von Lindern, “Digital Detox: An Effective Solution in the Smartphone Era? A Systematic Literature Review,” *Mobile Media & Communication* 10, no. 2 (2022): 190–215.

<sup>16</sup> For an indicative example, see Francesco Debasa, “Digital Well-Being Tourism in the Fourth Industrial Revolution,” *Journal of Tourism, Sustainability and Well-Being* 10, no. 3 (2022): 227–237.

<sup>17</sup> For an indicative example, see Reem S. Al-Mansoori, Dena Al-Thani, and Raian Ali, “Designing for Digital Wellbeing: From Theory to Practice, a Scoping Review,” *Human Behavior and Emerging Technologies* (2023): Article 9924029.

this image of an autonomous self called upon to restore its balance in the face of an invasive digital world.

In today's digital condition, however, this distinction is increasingly difficult to sustain. Within the infosphere<sup>18</sup> of social media, smart devices, algorithmic systems, and the Internet of Things, technology no longer functions merely as a tool that we switch on and off at will. Instead, it has become an integral part of everyday experience. Communication, friendship, intimate relationships, learning, mobility, and even bodily self-monitoring now take shape through dense networks of digital mediation. The digital does not simply add itself to the physical world; it permeates, reshapes, and runs through it.

This contemporary condition resonates with long-standing anthropological and philosophical traditions that challenge the view of technology as an external addition to human nature. From the Promethean myth of fire<sup>19</sup> to contemporary philosophies of technicity, the entanglement of the human with technical mediation has been articulated as a constitutive element of human ontology. In his anthropogenetic analysis, André Leroi-Gourhan<sup>20</sup> argues that technics is not a secondary cultural supplement added to an already constituted human subject. Rather, the human emerges through a long process of biological, gestural, and technical co-evolution in which tool use is structurally implicated in the formation of posture, perception, memory, and symbolic activity. On this basis, he explicitly rejects the idea of a pre-technological human who subsequently invents tools as external instruments<sup>21</sup>. The tool is not simply a product of the human; it participates in the very process through which the human becomes human. Building on Leroi-Gourhan's account, Bernard Stiegler<sup>22</sup> radicalizes this insight by conceptualising technicity as *epiphylogenesis*, that is, a regime of exteriorized (tertiary) memory irreducible to biological inheritance, through which knowledge, temporality, and human historicity are constituted. From this perspective, technology is not merely an instrument for survival or domination over nature, but a constitutive condition of the human mode of being.

In his explicit reading of Leroi-Gourhan, Stiegler writes, “[.] it is the tool, that is, *technē*, that invents the human, not the human who invents the technical. Or again: the human invents himself in the technical by inventing the tool—by becoming exteriorized techno-logically. But here the human is the interior: there is no exteriorization that does not point to a movement from interior to exterior. Nevertheless, the interior is inverted in this movement; it can therefore not precede it. Interior and exterior are consequently constituted in a movement that invents both one and the other: a moment in which they invent each other respectively, as if there

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<sup>18</sup> Luciano Floridi, *The Fourth Revolution: How the Infosphere Is Reshaping Human Reality* (Oxford: Oxford University Press, 2016).

<sup>19</sup> Aeschylus, *Prometheus Bound*, trans. Herbert Weir Smyth (Cambridge, MA: Harvard University Press, 2009), 436–506.

<sup>20</sup> André Leroi-Gourhan, *Gesture and Speech*, trans. Anna Boström (Cambridge, MA: MIT Press, 1993).

<sup>21</sup> “The discovery of Zinjanthropus has taught us that technicity is present even in the most rudimentary of human forms,” Leroi-Gourhan, *Gesture and Speech*, 83.

<sup>22</sup> Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford, CA: Stanford University Press, 1998).

were a technological maieutic of what is called humanity. The interior and the exterior are the same thing, the inside is the outside, since man (the interior) is essentially defined by the tool (the exterior).”<sup>23</sup>

Nevertheless, much of the dominant discourse on DWB continues to reproduce the old dualism: the human here, technology there; “real life” here, “digital life” there. This distinction makes possible narratives of alienation, according to which technology diverts the human from a supposedly “natural” state, undermines “authentic” relationships, and erodes the “inner self”. Within this framework, DWB becomes a matter of a nostalgic return to a “pure” natural world, to a presumed pre-technological balance.<sup>24</sup>

The persistence of the human–technology dualism has direct consequences for how DWB is understood. As long as technology is treated as an external environment, wellbeing is approached primarily in terms of regulating one’s exposure to that environment. Attention thus shifts to screen time, intensity of engagement, self-discipline, and individual psychological resilience. By contrast, the socio-technical conditions that shape experience remain largely in the background.

Questioning this basic assumption is a prerequisite for a different understanding of DWB. If humans and technology are co-constituted, then wellbeing cannot be located either in an inner psychological space or in an external technical environment. Rather, it emerges through the relations, practices, and material arrangements that make up contemporary socio-technical ecosystems. In this sense, dismantling the human/technology dualism opens the way for a relational, non-anthropocentric understanding of DWB.

### *B. The myth of technological neutrality or the good/bad technology use dichotomy*

The second widely shared assumption that shapes the dimensions and approaches through which the term DWB is articulated in public discourse and research is the idea that technology is neutral, and that whether it is “good” or “bad” depends solely on how it is used—a view often presented as a self-evident expression of common sense. However, this view rests on a deep ontological and ethical assumption, one that systematically shifts responsibility away from technological arrangements and their socio-economic contexts and places it on the individual alone.

The idea of technological neutrality has taken different forms over time. In its determinist version, technology is described as a neutral, rationally designed tool that “employs advancing knowledge of the natural world to serve universal features of human nature such as basic needs and faculties”<sup>25</sup>. Technology thus appears as an autonomous force of progress, to which “we must adapt, seeing it as the most important expression of humanity,” leaving technical systems to evolve according to their own internal logic.<sup>26</sup>

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<sup>23</sup> Stiegler, *Technics and Time*, 1, 141–142.

<sup>24</sup> Helene Ahlborg, Ilse Ruiz-Mercado, Sverker Molander, and Omar Masera, “Bringing Technology into Social-Ecological Systems Research: Motivations for a Socio-Technical-Ecological Systems Approach,” *Sustainability* 11, no. 7 (2019): Article 2009.

<sup>25</sup> Andrew Feenberg, “What Is Philosophy of Technology?” lecture at Komaba Campus, University of Tokyo, June 2003, 6; also published in Greek as *Philosophy of Technology*, trans. and ed. Haralambos Kokkinos (Athens: Ropi, 2023).

<sup>26</sup> Feenberg, “What Is Philosophy of Technology?” 6.

In its instrumental version, technology is seen as a passive tool that serves pre-existing human purposes. Means and ends are treated as separate, and artifacts are therefore considered to have no built-in direction of use or value. Using the familiar slogan “guns don’t kill people; people kill people,” Feenberg illustrates this way of thinking.<sup>27</sup>

Feenberg states: “Technology in this scheme of things encounters nature as raw materials, not as a world that emerges out of itself, a *physis*, but rather as stuff awaiting transformation into whatever we desire. This world is understood mechanistically not teleologically. It is there to be controlled and used without any inner purpose. The West has made enormous technical advances on the basis of this understanding of reality. Nothing restrains us in our exploitation of the world. Everything is exposed to an analytic intelligence that decomposes it into usable parts.”<sup>28</sup>

This instrumentalist view places responsibility almost entirely on human users while underestimating the role of technological artifacts in shaping action and reconfiguring the world. It rests on a modern image of a stable, autonomous subject who is imagined as vulnerable to misuse, yet at the same time capable of mastering nature through technological power.

In the substantivist version, found mainly in philosophical and existential approaches to technological modernity, technology is no longer seen as a simple tool but as a force that shapes the whole way we live. It comes to frame human existence itself and seems to limit the very space of freedom and self-determination considered central to the modern subject. Heidegger’s well-known remark that “only a god can still save us”<sup>29</sup> expresses this deep sense of anxiety about a world increasingly dominated by technological rationality. Although pessimistic, this position marks an important shift, since agency is now partly recognized as operating within technological artifacts themselves, rather than being located exclusively in human subjects.

These philosophical approaches, which have shaped our attitudes toward technology and are grounded in a misrecognition of our ontological entanglement with it, have contributed to a predominantly negative stance toward technology and have fuelled anxieties and forms of scepticism that influence how DWB is approached both in academic discourse and in the public sphere, as well as in people’s everyday perceptions.

### *C. The good/bad technology distinction in design: the user/designer–engineer divide*

By contrast, an alternative perspective is offered by critical theory of technology, most systematically articulated by Feenberg. This approach explicitly rejects the thesis of technological neutrality, arguing that technologies embody values, interests, hierarchies, and relations of power. The design of artifacts is never purely technical, but it is mediated by economic imperatives, political strategies, and cultural norms.

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<sup>27</sup> Ibidem, 5.

<sup>28</sup> Ibidem.

<sup>29</sup> Andrew Feenberg, “What Is Philosophy of Technology?,” 6, citing Martin Heidegger’s *Der Spiegel* interview.

Feenberg argues that it is possible to “tame” technology if we devise appropriate institutions for the exercise of human control over it and adopt more democratic processes of design and development.<sup>30</sup> From this perspective, technology is neither neutral nor inevitable, but a contested socio-technical field that remains, in principle, open to democratic transformation.

The contribution of critical theory is decisive in that it shifts the focus of analysis from the question of “proper use” to that of design itself. Within this framework, contemporary approaches such as value-sensitive design<sup>31</sup>, ethical design<sup>32</sup>, and wellbeing-friendly-design<sup>33</sup> have emerged, along with proposals for evaluating or “labeling” technologies according to their anticipated effects on users’ wellbeing<sup>34</sup>. These approaches draw primarily on positive design<sup>35</sup> and positive psychology, focusing mainly on user experiences and emotions, while scales<sup>36</sup> and measurements<sup>37</sup> attempt to categorize and standardize human experience. At the same time, there are efforts to approach design and information systems from a systemic perspective, taking into account not only the happiness and health of individuals but also those of societies as a whole. This has led to the emergence of new concepts such as *sustainable co-well-being*, *sustainable well-being*, and *communal well-being*.<sup>38</sup>

These approaches shift responsibility from users to engineers and designers, while some scholars even call for a stance of “No Design,” arguing that designers have a duty to halt projects when technologies are harmful to users by design.<sup>39</sup>

Nevertheless, despite their critical orientation, these approaches largely remain within an anthropocentric and dualistic ontological horizon, in which the human subject continues to be conceived as the primary agent who regulates, controls, or democratizes technology. When analysis remains confined to the level of “good” or “bad” design, it

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<sup>30</sup> Andrew Feenberg, “What Is Philosophy of Technology?,” 9.

<sup>31</sup> Thomas Winkler and Sarah Spiekermann, “Twenty Years of Value Sensitive Design: A Review of Methodological Practices in VSD Projects,” *Ethics and Information Technology* 23 (2021): 17–21.

<sup>32</sup> Francesco Longo, Antonio Padovano, and Steven Umbrello, “Value-Oriented and Ethical Technology Engineering in Industry 5.0: A Human-Centric Perspective for the Design of the Factory of the Future,” *Applied Sciences* 10, no. 12 (2020): Article 4182.

<sup>33</sup> Matteo Fasoli, “The Overuse of Digital Technologies: Human Weaknesses, Design Strategies and Ethical Concerns,” *Philosophy & Technology* 34 (2021): 1409–1427.

<sup>34</sup> Al-Mansoori et al., “Designing for Digital Wellbeing,” 18.

<sup>35</sup> Pieter Desmet and Anna E. Pohlmeier, “Positive Design: An Introduction to Design for Subjective Well-Being,” *International Journal of Design* 7, no. 3 (2013): 5–19.

<sup>36</sup> For indicative examples, see V. B. Arslankara, A. Demir, Ö. Öztaş, and E. Usta, “Digital Well-Being Scale Validity and Reliability Study,” *Journal of Teacher Education and Lifelong Learning* 4, no. 2 (2022): 263–274; Jain Mathew, Sridevi Nair, Roseline Gomes, Ankita Mulasi, and Preksha Yadav, “Design and Validation of the Digital Well-Being Scale,” *Ricerche di Pedagogia e Didattica: Journal of Theories and Research in Education* 18, no. 1 (2023): 239–251.

<sup>37</sup> For indicative examples, see Z. X. Ong, L. Dowthwaite, E. Perez Vallejos, M. Rawsthorne, and Y. Long, “Measuring Online Wellbeing: A Scoping Review of Subjective Wellbeing Measures,” *Frontiers in Psychology* 12 (2021): Article 616637; Jasmina Rosić, Luca Carbone, Mariëk M. P. Vanden Abeele, Bojana Lobe, and Laura Vandenbosch, “Measuring Digital Well-Being in Everyday Life among Slovenian Adolescents: The Perceived Digital Well-Being in Adolescence Scale,” *Journal of Children and Media* (2023).

<sup>38</sup> Christopher Burr and Luciano Floridi, “The Ethics of Digital Well-Being: A Multidisciplinary Perspective,” in *Ethics of Digital Well-Being*, ed. Christopher Burr and Luciano Floridi (Cham: Springer, 2020), 20–23.

<sup>39</sup> Eric P. S. Baumer and M. Six Silberman, “When the Implication Is Not to Design (Technology),” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (New York: Association for Computing Machinery, 2011), 2271–2274.

continues to operate within a framework in which the human and technology are conceived as distinct entities, merely repositioned within a different relation of control. The human subject remains the privileged locus of agency, and technology remains the object of regulation. This persistent anthropocentric dualism marks the theoretical limit of critical design-oriented approaches to DWB. What is therefore required is a deeper ontological shift, one that does not concern only who controls technology, but how humans, technologies, and forms of life are co-constituted in the first place.

### III. Relational Ontologies of Technology

This ontological reorientation finds expression in relational and posthumanist approaches that rethink the human–technology relation itself. The focus is no longer on whether technology is neutral or value-laden, nor merely on who controls it, but on how humans, technologies, and social realities are co-constituted through ongoing practices.

It is within this philosophical horizon that Stefan Lorenz Sorgner abandons the idea of a fixed human essence in favour of a dynamic, technologically mediated process of self-formation.<sup>40</sup> For Sorgner, emerging technologies—ranging from digital media and artificial intelligence to biotechnologies—do not merely extend pre-given human capacities but actively participate in the ongoing transformation of what it means to be human.

Sorgner writes, “We no longer regard ourselves as categorically dualistic entities which consist of a material body and an immaterial soul, but an increasing amount of human beings conceptualise themselves as non-dualist relational entities who are in a permanent process of self-overcoming.”<sup>41</sup>

Within the framework of critical posthumanism, Rosi Braidotti challenges the modern figure of the autonomous, rational subject by proposing an understanding of the human as relational and always in the process of becoming.<sup>42</sup> Braidotti’s posthuman critical theory is grounded in a neo-materialist and monistic ontology, in which matter—including “the specific bound volumes of matter that constitutes humans themselves, is not organised in terms of dualistic mind/body oppositions, but rather as materially embedded and embodied subjects-in-progress.”<sup>43</sup> She argues that monism, the “unity of all living matter,” is directly linked to the post-anthropocentric turn which under the combined impact of globalisation and “technology-driven forms of mediation” “strikes the human at his/her heart and shifts the parameters that used to define anthropos”.<sup>44</sup> Any remaining notion of a fixed “human nature” is replaced by a continuum of *naturecultures*,<sup>45</sup> which dissolves the sharp distinction between life as *bios*, the privilege of

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<sup>40</sup> Stefan Lorenz Sorgner, *Genes, CRISPR/Cas 9, and Posthumans* (Cham: Springer, 2020).

<sup>41</sup> Sorgner, *Genes, CRISPR/Cas9*, 6–7.

<sup>42</sup> Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013), 35–37.

<sup>43</sup> Rosi Braidotti, “Posthuman Critical Theory,” *Journal of Posthuman Studies* 1, no. 1 (2017): 16.

<sup>44</sup> Braidotti, *The Posthuman*, 57.

<sup>45</sup> Braidotti, “Posthuman Critical Theory,” 12; see also Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991).

*Anthropos*, and nonhuman life, or *zōē*<sup>46</sup>. For Braidotti, subjectivity becomes “an expanded relational self,” emerging within a “complex field of forces and data flows” through the cumulative effect of multiple factors.<sup>47</sup> The relational capacity of the posthuman subject is thus not confined within the human species but extends to “all non-anthropomorphic elements”.<sup>48</sup> In Braidotti’s view, the post-anthropocentric condition does not dissolve subjectivity but transforms it in affirmative ways. These affirmative shifts are articulated through the processes of “becoming-animal, becoming-machine, and becoming-earth”, through which subjectivity unfolds across trans-species, technological, and planetary relations.<sup>49</sup>

Katherine N. Hayles offers a complementary account of relational subjectivity by situating it within material and embodied informational networks. Drawing on and extending Donna Haraway’s concept of “informatics,” Hayles understands these networks as composed not only of information technologies themselves, but also of the “biological, social, linguistic, and cultural changes that initiate, accompany, and complicate their development”.<sup>50</sup> These elements operate through “complex feedback loops” that both “produce and are produced by” the networks themselves. Against informational and disembodied conceptions of subjectivity, Hayles explicitly rejects the distinction between “information” and “materiality” as separate entities.<sup>51</sup> Against this dualism, she argues that “information is never disembodied” and cannot be separated from the medium that instantiates it, thereby exposing the “systematic devaluation of materiality and embodiment” produced by cybernetic paradigms.<sup>52</sup> Hayles introduces the notion of *virtual bodies* in order “to allude to the historical separation between information and materiality and also to recall the embodied processes that resist this division.”<sup>53</sup> Thereby, Hayles can be read as recentring embodiment and materiality within accounts of subjectivity.

Karen Barad’s agential realism marks a radical ontological and epistemological shift by building on Niels Bohr’s philosophy–physics, through which he challenges both Newtonian physics and Cartesian epistemology.<sup>54</sup> Rather than presupposing independently existing objects with inherent properties, Barad proposes *phenomena* as the primary ontological units of reality, ontological entanglements through which boundaries, properties, and meanings become determinate.<sup>55</sup> Within this framework, entities do not pre-exist their relations but emerge through specific *intra-actions*, which enact locally situated distinctions between “subject” and “object” via what Barad terms

<sup>46</sup> Braidotti, “Posthuman Critical Theory,” 12.

<sup>47</sup> Braidotti, *The Posthuman*, 60.

<sup>48</sup> *Ibidem*.

<sup>49</sup> *Ibidem*, 66.

<sup>50</sup> N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), 29; Donna Haraway, “A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s,” *Socialist Review* 80 (1985): 65–108; and “The High Cost of Information in Post–World War II Evolutionary Biology: Ergonomics, Semiotics, and the Sociobiology of Communication Systems,” *Philosophical Forum* 13, nos. 2–3 (1981–82): 244–275.

<sup>51</sup> Hayles, *How We Became Posthuman*, 12.

<sup>52</sup> *Ibidem*, 13, 48.

<sup>53</sup> *Ibidem*, 20.

<sup>54</sup> Karen Barad, “Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter,” *Signs* 28, no. 3 (Spring 2003), 813.

<sup>55</sup> Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 333.

an *agential cut*.<sup>56</sup> This ontological shift entails a fundamental rethinking of materiality, agency, and practices. Apparatuses are not understood as static instruments or human-imposed conceptual frameworks, but as dynamic material–discursive practices that participate in the production of phenomena.<sup>57</sup> Matter, accordingly, is not a fixed substance but a process of intra-active becoming—“not a thing but a doing, a congealing of agency.”<sup>58</sup> From this perspective, agency cannot be located in pre-existing human or technological entities; rather, matter, discourse, bodies, technologies, and meanings are co-constituted within specific material configurations/dynamic reconfigurings of the world.<sup>59</sup> Karen Barad’s reconfiguration of agency and materiality underpins sociomaterial accounts of technology and practices.

The notion of *sociomateriality* was introduced by Wanda Orlikowski and Susan Scott as an umbrella term for a range of studies that brought relational ontologies into information systems and management research.<sup>60</sup> Within its genealogy, Science and Technology Studies—and particularly Actor–Network Theory (ANT)—constitute an important point of reference as they foreground the relational production of the social and decentres the human subject.<sup>61</sup> Orlikowski and Scott’s contribution, however, is particularly significant as a reworking of relational concerns through a Baradian ontology of entanglement. From a sociomaterial stance, the social and the material do not exist as separate domains that later interact but are constitutively entangled in practices. Practices are approached as ontological: bodies, spaces, and material objects do not exist independently of practices but take form and meaning through the material-discursive practices that enact them at any given moment.<sup>62</sup>

As Orlikowski and Scott emphasise, “As material-discursive practices are constitutive, they configure reality [...] they are performative. Performativity focuses attention on the ongoing, dynamic, relational enactment of the world.”<sup>63</sup>

Technologies are not external tools that intervene in an already formed social world; nor are they autonomous forces that act upon it. Rather, organisational routines, social relations, and technological artefacts emerge together in situated sociomaterial configurations. Agency, in this framework, is not a property of pre-existing human or

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<sup>56</sup> Ibid., 333–334.

<sup>57</sup> Ibid., 335.

<sup>58</sup> Ibid., 151, 333.

<sup>59</sup> Karen Barad, “Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter,” *Signs* 28, no. 3 (Spring 2003): 801–831.

<sup>60</sup> Wanda J. Orlikowski and Susan V. Scott, “Sociomateriality: Challenging the Separation of Technology, Work and Organization,” *Academy of Management Annals* 2, no. 1 (2008): 433–474.

<sup>61</sup> Dubravka Cецez-Kecmanovic, Robert D. Galliers, Ola Henfridsson, Sue Newell, and Richard Vidgen, “The Sociomateriality of Information Systems,” *MIS Quarterly* 38, no. 3 (2014): 814; Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005).

<sup>62</sup> Wanda J. Orlikowski and Susan V. Scott, “Exploring Material-Discursive Practices,” *Journal of Management Studies* 52, no. 5 (July 2015), 698.

<sup>63</sup> Ibidem, 700.

technological entities, but an emergent effect of the sociomaterial practices through which both “humans” and “technologies” are themselves continuously constituted.<sup>64</sup>

Across these perspectives, a shared ontological commitment becomes visible: reality is understood as relational, processual, and irreducibly sociomaterial. By displacing the human from the centre of analysis and rejecting enduring dualisms between subject and object, social and material, these approaches provide the conceptual ground for rethinking not only how technologies are analysed, but also why such an ontological reorientation matters. The following and final section builds on this shift to examine its implications for understanding DWB.

#### **IV. Digital Wellbeing as a Sociomaterial and Relational Phenomenon**

From sociomaterial and posthumanist perspectives, technology is no longer conceived as something that humans simply use, regulate, or control from the outside. Rather, technologies are understood as constitutive of practices, agencies, and forms of life, while the human subject itself is no longer taken as an ontological starting point but as an effect of historically and materially situated configurations in which the technological is always already involved. Within this ontological horizon, the question of DWB can no longer be framed solely in terms of correct use, responsible design, or democratic governance, nor be understood as the psychological state of a pre-given individual or as the outcome of isolated technical features.

As we have tried to show in this article, continuing to describe wellbeing as *digital* keeps alive a way of thinking that separates technology from everyday life, as if it were something external that intervenes in it. From a relational perspective, however, contemporary forms of living are already deeply entangled with technologies, which makes such distinctions difficult to sustain. For this reason, we propose the use of the term *wellbeing* without the qualifier *digital*. We also avoid writing *well-being* with a hyphen, in opposition to *ill-being*, as this framing suggests a clear divide where there is instead a continuum. Using *wellbeing* without a hyphen allows us to emphasise this continuity and to bring the concept closer to a salutogenic orientation, focusing on how ways of living are sustained and transformed rather than on the absence of pathology. From this perspective, wellbeing is better understood as a continuum rather than as a binary opposition between healthy and pathological practices.

Relational, posthumanist, and sociomaterial theories allow wellbeing to be conceptualised as an emergent phenomenon of sociomaterial practices in which bodies, technologies, affects, norms, and temporalities are entangled. Such an understanding opens space for recognising plural ways of living well that may not align with culturally dominant paradigms of the good life. As posthumanist, feminist, and postcolonial critiques have emphasised, it is epistemically limiting and ethically problematic to dismiss such forms of life simply because they fail to conform to hegemonic norms of wellbeing.

Conceptualising wellbeing as an emergent sociomaterial phenomenon has important methodological implications. Post-qualitative and diffractive approaches allow attention to lived experiences without reducing it to predefined categories or normative

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<sup>64</sup> Wanda J. Orlikowski, “Sociomaterial Practices: Exploring Technology at Work,” *Organization Studies* 28, no. 9 (2007): 1435–1448; Wanda J. Orlikowski and Susan V. Scott, “Sociomateriality: Challenging the Separation of Technology, Work and Organization,” *Academy of Management Annals* 2, no. 1 (2008): 433–474.

benchmarks, while ethnographic and anthropological methods—such as in situ observation, fieldwork, diaries, and focus groups—are particularly useful for tracing how wellbeing is materially enacted and embodied within everyday sociotechnical practices. At the same time, relational approaches invite the inclusion of cultural products, including literary texts and forms of popular culture, not as passive reflections but as active participants in meaning-making. As Hayles has argued, literary texts and popular culture are not merely representations of technology and science, but sites where technological meanings, scientific imaginaries, and cultural assumptions are actively shaped and circulated,<sup>65</sup> and, as we argue here, through which particular ways of living and understanding wellbeing become possible.

Finally, this reconceptualisation brings the ethical dimension of wellbeing research to the foreground. Research practices do not simply observe and reflect the world but they are active interventions participating in its shaping through specific agential cuts.<sup>66</sup> Recognising that researchers are always already entangled with the phenomena we study invites an affirmative ethics of research, attentive to how situated knowledge practices open up or foreclose possibilities for living well within trans-species, technological, and planetary relations.<sup>67</sup>

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<sup>65</sup> Hayles, *How We Became Posthuman*.

<sup>66</sup> Orlikowski and Scott, “Exploring Material-Discursive Practices,” 698.

<sup>67</sup> Braidotti, *The Posthuman*.

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# EDUCATION AND DIGITAL WELLBEING: RECLAIMING HUMAN AGENCY

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Evangelia V. Dimaraki\*

## **Abstract**

*We experience the present configuration of digital technology as a boundless, algorithmically curated environment to inhabit. Can we thrive in this digital habitat, individually and collectively? The concept of digital wellbeing arises from a growing unease at technological developments misaligned with human thriving. Examples of misalignment consequential for education are distraction-by-design that fragments attention and the digital automation of cognition that trivialises mastery of knowledge and competence. I propose that education is the prime field for reclaiming human agency over technology. Two starting points for educators are cultivating students' agency over digital life and exercising their own agency over EdTech.*

## **Keywords**

*Digital wellbeing; digital distraction; persuasive behavioral design; attention economy; cognitive offloading; edtech industry; human agency*

## **I. The Water We Swim In**

*There are two young fish swimming along and they happen to meet an older fish swimming the other way, who nodes at them and says, "Morning, boys. How's the water?"*

*And the two young fish swim on for a bit, and then eventually one of them looks at the other and goes, "What the hell is water?"<sup>1</sup>*

When I talk about technology, education and digital wellbeing with teachers, I always share this short parable by David Foster Wallace. An allegory of our technological moment may not have been what its author intended, but the story effects, as good parables do, a necessary shift in perspective. The well-worn concepts of "digital media" or "digital tools", used for the previous digital technology waves that reached the gates of education, will simply not do. They do not begin to capture the distinctive qualities emerging from the configuration of internet connectivity, personal devices, and

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<sup>1</sup> David Foster Wallace, *This Is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life* (New York: Little, Brown and Company, 2009).

algorithmic personalization that permeates every aspect of our daily experience. Technology as “the water that we swim in” is a better metaphor.

The primary distinctive quality is pervasiveness. Over the past twenty years, many of the analog and physical paraphernalia of daily life have been integrated into a seamless digital interface: mail, newspapers, notes, photo albums, maps, dictionaries, games, radio and TV, a watch, a music player, a camera, an alarm clock, a calendar, a calculator and, of course, the basic phone, are all converted into convenient apps on personal digital devices and augmented with functionalities that enhance efficiency and automation. With ever-increasing portability and interconnectedness, smartphones and, more recently, wearables have become essential appendages, with us at all times and part of everything we do. Concurrently, there is the proliferation of physical objects and appliances fitted with sensors, digital circuits, software and network capabilities, collectively nicknamed “the internet of things”, which adds to the pervasiveness of digital technology by integrating it into our surroundings.

While not as self-evident, an equally distinctive quality is a relentless, if illusionary, abolition of constraints. Device ubiquity, combined with fast and reliable internet connectivity, abundant remote storage and advances in frictionless UX design have minimized the effort required to access an ostensibly infinite pool of information, labor saving apps, automatically updated media streams and online social exchanges. The mission is to remove boundaries, obstacles, downtime, tedium and toil from our experiential world. In the absence of physical limits or salient intuitions of excess, habits of incessant digital consumption begin to form around even the most mundane of daily routines.

However, the most unprecedented and most defining quality of our technological moment is the convergence of digital technology with what is known as the attention economy,<sup>2</sup> less favorably surveillance capitalism.<sup>3</sup> As Herbert Simon predicted, since human attention is finite, “a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.”<sup>4</sup> The attention economy arises as the dominant market in response to the scarcity of attention created by digital overabundance, but creates positive feedback loops that exacerbates it. The engine of the attention economy is algorithmic personalization. Personalization algorithms constantly analyse extremely large, complex and dynamically updated sets of user data, generated by our pervasive and interconnected devices. Applying machine learning techniques, personalization algorithms infer user characteristics and behavioral patterns, to predict user wants and needs and to filter through the cascade of digital content, in order to personalize it for the user. In theory, such algorithms, which power everything from search engines, to news feeds to media platform recommendations, can be beneficial by supporting the users’ goal to allocate attention efficiently in accordance to their interests. However, at the core of the attention economy are powerful incentives to commodify user personal data and profit from user attention through content targeting. There is intense

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<sup>2</sup> Thomas H. Davenport and John C. Beck, *The Attention Economy: Understanding the New Currency of Business* (Boston: Harvard Business Press, 2001)

<sup>3</sup> Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (London: Profile Books, 2019)

<sup>4</sup> Herbert A. Simon. “Designing Organizations for an Information-Rich World.” In *Computers, Communications, and the Public Interest*, ed. Martin Greenberger, 38-72. Baltimore: Johns Hopkins Press, 1971

competition between tech companies to capture user attention. Most apps and platforms, irrespective of their overt value proposition, operate on business models that apply personalisation algorithms not merely to match digital content with user goals, but to optimize for user engagement,<sup>5</sup> by refining techniques of persuasive behavioral design<sup>6</sup> that draw upon psychological needs, cognitive blind spots, emotional triggers and habit-forming reward loops, to predict and induce user behavior that will attract more users and galvanize them to spend more time in attention-harvesting and content targeting interactions.

By now, it should be clear why water is the better metaphor for how we experience the present configuration of digital technology: a boundless, algorithmically curated environment for us to inhabit seamlessly immersed, inundated in digital content and inadvertently drifting with the undercurrents of the attention economy. As ever larger portions of lived reality become digitally saturated, unmediated experience recedes. Is it possible to thrive in this digital habitat, individually and collectively? Can it nurture our true needs and aspirations? Our current technological moment engenders a growing unease around these questions.

The quest for digital wellbeing arose precisely in response to this growing discontent. Indeed, it is telling that the term “digital wellbeing” was coined first by Google, circa 2018, to describe a suite of technical interventions it was developing to support users in managing the challenge to “keep life, and not the technology in it, front and center.”<sup>7</sup> Wellbeing tools of this sort are now routine functionalities of digital devices such as smartphones. Their effectiveness is unclear,<sup>8</sup> and digital wellbeing concerns does not abate. The advent of generative AI fuels the positive feedback loops of the attention economy by massively amplifying both algorithmic personalization and the deluge of digital content. There is a turning of the tide as technological euphoria is tempered with regulatory legislation, user rights advocacy, a growing body of research on health effects and changes in educational policies for technology use. Indeed, while comprehensive “digital transformation” remains the official policy of the EU, it is now qualified with public declarations that “digital transformation should never come at the expense of our well-being”.<sup>9</sup>

The prevalence of digital wellbeing as a concept and as a call for action betrays that the direction of technology development is not well aligned with human flourishing. It follows that to talk about digital wellbeing in any domain of human life, we first need to examine carefully such misalignments.

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<sup>5</sup> For example: Cynthia A. Dekker, Susanne E. Baumgartner, Sindy R. Sumter. “For you vs. for everyone: The effectiveness of algorithmic personalization in driving social media engagement.” *Telematics and Informatics* 101 (2025). <https://doi.org/10.1016/j.tele.2025.102300> (accessed December 1, 2025)

<sup>6</sup> IxDF - Interaction Design Foundation. *What is Behavioral Design?* <https://www.interaction-design.org/literature/topics/behavioral-design> (accessed Dec. 1, 2025). B. J. Fogg. *Persuasive Technology: Using Computers to Change What We Think and Do* (San Fransisco: Morgan Kaufmann Publishers, 2003) Nir Eyal, *Hooked: How to build Habit-Forming Products* (London: Portfolio Penguin, 2014)

<sup>7</sup> This is the Google tagline for this initiative, as cited in Mariëk M. P. Vanden Abeele. “Digital Wellbeing as a Dynamic Construct.” *Communication Theory* 31(4)(November 2021): 932–955.

<sup>8</sup> Vanden Abeele, “Digital Wellbeing as a Dynamic Construct.” 933.

<sup>9</sup> Webinar on well-being online: amplifying the voices of young people within the European Year 2025, News Story, 13 November 2025 available at: <https://www.coe.int/en/web/education/-/webinar-on-well-being-online-amplifying-the-voices-of-young-people-within-the-european-year-2025>

## II. The Rise of Misalignments

When talking about the misalignment of digital technology with human flourishing, it is important to understand that digital products and services succeed because they are designed to work with our natural psychological and cognitive predispositions and they respond to genuine needs and goals. However, they may also be designed, accidentally or on purpose, to divert our natural predispositions and optimize for behaviors that ultimately are incompatible with our needs and goals. That is when misalignments arise, undermining our wellbeing.

There is an ongoing discussion about the misalignment of current digital technology used by children and adolescents with their wellbeing, including concerns about mental health, excessive datafication and disruption of formative experience during developmental years. Here, I am going to focus on two misalignments, that are particularly consequential for learning: how distraction-by-design leads to attention fragmentation and how fully automated cognitive offloading affects knowledge and competence.<sup>10</sup>

### A. Distraction-by-design and Attention Fragmentation

As William James famously remarked our experience is what we agree to attend to.<sup>11</sup> Attention involves by this definition a top-down, goal-directed narrow focus on an external object or an internal train of thought. However, a constant complement of attention is a road awareness of our surroundings that is bottom-up and driven not by intention, but by sensory stimuli; a constant scanning, essential for our survival, for signs of danger or urgency, unexpected novelty, or the potential for pleasure.<sup>12</sup> Everytime such signs arise, the mind has to make the instant executive decision to either ignore the sensory stimuli and keep to what it is attending or to switch focus.

If attention is the foundation of experience, the decision to maintain or to switch focus is a vital one. It determines the content and the quality of our experience and, cumulatively the essence of our lives. This makes attention enormously precious to us, at the same time that it is precious for different reasons in the attention economy: as a finite resource to be extracted for its economic value. Therein emerges the misalignment between our wellbeing and the business model baked into the code of apps and platforms that we use daily and can be described as distraction-by-design.<sup>13</sup> Simply put, a good part

<sup>10</sup> Johnathan Haidt. *The Anxious Generation*. New York: Penguin Press, 2024. Deborah Lupton and Ben Williamson. "The datafied child: The dataveillance of children and implications for their rights." *New Media & Society* 19(5) (2017): 780–794. Sonia Livingstone and Krutika Pothong, Ed. *Education Data Futures: Critical, Regulatory and Practical Reflections*. Digital Futures Commission, 5Rights Foundation, 2022. <https://educationdatafutures.5rightsfoundation.com/> (accessed Dec. 1, 2025). OECD. *How's Life for Children in the Digital Age?* Paris: OECD Publishing, 2025. <https://doi.org/10.1787/0854b900-en>. (accessed Dec. 1, 2025). 5Rights Foundation. *Pathways: How Digital Design Puts Children At Risk*. 2021, <https://5rightsfoundation.com/resource/pathways-how-digital-design-puts-children-at-risk/> (accessed Dec. 1, 2025)

<sup>11</sup> William James. *The Principles of Psychology* New York: Henry Holt and Company, 1890.

<sup>12</sup> Adam Gazzaley and Larry D. Rosen. *The Distracted Mind: Ancient Brains in a High-Tech World*. Cambridge MA: The MIT Press, 2017.

<sup>13</sup> James Williams. *Stand out of our light: Freedom and resistance in the attention economy*. Cambridge: Cambridge University Press, 2018. <https://doi.org/10.1017/9781108453004> (accessed Dec. 1, 2025)

of the digital technology that we use daily is designed to make us switch focus; to persuade us to attend to something very different than what we have intended.

Persuasive design effects focus-switching, by flooding our field of awareness with stimuli and information, using intense sensory cues of sound, color and movement and relying on the power of personalization algorithms to deliver novelty, urgency and pleasure. The fierce competition for the limited resource of attention makes our devices the source of relentless stimulation with focus-switching baits from various apps and platforms throughout our waking hours. Moreover, it is not enough to pull us in through focus-switching. Persuasive design aims to keep us in and even to make us return, by exploiting the vulnerabilities of the stress response and the reward system in our brains, that get us “hooked”<sup>14</sup> in patterns like doomscrolling, obsessive checking and a cognitive state of mental vigilance even when we are not on our device.<sup>15</sup> It should be clear by now that competition is not only with other apps and platforms, but with what demands our attention in real life: work, leisure, care, relationships and, of course, learning. “The last thing these companies want is to encourage leisurely reading or slow, concentrated thought. It’s in their economic interest to drive us to distraction.”<sup>16</sup>

Some of the effects of this misalignment for learning and development are quite obvious. Frequent focus-switching interferes with concentration and induces mental fatigue, therefore it is disruptive of learning. Rapid shifts in narrow focus are the definition of attention fragmentation that precludes the sustained engagement needed for deep cognitive work, making it more likely that learning and understanding will stay on the surface. However, the greater cost of distraction-by-design is that over time it can make it harder to focus, even in the absence of digital stimulation. Through repetition and practice, it may be training the brain, especially the developmentally sensitive brain, to prefer distraction and to seek it out.

### *B. Trivialization of Knowledge and Competence Downgrading*

Cognitive offloading, the use of actions and objects in the external world “to alter the information processing requirements of a task so as to reduce cognitive demand.”<sup>17</sup> has always been part of daily life. For example, counting with our fingers, doing calculations on paper or using abacus are different versions of offloading some of the cognitive demands of basic arithmetic. We resort to cognitive offloading to reduce effort when we find the demand of a task too taxing for our mental resources at a given moment or improve performance, when we consider our mental capacities insufficient to reliably meet the demands of a task. Offloading can serve as a temporary cognitive scaffold to support the development of mastery or as a regular cognitive extension offsetting natural mental limitations to performance.

By becoming integrated into our digital devices, the means of cognitive offloading are not only becoming ubiquitous and boundless, but they increasingly extend to a broader range of cognitive capacities: from memory, planning and routine operations to problem-

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<sup>14</sup> Eyal, *Hooked*

<sup>15</sup> Vanden Abeele “Digital Wellbeing as a Dynamic Construct,” 940

<sup>16</sup> Nicholas Carr, “Is Google Making Us Stupid?” *The Atlantic*, July/August 2008. [www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/](http://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/) (accessed Dec. 1, 2025)

<sup>17</sup> Evan F. Risko and Sam J. Gilbert. “Cognitive Offloading” *Trends in Cognitive Sciences*. 20 (9) (2016): 676-688.

solving, decision making and original creation. They are also seamlessly designed into apps and services we interact with, even proactively anticipating our needs, thus transforming offloading into a reflexive and at times automatic process, almost a background feature of the algorithmically curated life. In daily life and work, we a regularly and casually defer to digital offloading as a matter of convenience and efficiency. New apps and automated features spread through our digital devices and adopted widely upon arrival, as welcomed shortcuts for bypassing arduous, time-consuming and tiresome processes to achieve the same or better outcomes. It is this unprecedented scale and range, now at the verge of fully-fledged automation, that transcends all previous human experience with cognitive offloading.

This digital environment, which is designed to prioritize efficiency and convenience by fostering constant offloading of cognitive effort, is in misalignment with supporting learning and development. The most straightforward costs of such misalignment relate to the curtailing of knowledge and competence. It can be argued, of course, that the advancement of technology may have rendered them obsolete. The question then becomes, what knowledge and competencies can we afford to lose, without inadvertently downgrading human experience. Is there a wellbeing cost to offloading mental arithmetic to calculators at an early age? What about offloading curiosity and memory to search engines,<sup>18</sup> foreign language competency to translation apps or spatial orientation, wayfinding and knowledge of our surroundings to GPS navigation systems?<sup>19</sup> Such questions become urgent with the advent of both predictive and generative AI, which enable the offloading to algorithms of our most cognitively demanding work: critical thinking, creativity, problem solving, imagination, judgment and taste.<sup>20</sup> Early research suggests that the use of LLMs by students may result in across the board lower brain connectivity during the task, including working memory, executive control, semantic memory retrieval and deeper creative processing. At the same time, learning is marked by shallow engagement with a narrower set of ideas, weaker content retention and a diminished sense of cognitive agency and ownership of the intellectual work.<sup>21</sup>

It is clear how habitual reliance on digital offloading can create the illusion of knowledge and competence, through superficial fluency of performance, without deepening understanding or honing skills. Digital offloading may also downgrade the human experience of learning and development in less obvious ways. The convenience of externally provided options – from text autofill, to emoji collections and LLM generated story ideas– may lead to the narrowing down of collective creativity and

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<sup>18</sup> Betsy Sparrow, Jenny Liu, Daniel M. Wegner. “Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips.” *Science* 333 (2011): 776–778.

<sup>19</sup> Laura Miola, Veronica Muffato, Enrico Sella, Chiara Meneghetti, Francesca Pazzaglia. “GPS use and navigation ability: A systematic review and meta-analysis.” *Journal of Environmental Psychology* 99 (2024).

<sup>20</sup> Adnan Masood. “The Outsourced Mind: Navigating the Risks and Rewards of Cognitive Offloading” *MEDIUM Aug 4, 2025*. <https://medium.com/@adnanmasood/the-outsourced-mind-navigating-the-risks-and-rewards-of-cognitive-offloading-9e1e70ee2efb> (accessed Dec. 1, 2025). Kyle Chayka. *Filterworld: How Algorithms Flattened Culture*. New York: Doubleday, 2024.

<sup>21</sup> Nataliya Kosmyna, Eugene Hauptmann, Ye Tong Yuan, Jessica Situ, Xian-Hao Liao, Ashly Vivian Beresnitzky, Iris Braunstein, Pattie Maes, “Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task.” *arXiv:2506.08872 [cs.AI]* (2025). <https://arxiv.org/pdf/2506.08872> (accessed Dec. 1, 2025).

individual self-expression.<sup>22</sup> Trivializing the cognitive effort applied to significant questions and problems may be numbing the euphoric mental rewards of wonder, insight and mastery that make learning intrinsically motivating. Finally, digital cognitive offloading is displacing social opportunities for connection and mentorship that come with looking for information, asking for advice, practicing knowledge and solving problems together in real life. Overtime, the surrender of essential knowledge and competency can create a vicious circle overreliance to technology, deferring to its outputs while losing the ability to evaluate them.<sup>23</sup>

These misalignments are the outcome of inadvertently allowing the logic of the attention economy to shape lived experience through the wholesale adoption of digital technology to address them we need to have the agency to reclaim control.

### III. Education and Reclaiming Human Agency

Education can become a sovereign space for cultivating our individual and collective agency to reclaim control over our digital lives and to engage in shaping a technological future that aligns with our wellbeing.

Reclaiming of human agency presupposes changing the habitual ways we think and talk about digital technology. It begins with treating technology as optional. By this I don't mean that we should be doing away with it and returning to a romanticized pre-technological life. What I do propose is that we move away from unquestionably accepting technological inevitability. If with every new platform, app or device that becomes the tech-du-jour we start the conversation from "of course smartphones, social media, genAI chatbots (or whatever comes next) are here to stay" we have committed to technological inevitability. Thus, we have already, without noticing, given away a good part of our agency. Zuboff calls it an ideology of inevitabilism and argues that "inevitabilism precludes choice and voluntary participation."<sup>24</sup> Part and parcel with inevitabilism, is talking in generalities about "technology" as a reified entity. We do this when we divide people into technoenthusiasts and technophobes or when we use clichés such as "technology is neither good or bad, it is how you use it". "Technology" in general is not useful as a unitary concept. It is merely a collective term for specific technological products, services and infrastructures on offer that incorporate deliberate design choices coded into concrete algorithms, functionalities and features.

Thus in practical terms, reclaiming human agency begins with asking questions such as: how is this particular technology on offer – be it a device, an app, a platform or a

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<sup>22</sup> Agarwal Dhruv, Mor Naaman and Aditya Vashistha. "AI Suggestions Homogenize Writing Toward Western Styles and Diminish Cultural Nuances." *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, 2024. <https://dl.acm.org/doi/10.1145/3706598.3713564>, (accessed Dec. 1, 2025)

Barrett R Anderson, Jash Hemant Shah, and Max Kreminski. "Homogenization Effects of Large Language Models on Human Creative Ideation." *Proceedings of the 16th Conference on Creativity & Cognition, ACM*, 2024: 413–425. <https://doi.org/10.1145/3635636.3656204> (accessed Dec. 1, 2025). Kyle Chayka. "A.I. Is Homogenizing Our Thoughts." *The New Yorker*, June 25, 2025.

<sup>23</sup> Hao-Ping Lee, Advait Sarkar, Lev Tankelevitch, Ian Drosos, Sean Rintel, Richard Banks, Nicholas Wilson, "The Impact of Generative AI on Critical Thinking: Self-Reported Reductions in Cognitive Effort and Confidence Effects From a Survey of Knowledge Workers." *Microsoft Research* (2025). [https://www.microsoft.com/en-us/research/uploads/prod/2025/01/lee\\_2025\\_ai\\_critical\\_thinking\\_survey.pdf](https://www.microsoft.com/en-us/research/uploads/prod/2025/01/lee_2025_ai_critical_thinking_survey.pdf). (accessed Dec. 1, 2025).

<sup>24</sup> Shoshana Zuboff, *The Age of Surveillance Capitalism*.

software update – making our life better or worse? does it serve us or do we serve it? is it worth it? can we get the balance right? can we demand, select or built a better version? Probing deeper, reclaiming human agency entails intentional choices about which parts of human experience should remain unmediated and safeguarded from digital interference altogether, especially during learning and development.

In an educational context, reclaiming human agency can move in two complementary directions. The first is to foster systematically the agency of young people over their digital lives. The second is to exercise diligently the agency of the educators' community over the incorporation of technology in their practice.

### *A. Fostering Student Agency for Digital Wellbeing*

Going back to the opening parable of water, the most relatable part for teachers is the “young fish-old fish” encounter. Jonathan Haidt has used the phrase “the great rewiring of childhood”<sup>25</sup> to describe the formative years of almost everyone born roughly after 1995, who were raised with smartphones, casually online, interacting on social media spaces and consuming digital content shaped by the mandates of attention economy even when targeted to young audiences.<sup>26</sup> Sometimes they are called affectionately “digital natives”, because they grew up within a constant stream of digital content, apps and social media interactions. The flipside is that it is harder for them to notice how the devices at hand shape their very sense of self and reality, by mediating their relationship with the world and with each other. Like the rest of us, young people are becoming very weary in the water that we swim in, but, unlike us, they have few experiential reference points besides. This is the only reality that they know. It is their normal, even if their wellbeing suffers.

Probing into the metaphorical waters of digital life with young people is clearly a matter of some educational urgency, but so far it occurs mostly haphazardly, usually wrapped in conflict and defensiveness over problematic behavior, shrinking attention spans, decline in effort and performance, classroom disruption, violation of phone-use rules and more serious transgressions such as cyberbullying. Digital wellbeing stewardship predicated on student agency is not yet common educational practice. What would it take? I propose five anchors:

- creating a supportive environment conducive to honest discussion
- shifting the balance of daily experience toward real life
- making the technology visible
- cultivating intentional technology use
- sustaining commitment over time

To create a supportive environment where students feel that they can engage with us about their digital wellbeing, we need first to move away from conflict and to work on reducing student defensiveness. We can open lines of communication by shifting focus away from device use as a school problem, becoming instead genuinely interested in learning from students about their digital life: acknowledge that technology serves some

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<sup>25</sup> Haidt, 'The Anxious Generation.

<sup>26</sup> Though our focus here will be on students, the post 1995 cohorts now include also younger parents and teachers, but that is the subject for a different essay

real wants and needs, let them share what they like doing on their devices and talk about their own concerns, while we practice listening and being non-judgemental. We also need to establish practices of respectful sharing among the students themselves, including active listening, constructive feedback, personal boundaries and confidentiality. Building trust is the bedrock of a supportive environment and it is a gradual process. We can then create structured processes for students to articulate their experience and examine their habits, connecting them with broader digital wellbeing themes. Especially when examining “bad habits”, it is important to not frame problematic behaviors as personal failings, but as persistent patterns forged in the dynamic system of self, context and technology.<sup>27</sup>

Shifting the balance of daily experience for students toward real life is both a vital act of wellbeing in itself<sup>28</sup> and a pre-condition for reclaiming agency over digital wellbeing. Stepping away from technology to may seem counter-intuitive. Our instinct is to build habits and skills tackling technology use directly and resolutely. We should remember, however, that the receding of the real world under the encroachment of digital interference is a defining condition of students’ formative experience. To reclaim their agency, they need to be able to come up for air and step outside the water. So, we give them a place to stand outside the digital realm, by providing regular experiences in first-order reality. These may involve face-to-face sociability, physical movement, hands-on creativity and the outdoors. We should also experiment with removing devices from some regular school-work. Whatever we do, the key is that we make it compelling and totally tech-free, both for the students and for us. Fully tech-free activities and encounters are becoming increasingly rare. The distinctive experience of unmediated presence in the world and each other can affect deep awareness and valuable insights for digital wellbeing.

Making technology visible is about lifting the veil and showing to students the magic tricks of personalization algorithms and interface features that shape their digital habits to the service of the attention economy. In addition to partaking information, we need to devise inquiry activities that invite students to step back from their device use and examine critically their favorite games, apps and platforms, by doing some “detective work” to spot behavioral design features and persuasive techniques. To build their awareness further, we may complement inquiry with self-inquiry activities that make visible the link between persuasive behavioral design and habitual patterns of being “glued” on the screens, spending way more time than intended on games, apps and platforms. We may also develop inquiry and self-inquiry activities on data harvesting and personal privacy. Cultivating awareness by making technology visible is a major step towards students’ agency over their digital lives.

Intentional use of technology is the very core of agency. Note, however, that it requires that we grant students the space to formulate their own intentions about how they want to engage with their digital devices and to decide for themselves what they may (or may not) want to change in their digital habits. Our role is to help students understand wellbeing in all its physical, social and mental dimensions and to shift their perspective by framing their technology use within the bigger picture of their lives: pursuits they enjoy, social bonds they cherish, ambitions they aspire to. Then, we can provide them with structured ways to experiment with balancing their digital habits accordingly. We

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<sup>27</sup> Vanden Abeele “Digital Wellbeing as a Dynamic Construct,” 939-944.

<sup>28</sup> Haidt, *The Anxious Generation*, 49-66, 247-261.

may also challenge their perceptions of technology dependence, the idea that they always need their devices to accomplish something, by inviting them to experiment with going low-tech in familiar tasks. As they cultivate intentional use of technology students are gradually reclaiming the agency to be in control of their digital lives.

It is clear by now that fostering students agency for their digital wellbeing requires sustained commitment, as they gradually build trust, real world orientation, awareness and intentionality. A successful educational approach beyond dedicated lesson units requires practice, repetition and continuity, regular digital wellbeing checkins and integrating digital wellbeing themes across the curriculum. Its viability also depends on cultivating a school culture of digital wellbeing of stewardship, including sanctuaries from digital distraction for concentrated work, low-tech zones for learning and play, peer support and advocacy structures and judicious use of educational technology.

### *B. Exercising Agency over EdTech*

Problematic digital habits of children and teens glued on their personal devices receive high publicity, overshadowing another important aspect of digital wellbeing stewardship for the young: the rising tide of EdTech in schools.

In recent years the technological transformation in education is becoming increasingly a top-down affair dominated by Big EdTech platforms.<sup>29</sup> Often introduced by administrative mandate, the platforms intergrate versions of common digital products and services customized for education as well as dedicated learning apps, media and games, following a commercial business logic complete with user engagement features and data extractive algorithms.<sup>30</sup> A common practice is offering free digital solutions, especially in disadvantaged areas, eventually locking in schools and smaller EdTech developers to the platform model of educational services. Of course, the attention and data of students, who in the context of compulsory education are a captive audience are a commercially valuable asset. Besides, early and frequent use during learning and development is particularly effective at forming habits that lock in future consumers. The ethical issues are glaring, yet the rhetoric that dominates educational policy discussion renders them almost invisible.

The rhetoric is quite predictable in every wave of digital innovation promoted as a learning technology. First there is the techno-utopian optimism, trumpeting the transformative potential of technology to revolutionize education and fix various failings presented in the most unfavorable light. It is a rhetoric of abundance, empowerment and liberation, eliminating drudgery, automating learning activities tailored to individual

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<sup>29</sup> Michael Veale. "Schools must resist big EdTech –but it won't be easy.?" In Livingstone Sonia and Pothong Kruakae, ed. *Education Data Futures: Critical, Regulatory and Practical Reflections*. Digital Futures Commission, 5Rights Foundation, 2022. <https://educationdatafutures.5rightsfoundation.com/> (accessed Dec. 1, 2025). Huw Davies, Rebecca Eynon, Janja Komljenovic, Ben Williamson. "Investigating the financial power brokers behind EdTech." In Livingstone Sonia and Pothong Kruakae, ed. *Education Data Futures: Critical, Regulatory and Practical Reflections*. Digital Futures Commission, 5Rights Foundation, 2022. <https://educationdatafutures.5rightsfoundation.com/> (accessed Dec. 1, 2025)

<sup>30</sup> Natalia Kucirkova. "The promise and pitfalls of personalised learning with new EdTech." In Livingstone Sonia and Pothong Kruakae, ed. *Education Data Futures: Critical, Regulatory and Practical Reflections*. Digital Futures Commission, 5Rights Foundation, 2022. <https://educationdatafutures.5rightsfoundation.com/> (accessed Dec. 1, 2025).

needs, conveying knowledge effectively and equitably, expanding students' experiences and kindling their self-directedness and motivation. Of course, past experience suggests that EdTech overpromises and underdelivers.<sup>31</sup> Still, with every wave of technology, the hype cycle begins anew, diverting time, effort and scarce material resources, while narrowing down the space of pedagogical imagination to a technological fix.

Then, there are various strands of inevitabilism, in the rhetoric about preparing the younger generation for the inevitable and fast paced world of constant digital transformation. Digital literacy, future readiness and bridging the digital divide are commonplaces of this rhetoric. Schools must open their doors to the tidal waves of digital technology, curricula must be reconsidered and educators must be ready to adopt new apps, functionalities and features as they become available and to adapt their practices accordingly. Education must align with technological progress, else it will be failing the students. The underlying logic, that the priorities of technology development should dictate what happens in education, is exactly backward: technological progress should align with human development and flourishing and education should mediate this alignment by cultivating human agency.

Finally, a particularly insidious part of the rhetoric is the framing of human agency as institutional inertia. Educators are often described as “resistant to change” when they openly reject or quietly refrain from adopting some digital solution. The “resistance to technology” rhetoric, often baked into the assumptions of in-service training, preempts legitimate concerns that teachers may have about the digital product or service on offer not aligning with their goals and practice, interfering with the learning experience or compromising students' wellbeing. It is a covertly or overtly aggressive rhetoric that puts educators on the defensive and under pressure to adopt technology as a mark of professional competence and ambition, freigning enthusiasm and adapting their practice to make it work. Again, this is backward: it is the EdTech industry players who need to prove themselves to educators, not the other way round.

Reclaiming educators' agency over EdTech comes back to replacing inevitabilism and generality with construtive deliberation on concrete options for digital innovation, examining pedagogical assumptions, seeking clarity about the “why” as well as the “how” and recongizing trade-offs and misalignments with respect to learning, development and digital wellbeing. At the most basic level, we are guided by the precautionary principle of doing no harm. As educators, we need to understand persuasive behavior design and user data harvesting and to attend diligently to exploitative and extractive functions coded into the EdTech that we consider for use with students.

Judiciousness is in order, even when it comes to sound digital learning options, weighing their benefits against the risk of teaching unintended lessons in technology dependency: if we digitally outfit most learning tasks, we may be inadvertently teaching our students, that there has to be an app for everything, that they cannot learn, think or solve problems without digital support. In addition, we should remember that digital wellbeing stewardship, requires shifting the balance of daily experience for students toward real life, therefore we should be mindful of schoolwork and homework that involves technology use, to prevent digital media from taking over most of students' day.

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<sup>31</sup> Larry Cuban. *Oversold and Underused: Computers in the Classroom*. Cambridge MA: Harvard University Press 2001.

A good rule of thumb is adhering to what I like to call the three Cs: we should aim for uses of digital technology that are contained, critical and creative. Contained refers to restricting EdTech use to custom digital options tailored to well-defined learning challenges: for example, a dynamic map or an interactive timeline may support historical understanding and reasoning better than paper-based alternatives.<sup>32</sup> Critical refers to uses of technology that elucidate for students the inner workings of the technology itself, as for example in the “Breakable Machine” game, that invites students to spoof an AI image classifier, simultaneously inspecting its XAI representation.<sup>33</sup> Creative refers to uses that counterbalance digital consumerism, by means for inventive and imaginative engagement with technology, for example with tangible technology kits.<sup>34</sup>

Finally, we should advocate for digital wellbeing criteria to be used in the procurement of EdTech and be active participants in their formulation. These can address everything from teacher workload overheads and opportunity costs, to pedagogical soundness and age appropriatedness, to student safety and privacy, risks of distraction and adverse habit formation or other potential misalignments.

Reclaiming the agency of educators over EdTech is a vital necessity for safeguarding the digital wellbeing of students during learning and development. Treating technology as optional needs to become the default in every decision that involves educational technology.

### *C. The Limits of a Human Agency Approach*

Clearly, we can make space in education for exercising and nurturing human agency over digital priorities. There is a lot we can do. At the same time, there is so much we can do. We cannot tackle digital wellbeing unless human agency is complemented with robust industry regulation, data protections, ethical design codes, educational technology standards and healthy economic incentives, including policy structures that reduce the power imbalance between educators and Big EdTech. Otherwise, the human agency approach can backfire, allowing industry players to whitewash their business practices and policymakers to saddle educational communities with more than their share of responsibility.

Reclaiming human agency through education, in and of itself cannot solve the problem of the rapid encroachment of technology that is misaligned with human thriving. However, it carries the kernels of empowerment for all other pathways of action. Recovering swathes of unmediated experience and negotiating vigilently about which parts of our experience we will allow to be digitally mediated is at the core of any winning strategy, individual and collective, in education and beyond.

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<sup>32</sup> Evangelia V. Dimaraki. “Dynamic Representations for Inquiry-Based History Learning” In Kynigos Chronis and Dimaraki Evangelia V.: ed. *Mind Tools and Information Media: Pedagogical Uses of Contemporary Technology* for the Evolution of Educational Practice. Athens: Kastaniotis Publications, 2002. [in Greek]

<sup>33</sup> Olli Hilke, Nicolas Pope, Juho Kahila, Henriikka Vartiainen, Teemu Roos, Parkki Tuomo, Matti Tedre. “Breakable Machine: A K-12 Classroom Game for Transformative AI Literacy Through Spoofing and eXplainable AI (XAI).” *10.48550/arXiv.2508.14201* 2025.

<sup>34</sup> Sarah Matthews and Ben Matthews. “Reconceptualising feedback: Designing educational tangible technologies to be a creative material”. *International Journal of Child-Computer Interaction* 29, (September 2021). <https://doi.org/10.1016/j.ijcci.2021.100278> (accessed Dec. 1, 2025)

## IV. Final Word for Older Fish

We are swimming in a sea of momentous cultural change powered by the digital economy. Unwavering focus on shaping favourable conditions for digital wellbeing feels like swimming against the currents of raising corporate dominance, sweeping digital transformation policies and cascading technological developments. Still, the job of older fish is to keep returning to the question: “How’s the water?”

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# RETHINKING DIGITAL WELLBEING: INTERACTIVE ART, DATA, AND EMBODIED INTERFACES

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Dionysios Zamplaras\*

## **Abstract**

*This chapter explores digital wellbeing in the posthuman era through two immersive research-creation projects: SolastalgiaXR and Dr Cloud. Grounded in theories of enaction, agency, and more-than-human relations, the work investigates how embodied interaction within hybrid virtual-physical interfaces reshape the way we perceive, understand, and act within technologically mediated environments. By engaging users with ecological testimonies and complex medical datasets through multisensory interaction, these installations demonstrate that wellbeing emerges as a relational, situated process enacted across bodies, technologies, and environments.*

## **Keywords**

*Research-Creation; Interactive Art; Immersive Virtual Reality; Mixed Reality; Embodied Interaction; Agency; XR.*

## **I. Introduction**

In an age when technology increasingly mediates how we perceive, feel, and care, the notion of digital wellbeing should not be reduced to just the pursuit of comfort or psychological balance. Within the contemporary posthuman condition - where human and non-human agencies are deeply entangled - wellbeing could be reimagined as a relational process, shaped by multisensory experience, affective resonance, and the ways in which data, bodies, and environments interact.

This chapter approaches digital wellbeing through the lens of art and research-creation, examining how immersive and interactive systems can transform our understanding of care and presence in technologically mediated contexts. Moving beyond the idea of digital wellbeing as self-optimization, we consider it as a shared, multisensory condition that unfolds in the in-between of human and machine perception. Through artistic practice and design research, the projects discussed here explore how technology can foster empathy, attentiveness, and relational awareness.

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The first project, *SolastalgiaXR*, investigates the affective and ecological dimensions of digital wellbeing. It is a mixed reality (MR) installation that transforms material testimonies from communities affected by climate change into multisensory narratives and responsive spaces of memory. The second, *Dr Cloud*, is a collaborative art-science project that proposes an immersive virtual reality (IVR) platform for exploring complex medical datasets, encouraging embodied and intuitive engagement with scientific knowledge.

While these two projects originate from different contexts, they share a common concern: how can digital systems generate spaces of empathy, reflection, and connection? How might immersive technologies act as relational environments, capable of hosting meaningful experiences of care? By examining these questions, the chapter seeks to contribute to a broader reflection on the ethics and aesthetics of digital wellbeing. It argues that wellbeing, when approached through posthuman and multisensory practices, becomes less about the individual and more about the network of relations that sustain life - relations between people, technologies, data, and the world.

## II. A context for rethinking wellbeing in the posthuman condition

The contemporary understanding of wellbeing is often deeply marked by humanistic assumptions: the individual as a self-contained unit, the body as a stable boundary, and technology as an external tool to be used, optimized, or regulated. Within this paradigm, digital wellbeing is more often framed in terms of ergonomics, cognitive load, screen time, or emotional self-regulation - dimensions that, while important, ultimately reinforce a model of the subject as autonomous and separable from its technological and environmental surroundings.

However, the last decades of theory in posthumanism, new materialism, media studies, and affect theory have challenged this inherited framework. For Rosi Braidotti, “Humanism’s restricted notion of what counts as the human is one of the keys to understand how we got to a post-human turn at all”<sup>1</sup>. Other authors such as Donna Haraway<sup>2</sup>, Katherine Hayles<sup>3</sup>, and Karen Barad<sup>4</sup> have emphasized that human experience is always already co-constituted by technological, environmental, and non-human agencies. In this posthuman condition, the human cannot be understood apart from the infrastructures, signals, data flows, and ecological entanglements that shape its perception and action. Technology becomes an active mediator of relationality.

Within this context, wellbeing itself requires rethinking. Rather than a state that belongs to the individual, it emerges from the ongoing interactions between bodies, technologies, spaces, and environments. Wellbeing becomes relational: a property of complex systems, not subjects. This shift resonates strongly with the writings on care

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<sup>1</sup> Rosi Braidotti, *The Posthuman* (Polity Press, 2013), 16.

<sup>2</sup> Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*, Experimental Futures Technological Lives, Scientific Arts, Anthropological Voices (Duke University Press, 2016).

<sup>3</sup> Katherine N. Hayles, ‘Radio-Frequency Identification: Human Agency and Meaning in Information-Intensive Environments’, in *Throughout: Art and Culture Emerging with Ubiquitous Computing*, ed. Ulrik Ekman (MIT Press, 2013).

<sup>4</sup> Karen Michelle Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press, 2007).

ethics of Puig de la Bellacasa<sup>5</sup> and the affective theory of Massumi<sup>6</sup>, which both foreground the importance of connection, attunement, and the subtle circulations of attention and emotion that form the basis of shared experience.

### *A. Agency in technologically mediated environments*

Alan Turing, one of the founding figures of computer science and artificial intelligence, made a major contribution to the analysis and evaluation of emerging technologies<sup>7</sup>. His well-known test has often been interpreted as a benchmark for defining machine intelligence and agency. Yet, according to Kate Forbes-Pitt, this hypothesis about the nature of the respondent does not amount to a belief that the machine truly thinks. Beyond Turing's undeniable contributions to computer science and artificial intelligence, his work can also be seen as highly valuable for the social sciences and the arts<sup>8</sup>. The reason is it simultaneously offers a method for analyzing how humans interact with others - including technological entities - and how they construct expectations and affordances within such interactions.

From this perspective, the Turing Test becomes less an assessment of cognition and more an inquiry into agency: how humans perceive the ability of another entity - human or non-human - to act, respond, and participate meaningfully in an exchange. This shift highlights a crucial point for posthuman interaction design: our understanding of machines emerges through the embodied and relational dynamics that guide how we engage with them. The question is not simply whether machines can think, but how interaction shapes what we allow ourselves to recognize as intelligence and agency.

Indeed, many early theoretical approaches to HCI have been shaped by a rationalist and dualistic view of technology - one that inherits the Cartesian split between mind and body and reinforces the idea of information as immaterial<sup>9</sup>. Rooted in the foundational work of pioneers such as Turing and George Boole, this paradigm has long conceptualized computation as the manipulation of abstract symbols, influencing how cognition itself has been theorized. As Edmond Couchot observes, cognitive science has progressed through several major stages: from the cybernetic belief that thinking could be reduced to logical calculation; to cognitivism, where cognition became a physical computation on internal symbols; to connectionism, focusing on the self-organizing dynamics of living systems; and finally to the enactive model, where cognition arises from embodied, sensorimotor engagement with the environment. In this shift from abstraction to embodiment, cognition is no longer understood as a disembodied mirror of the world, but as an action that emerges through lived experience<sup>10</sup>.

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<sup>5</sup> María Puig de La Bellacasa, *Matters of Care: Speculative Ethics in More than Human Worlds*, Posthumanities 41 (University of Minnesota press, 2017).

<sup>6</sup> Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Duke University Press, 2002).

<sup>7</sup> Turing Alan Mathison, 'Computing Machinery and Intelligence', in *Mind Design II: Philosophy, Psychology, and Artificial Intelligence*, ed. John Haugeland (The MIT Press, 1950), <https://doi.org/10.7551/mitpress/4626.001.0001>.

<sup>8</sup> Kate Forbes-Pitt, *The Assumption of Agency Theory* (Routledge, 2014).

<sup>9</sup> Simon Penny, 'Sensorimotor Debilities in Digital Cultures', *AI & SOCIETY* 37, no. 1 (2022): 355–66, <https://doi.org/10.1007/s00146-021-01186-0>.

<sup>10</sup> Edmond Couchot, *La Nature de l'art : Ce Que Les Sciences Cognitives Nous Révèlent Sur Le Plaisir Esthétique* (Hermann, 2012).

## B. An enactive agency

Several theoretical frameworks have been developed to rethink agency in the context of machines and, by extension, interactive digital artworks. Actor-Network Theory (ANT), introduced by Bruno Latour and Michel Callon in the 1980s, analyzes how scientific and technical objects emerge from networks of human and non-human actors<sup>11</sup>. In this view, technology is not the result of a predetermined logic but of ongoing negotiations and controversies within a sociotechnical network. All components and entities - creators, viewers, devices, materials - participate symmetrically as actants, shaping the interactive artifact through their relations.

For Karen Barad, agency is a matter of interactions, an enactive relationship, “an enactment,”<sup>12</sup> thus expanding this relational perspective by defining agency as enactive and distributed, not an intrinsic property of subjects or objects. From this perspective, in an interactive artwork, agency can arise from how the participant positions themselves and interacts with other entities, consciously or unconsciously, allowing the whole to become a space where bodies and technologies continuously reconfigure one another.

Building on Barad, Nathaniel Stern emphasizes the performative aspect of human-technology relations, focusing on interactive art<sup>13</sup>. He challenges the notion that beings exist with fixed, pre-given attributes; instead, they emerge through evolving interactions. Within immersive installations, bodies, technologies, and meanings co-constitute one another, foregrounding performance as a central site where agency is enacted.

## C. Towards a posthuman sympoietic relation

In more advanced technologically mediated environments, these relations become even more complex. Digital systems can modulate sensation, frame perception, and produce new conditions for the emergence of agency, empathy and attention. Immersive technologies in particular - XR<sup>14</sup>, spatial audio, haptics, interactive installations - alter how bodies orient themselves in space and how they inhabit the space experience of others. In this sense, XR can be understood as a form of affective infrastructure: not just a medium but an environment that shapes capacities for feeling, sensing, and relating<sup>15</sup>.

Through this lens, entities form symbiotic and sympoietic relations - an ecological perception of systems in which beings do not simply co-exist. Donna Haraway, in *Staying with the Trouble* (2016), imagines futures where humans and non-humans must entangle and transform together in order to survive on a damaged planet<sup>16</sup>. While symbiosis refers to “living with,” Haraway insists on sympoiesis - “making with” - as an active condition of collective survival. In line with recent work that explores these intertwined dynamics

<sup>11</sup> Paul Marc Collin et al., ‘VIII. Michel Callon et Bruno Latour. La Théorie de l’Acteur-Réseau’, in *Les Grands Auteurs En Management de l’innovation et de La Créativité* (EMS Editions, 2016), <https://doi.org/10.3917/ems.burge.2016.01.0157>.

<sup>12</sup> Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, 214.

<sup>13</sup> Nathaniel Stern, *Interactive Art and Embodiment: The Implicit Body as Performance* (Glyphi Limited, 2013).

<sup>14</sup> XR stands for Extended or X Reality, it is an umbrella term encompassing immersive technologies in general.

<sup>15</sup> Fabienne Tsai, ‘La réalité virtuelle, un outil pour renouer avec la sensorialité ?’, *Hermès* n° 74, no. 1 (2016): 188, <https://doi.org/10.3917/herm.074.0188>.

<sup>16</sup> Haraway, *Staying with the Trouble*.

of human–nature–technology relations, immersive experiences can invite participants to such shared, co-constitutive agencies, emphasizing that wellbeing in the posthuman era can also depend on how we act with our environments<sup>17</sup>.

This relational view of posthuman wellbeing provides the conceptual foundation for examining the two projects discussed in this chapter. *SolastalgiaXR* engages directly with the emotional impact of environmental transformation, using immersive storytelling and multisensory interfaces to explore how digital systems can support forms of ecological attentiveness, shared memory, and collective vulnerability. *Dr Cloud*, approaches wellbeing through scientific and epistemic relationships. By designing an immersive environment for exploring complex medical datasets, it addresses how researchers relate to knowledge, uncertainty, and the bodies behind the data.

Together, these two examples highlight the diversity of possible approaches to wellbeing in the posthuman era. In both cases, technology plays a fundamental role in reshaping how bodies perceive and act, enabling new modes of interaction, empathy, and care.

In this sense, digital wellbeing can be also studied through an aesthetic and ethical perspective. Aesthetic, because it involves the shaping of perception, sensation, and experience. Ethical, because it concerns how we live - with technologies, with others, and within an increasingly unstable world. The role of immersive art and research-creation becomes crucial: not to offer solutions, but to open speculative spaces where new forms of relationality can be experienced and imagined.

In the following sections, *SolastalgiaXR* and *Dr Cloud* will demonstrate how this expanded framework of digital wellbeing can be embodied in practice. Through different methodologies and contexts, both works propose that wellbeing is not an outcome but a condition of being-with - an ongoing negotiation between bodies, technologies, and the sympoietic environments they create.

### III. Case Study I: SolastalgiaXR

*SolastalgiaXR*<sup>18</sup> is a multisensory, MR installation using material testimonies to unfold local community stories, addressing the emotional and ecological impacts of climate turmoils. The project highlights “solastalgia”<sup>19</sup> to describe the distress experienced when one’s home environment undergoes profound transformation that disrupts a sense of home. It takes as a case study the area of Thessaly in Greece, focusing on the devastating effects of the Daniel Storm in 2023. *SolastalgiaXR* combines immersive technologies with physical materials and testimonies gathered through fieldwork research. Merging art, science, and technology, it transforms complex ecological challenges into a tangible and emotionally resonant spatial and embodied experience.

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<sup>17</sup> Nefeli Georgakopoulou et al., ‘Towards a Sympoietic Relation with Materials in Interactive Artworks’, paper presented at 28th International Symposium on Electronic Art, Paris, France, *ISEA2023 PROCEEDINGS*, Ecole des arts decoratifs - PSL, 6 June 2024, <https://doi.org/10.69564/ISEA2023-59-full-Georgakopoulou-et-al-Sympoietic>.

<sup>18</sup> 2024, Created in collaboration with the artist collective Continuum. The Solastalgia XR prototype was developed as part of the “Onassis ONX Immersive Proof-of-Concept at Onassis ONX” project, with support from the Smart Attica European Digital Innovation Hub. <https://continuum-collective-xr.webflow.io/projects/solastalgia-xr> (last visited 25/11/2025)

<sup>19</sup> A term coined by Glenn Albrecht, <https://en.wikipedia.org/wiki/Solastalgia> (last visited 25/11/2025)



Fig. 1. *SolastalgiaXR*

### A. Testimony as Material: Voices of a Changing Landscape

In 2023, the Thessaly region in central Greece was severely affected by storm Daniel, resulting in widespread flooding of agricultural land and residential areas. As local communities confronted massive losses, external experts were invited to propose scenarios for the future of the region. However, during our fieldwork, several interviewees expressed concerns that official recovery strategies tend to overlook local knowledge, traditional agricultural practices, and the lived experience of residents.

As part of our research-creation methodology for *SolastalgiaXR*, we began with desk and OSINT research, conducting a location analysis of the most affected sites, their topography, land uses, and housing infrastructures. We examined official documents<sup>20</sup> - including environmental and hazard assessment reports - while also tracing the gaps and tensions that emerge between technical planning and the perspectives of local communities. This preliminary investigation informed the conceptual grounding of the installation, helping us understand not only what was lost, but how the future of the region is being contested.

As a second step, *SolastalgiaXR* was grounded in extensive field research and data collection in the region, mainly Palamas, Metamorfofi and Farkadona villages. This included conducting interviews and recording audio testimonies from local residents who experienced the events firsthand, as well as photographic and video documentation of the area. In parallel, we used drone footage and photogrammetry to capture architectural fragments, houses and household objects, and natural elements, generating 3D reconstructions and point-cloud models of homes, infrastructures, and landscapes. Archival material - photographs, official reports, satellite images - was also incorporated to reconstruct places and memories that could not be captured directly.

<sup>20</sup> Such as the HVA one, available at: <https://www.government.gov.gr/wp-content/uploads/2023/11/HVA-Fact-Finding-Mission-Report-on-Thessaly-Post-Disaster-Remediation.pdf> (last visited 26/11/2025).

These datasets were then transformed into an immersive spatial experience through a multi-layered design process (Fig. 2). Point-cloud environments were choreographed into a narrative XR space that mapped closely to the physical layout of the installation, enabling a continuous dialogue between virtual and real. The interactive system combined UX design, multimodal interaction, spatial sound, and 3D reconstructions to allow participants' movements to influence the unfolding of testimonies and visual elements. Throughout the development, we experimented with the interplay of high-end technologies (XR headsets, spatial audio, real-time systems) and low-tech, tactile materials integrated into the scenography - together forming a hybrid ecosystem through which the story could be sensorially and emotionally encountered.

By treating testimony as spatial material rather than informational content, *SolastalgiaXR* reconfigures how a participant encounters the lived experiences of others, moving beyond representation to create a choreographed ecology of attention. This approach aligns with theories of affect and relationality, which emphasize that understanding is not solely cognitive but arises through bodily attunement. For Erin Manning, we realize the world by interacting with it, and through this we gain a sense of self and being in the world (“bodying” and “worlding”)<sup>21</sup>. As one navigates the installation, the testimonies are felt, experienced as atmospheric presences that demand a slowing down, a careful listening, a willingness to coexist with the vulnerability of others.

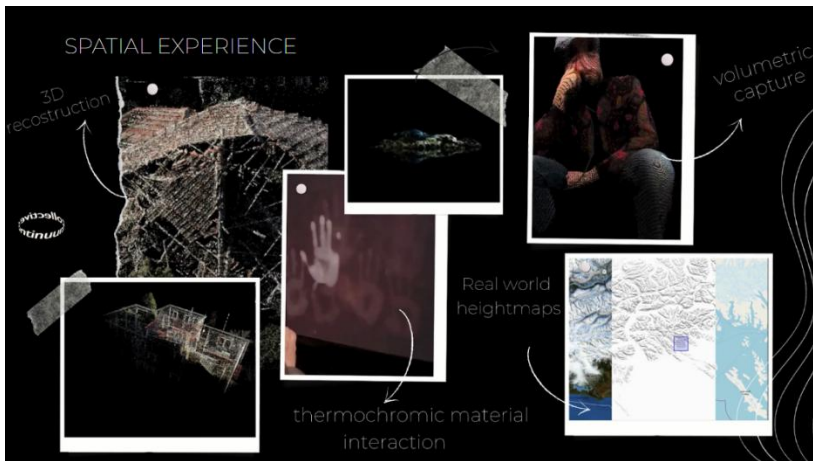


Fig. 2. Designing the spatial experience, *SolastalgiaXR*

### B. 3D reconstruction and Embodied Memory

One of the central elements of *SolastalgiaXR* is the integration of 3D scans of destroyed or damaged homes, objects and landscapes (Fig. 3). These objects function partly as realistic reconstructions and partly as spectral traces. They appear semi-transparent, oscillating between states of solidity and disappearance, sometimes even giving the impression of being subtly animated. This aesthetic choice is deliberate. The installation

<sup>21</sup> Erin Manning, *Relationescapes: Movement, Art, Philosophy*, 1. MIT paperback ed, Technologies of Lived Abstraction (MIT Press, 2012).

prioritizes the affective charge of objects that bear witness to loss. Their unstable materiality mirrors the unstable ontological state of the communities affected: existing between what has been lost and what remains.



Fig. 3. Photogrammetry reconstructions, *SolastalgiaXR*

### C. Intelligent Materials and Responsive Environments

In *SolastalgiaXR*, visitors enter a dark, room-scale environment (approximately  $4 \times 4$  meters) while wearing a MR headset and hearing the distant, unsettling ambiance of an approaching flood. Before fully perceiving the virtual layer, the immersant is invited to get acquainted with the physical space, which includes a wall coated with thermochromic nanoparticle paint - a type of smart material that temporarily changes color through variations in surface temperature caused by touch, breath, or proximity. This material becomes the primary interface of interaction, encouraging users to engage with it freely and intuitively (Fig. 4). As the wall responds to bodily warmth, virtual elements within the headset visibly emerge: landscapes, visual traces, and narrative fragments tied to the past, present, and speculative futures of Thessaly gradually reveal themselves. The immersant, through touching, gaze and body movement, activates layers of testimony and environmental memory.



Fig. 4. Users interacting with the smart material interface in *SolastalgiaXR*

*SolastalgiaXR* is considering the use of physical scenography to structure different narrative paths, entangling stories that interact and interweave with the immersant, creating visual, spatial and audio interactable affordances to explore. In this way, the smart-material interface operates on two levels simultaneously: functionally, as a trigger for the unfolding narrative, and symbolically, as a tangible representation enacting how

human presence leaves marks on fragile ecosystems. Through this reciprocal interplay, the installation situates wellbeing not in comfort, but in embodied recognition of vulnerability and impact.

#### *D. Immersive Experience as Empathy and Care*

Research into the effectiveness of artistic practices and immersive technologies in raising awareness about environmental and emotional issues supports this project<sup>22</sup>. Climate change can be difficult to grasp because its effects unfold over time and are often far distant from their causes. This temporal and spatial distance makes it even more difficult to raise awareness and achieve mindful and durable behavioral change. While traditional media, such as films, can significantly help to understand this subject, immersive experiences can have a stronger psychological impact, reinforcing empathy and environmental awareness. Other research<sup>23</sup> has yielded similar results, revealing the cognitive benefits of immersive experiences, which lead to a better understanding of issues and a high rate of adoption of best practices, especially in the field of environmental awareness<sup>24</sup>.

Digital wellbeing, in this context, can be considered as an emergent property of the participant's embodied relation with testimony, space, and material. In the willingness to navigate fragile environments, in the openness to listen to others' stories, in exploring the survivors' psychological and emotional aftermath, in fostering empathy and in the recognition of one's own position within broader ecological processes.

This form of care echoes the work of Puig de la Bellacasa, for whom caring is not a moral imperative but a sensory and affective labor: a practice of remaining with complexity<sup>25</sup>. *SolastalgiaXR* therefore frames digital wellbeing not as comfort, but as the capacity to remain present within discomfort - an idea profoundly relevant to environmental grief and anxiety.

## **IV. Case Study II: Dr Cloud**

While *SolastalgiaXR* deals with testimonial narratives and ecological affect, *Dr Cloud*<sup>26</sup> investigates the relational and cognitive dimensions of scientific practice. The project explores how immersive technologies and artistic practices can support clinicians and researchers in navigating, interpreting, and reflecting upon large-scale medical datasets, particularly those relating to rare genetic diseases. *Dr Cloud* is an interdisciplinary

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<sup>22</sup> Stefan P. Thoma et al., 'Increasing Awareness of Climate Change with Immersive Virtual Reality', *Frontiers in Virtual Reality* 4 (February 2023): 897034, <https://doi.org/10.3389/frvir.2023.897034>.

<sup>23</sup> Emmanuelle P. Kleinlogel et al., 'Immersive Virtual Reality Helps to Promote Pro-Environmental Norms, Attitudes and Behavioral Strategies', *Cleaner and Responsible Consumption* 8 (March 2023): 100105, <https://doi.org/10.1016/j.clrc.2023.100105>.

<sup>24</sup> Furthermore, the *SolastalgiaXR* prototype has so far been presented in the Onassis ONX laureates Open Days 2024, receiving overwhelming feedback on its impactful engagement, narrative potential and esthetic qualities: <https://www.onassis.org/art/works/solastalgia-xr> (last visited 25/11/2025)

<sup>25</sup> Puig de La Bellacasa, *Matters of Care*.

<sup>26</sup> An ongoing project that started at 2021, as a collaboration between the Imagine Institute (Necker Hospital, Paris) and the research laboratory of the Ensad-PSL (École Nationale Supérieure des Arts Décoratifs), funded by Vulca Chair.

research-creation project developed in collaboration with the Imagine Institute and the research laboratory of the Ensad-PSL that aims to transform the researcher's relation to data by reintroducing embodied perception, spatial reasoning, and intuitive exploration into the process of knowledge formation. In this sense, the project examines digital wellbeing within an epistemic context: wellbeing as the capacity to engage meaningfully, attentively, and creatively with complexity.

### *A. Sensible Interactions in IVR*

In 2018, we began creating the Tamed Cloud project<sup>27</sup> - an IVR and interactive experience - designed to encourage serendipity and promote sensible relationships with large sets of artistic data. This interactive device, proposed as an IVR installation, enables multimodal interactions with large digital data sets. Seeking a sensible and aesthetic relationship through IVR, Tamed Cloud creates sensory proximity - visual, auditory, and tactile - with data presented in the form of a virtual cloud with behavior (Fig. 5). This experience attempts to activate the body and cognitive abilities, which are inseparable from emotion and the body in action, during creative research activities.



Fig. 5. The Tamed Cloud experience

Our hypothesis is that such an embodied approach to artistic data research can prove very beneficial for artists and researchers in the fields of arts and culture. However, over time, we realized the multitude of applications of the same approach in other areas of research. As such, the project is developing into a dynamic platform that can be adapted

<sup>27</sup> 2018-2023 François Garnier, Dionysios Zamplaras, Fabienne Tsai et Léon Denise. Tamed Cloud is an Ensad-PSL, supported by the PSL Valorisation – Qlife 2019 early-stage program, the French National Fund for Research and Innovation (Fonds national de valorisation), and indirectly by the French National Research Agency (ANR) and the French government under the “Investments for the Future” program. Tamed Cloud was the winner of the Institut Cognition’s “IBM Watson Bluemix 2017” call for projects in “Artificial and Cognitive Intelligence,” a field of research concerned with the articulation of quantitative data with biological, biomechanical, and psychological models of human behavior. <https://spatialmedia.ensadlab.fr/tamed-cloud/> (last visited 25/11/2025).

to different data sets. Thus, *Dr Cloud* project was born with the aim of developing a version of the device for exploring large sets of medical data.

With growing interest in physical and embodied interaction in art on the one hand, and the emergence of hospital data warehouses requiring appropriate exploration tools on the other, we are designing this project that combines design and data science to optimize or renew the exploration of complex medical data. It aims to offer researchers and clinicians subjective and immersive interaction with clinical and genetic data in order to stimulate creative research in the field of rare diseases. Our hypothesis is that our work will ultimately lead to a new approach to analyzing complex multimodal data, thereby generating new medical research hypotheses and promoting insights through sensory engagement and heuristic research.

### *B. From Abstract Data to Embodied Experience*

In recent decades, healthcare institutions have been generating large volumes of multimodal data<sup>28</sup>. However, this data is often less accessible to the people who generate it and could benefit from its analysis the most: clinicians and researchers. Moreover, medical datasets - especially those involving genomics, phenotypes, and clinical histories - are often characterized by high dimensionality, opacity, and abstraction. Traditional interfaces may present them as tables, charts, or statistical plots that require significant cognitive effort to decode. These representations, while useful, risk to separate the researcher from the lived reality behind the numbers. *Dr Cloud* addresses this gap by transforming medical data into spatialized, immersive environments.

A central design problematic in *Dr Cloud* is how to give meaningful form to patient data within an IVR setting. Each patient is represented as an avatar whose appearance and structure convey the diversity of their multimodal records. The intention is to create a feeling of closeness to the data while enabling users to read complex medical information through a codesigned visual language and clear perceptual cues. The avatars are built as layered visual abstractions of clinical data, organized from broad descriptors down to detailed features (Fig. 6). This hierarchical design offers a scalable way to visualize heterogeneous information across three levels and turns patient records into a coherent visual language that can be intuitively compared and explored in IVR.

In the IVR installation, datasets are represented not as fixed points but as dynamic entities that respond to the researcher's presence, gestures, or movement. As an alternative to interpreting information on a screen, the researcher enters a three-dimensional inhabitable data space, where relationships become sensible as much as understood. This embodied approach aligns with theories of enactive cognition, which argue that perception is not a passive reception of information but an active loop with action, a situated engagement with the world<sup>29</sup>. By enabling researchers to navigate data through embodied interaction in IVR, *Dr Cloud* invites them to develop an intimate,

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<sup>28</sup> Nicolas Garcelon et al., 'A Clinician Friendly Data Warehouse Oriented toward Narrative Reports: Dr. Warehouse', *Journal of Biomedical Informatics* 80 (April 2018): 52–63, <https://doi.org/10.1016/j.jbi.2018.02.019>.

<sup>29</sup> Maurice Merleau-Ponty, *Phénoménologie de La Perception* (Gallimard, 1945); Francisco J. Varela et al., *L'inscription corporelle de l'esprit: sciences cognitives et expérience humaine*, Points 818 (Éditions Points, 1993); Alva Noë, *Varieties of Presence* (Harvard university press, 2012).

spatial understanding of relationships - correlations, anomalies, proximities - that might otherwise remain invisible.

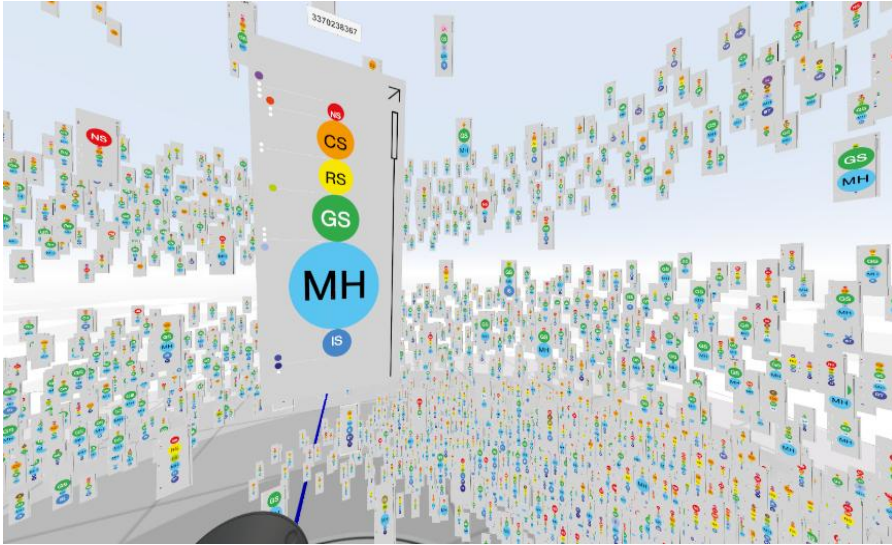


Fig. 6. The first level of avatar representation in Dr Cloud

### C. Multimodal Interaction and the Design of Scientific Intuition

In *Dr Cloud*, users are invited to interact in immersion with a cloud of images, alive and malleable. The cloud, designed as an entity that behaves autonomously, resembles a flock of birds. This dynamic quality highlights the relational nature of the data, inviting users to approach it and explore its responsiveness and content. Through multimodal interactions users can connect with, explore, select, and spatially organize the data around them at two distinct scales. At the cloud level, the entire dataset can be reorganized into various metadata-driven spatial configurations, each highlighting a different dimension of the dataset (Fig. 7). At the data level, users interact directly with patient avatars and medical records.

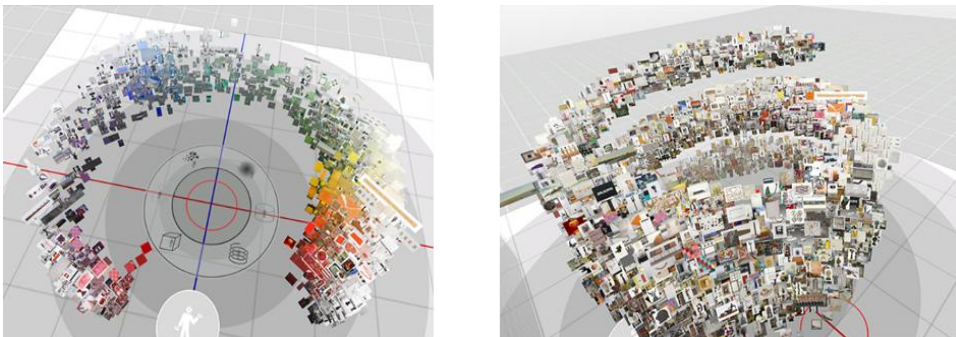


Fig. 7. Spiral and Cylindrical geometrical configuration of data, Tamed Cloud/Dr Cloud

More specifically, the system integrates motion-based navigation, gesture tracking, voice interactions and interactive spatial sound, as well as subtle haptic cues. Users can modify the behavior of part or all of the cloud, as well as perform selection, organization, and memorization tasks. These modalities seek to enhance presence and immersion, and structure the way the data behave and become meaningful, intelligible and sensible. Moreover, they elevate the aesthetic qualities of the tool by highlighting our interdisciplinary art-science approach.

Through such interactions, the system seeks to cultivate scientific intuition - a form of pre-analytical awareness that helps the researcher orient themselves before formal analysis begins. Changes in the behavior and the organization at the user's request thus may promote certain relations and associations between the data. But it is also possible that unexpected and intuitive associations may begin to emerge, which the user would not necessarily have thought of. It is precisely this latter approach to embodied interaction that could respond to our hypothesis and objective of setting up a device that will enable sensible relationships to be rediscovered or invented, by bringing the immersive user into contact and interaction with new digital materialities.

#### *D. Hybrid Space: Between Laboratory and Studio*

*Dr Cloud* occupies a unique epistemic space: part laboratory tool, part artistic installation, part speculative interface. Its design process involved iterative workshops with data scientists, artists, and clinicians, reflecting a collaborative methodology that blurs the boundaries between disciplines. The project proposes that scientific inquiry can benefit from artistic methods - intuition, sensory experimentation, spatial thinking - while artistic practice can be enriched by scientific rigor and ethical responsibility.

The installation thus becomes a "middle space" where art and science explore each other's limits and possibilities. This resonates with the idea of hybrid environments discussed earlier: spaces where human and non-human agents co-produce meaning. In *Dr Cloud*, the hybrid environment enables a reimagining of what it means to "understand" data, shifting from abstraction to embodied relation.

#### *E. Digital Wellbeing as Epistemic Care*

Within this conceptual landscape, *Dr Cloud* allows us to rethink digital wellbeing in a research context. Here, wellbeing does not solely refer to the researcher's comfort or productivity. Instead, it points to the conditions that support meaningful cognitive and affective engagement with complexity. As such, our approach to epistemic wellbeing may include the ability to navigate dense information without feeling overwhelmed; the time and space to explore, hesitate, and reflect; the cultivation of scientific imagination.

By designing for intuition as much as for efficiency, *Dr Cloud* reframes the role of digital tools in scientific practice. *Dr Cloud* seeks to serve as a hypothesis generation tool through heuristic research, but also to create a space for wandering, hesitation, curiosity, and surprise - qualities often marginalized in data-driven contexts but essential to support insight and facilitate both scientific and creative research.

## V. Discussion

The role of situated action and bodily engagement in shaping reasoning and perception have been researched and validated across cognitive sciences, arts and other scientific contexts. IVR has been widely adopted since long as “valid and highly ecological without compromising experimental control,”<sup>30</sup> with a multitude of applications in various fields, both as a research tool and as a therapeutic device<sup>31</sup>. Placing users inside IVR environments can enhance analytical processes tied to embodiment and presence<sup>32</sup>, while more recent studies also indicate that when objects, whether physical or virtual, appear close to the body, the brain is capable of automatically evaluating possible interactions with them, activating spatial and perceptual mechanisms and geometries that can support new ways of understanding information<sup>33</sup>.

Jaron Lanier, one of the pioneers of immersive systems, describes VR as a technology that may make users appear absurd from the outside, yet enables profoundly meaningful experiences from within, making them radiate with joy or surprise<sup>34</sup>. For him, VR marks a “scientific, philosophical, and technological frontier:”<sup>35</sup> a medium that pushes our understanding of what it means to be human in terms of cognition and perception. It is powerful enough to evoke wonder and beauty while remaining equally vulnerable to fear and unease. Through VR, the boundaries between reality and fiction become porous, allowing new modes of experience in which the virtual and the physical coexist. Such environments not only expand artistic expression but also serve as research tools, prompting critical reflection on perception and the construction of reality.

From an enactive and phenomenological standpoint - rooted in thinkers such as Merleau-Ponty, Varela, Noe and others - experience emerges through the embodied interaction of a situated body with its environment. Whether in physical or virtual space, the subject navigates, perceives, and acts through interfaces that shape meaning and influence the unfolding of events.

*SolastalgiaXR* and *Dr Cloud* emerge from very different contexts - one grounded in artistic practice and ecological testimony, the other in an art–science collaboration within

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<sup>30</sup> Jack M. Loomis et al., ‘Immersive Virtual Environment Technology as a Basic Research Tool in Psychology’, *Behavior Research Methods, Instruments, & Computers* 31, no. 4 (1999): 557–64, <https://doi.org/10.3758/BF03200735>; Mel Slater et al., ‘A Separate Reality: An Update on Place Illusion and Plausibility in Virtual Reality’, *Frontiers in Virtual Reality* 3 (June 2022): 914392, <https://doi.org/10.3389/frvir.2022.914392>.

<sup>31</sup> Yuk Ming Tang et al., ‘A Systematic Review of Immersive Technology Applications for Medical Practice and Education - Trends, Application Areas, Recipients, Teaching Contents, Evaluation Methods, and Performance’, *Educational Research Review* 35 (February 2022): 100429, <https://doi.org/10.1016/j.edurev.2021.100429>; Chaitanya Kumar Javvaji et al., ‘Immersive Innovations: Exploring the Diverse Applications of Virtual Reality (VR) in Healthcare’, *Cureus*, ahead of print, 14 March 2024, <https://doi.org/10.7759/cureus.56137>.

<sup>32</sup> Loup Vuarnesson et al., ‘Shared Diminished Reality: A New VR Framework for the Study of Embodied Intersubjectivity’, *Frontiers in Virtual Reality* 2 (September 2021): 646930, <https://doi.org/10.3389/frvir.2021.646930>.

<sup>33</sup> François Garnier, ‘Artistic Practices in Digital Space: An Art of the Geometries of Movement?’, in *Space-Time Geometries for Motion and Perception in the Brain and the Arts*, ed. Tamar Flash and Alain Berthoz, Lecture Notes in Morphogenesis (Springer International Publishing, 2021), [https://doi.org/10.1007/978-3-030-57227-3\\_12](https://doi.org/10.1007/978-3-030-57227-3_12).

<sup>34</sup> Jaron Lanier, *Dawn of the New Everything: Encounters with Reality and Virtual Reality* (Henry Holt And Company, 2017).

<sup>35</sup> Lanier, *Dawn of the New Everything: Encounters with Reality and Virtual Reality*, 10.

a medical research environment. Yet despite these differences, both projects share a common concern: they seek to rethink how digital systems can foster new forms of relation, attention, and care.

In both cases, digital wellbeing is not framed as a psychological indicator or an objective. Instead, wellbeing is understood as a relational condition - a way of being-with other bodies, with environments, and with data. Contemporary approaches to digital wellbeing often focus on metrics such as attention, cognitive load, productivity, or regulation of screen time. While these concerns are not irrelevant, they tend to reinforce a model of the subject as an isolated individual whose wellbeing is secured by minimizing distraction and optimizing performance. Technology appears as a potential threat to be managed or as a tool to be tamed. *SolastalgiaXR* and *Dr Cloud* push against this paradigm in different ways. In both projects, attention is a relation to be cultivated through the quality of interactions between bodies, technologies, and environments.

Embodiment plays a central role in both works as a mechanism through which understanding and care emerge. In *SolastalgiaXR*, the body becomes a node of memory, while in *Dr Cloud*, the body functions as an instrument of thought. In both cases, embodiment is simultaneously epistemic and affective. It allows participants and researchers to know through their bodies and to feel in ways that enrich that knowing. Digital wellbeing thus becomes tied to the capacity of bodies to remain involved and responsive.

Another convergence between the two projects lies in their creation of hybrid, responsive and relational spaces. In *SolastalgiaXR*, scanned objects overlap with physical architecture, and intelligent materials respond to gestures and proximity. The installation becomes a hybrid organism, responsive to the presence of participants. In *Dr Cloud*, the laboratory, the headset, the data cloud, and the researcher's body together form a composite interface - a hybrid environment for thinking and feeling with data. Wellbeing, in this view, is not a matter of escaping technology but of inhabiting it differently - of designing and engaging with environments that recognize our interdependence with non-human agents, infrastructures, and narratives.

*SolastalgiaXR* and *Dr Cloud* do not offer definitive answers or ready-made models. Instead, they function as experimental propositions: concrete, situated attempts to imagine how art, science, and technology might converge to support new modes of being-with others, with data, and with a changing world through the lens of posthumanism. In this sense, they point toward an expanded notion of digital wellbeing - one that is less about feeling good and more about staying present, together, within the tensions and transformations that define our time.

## VI. Conclusion

Digital wellbeing is often framed as a matter of balance, reduced exposure, or better regulation of one's digital habits. While these approaches respond to important concerns, they remain anchored in a humanistic conception of the subject as autonomous, self-contained, and fundamentally separable from its technological environment. The two projects examined in this chapter - *SolastalgiaXR* and *Dr Cloud* - invite us to rethink this conceptual framework by foregrounding the relational, embodied, and affective dimensions of technologically mediated experience.

Together, the projects demonstrate that digital wellbeing cannot be reduced to metrics of optimization or protection. Instead, it should be understood as a sympoietic ecology - one that includes emotional, cognitive, bodily, and technological dimensions. Immersive environments can serve as catalysts for this expanded conception by enabling hybrid spaces and forms of coexistence.

Ultimately, the posthuman era calls for a reconsideration of how we design and inhabit digital systems. Tools are never merely tools, “there is no such thing as clean technology”<sup>36</sup>; they shape what we can perceive, how we can act, and who we can become with others.

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# BEYOND REALITY: EXPLORING THE SYNERGY OF THE METAVERSE, NON-FUNGIBLE TOKENS, AND INTERNET OF THINGS

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## **Abstract**

*The intersection of the metaverse, non-fungible tokens (NFTs), and the Internet of Things (IoT) has given rise to a new era of digital convergence, transforming the way we interact, conduct commerce, and experience culture. The metaverse represents a vast digital universe offering immersive social experiences, while NFTs establish authenticity and ownership for unique digital assets. Concurrently, IoT technology interlinks myriad devices, producing real-time data that enriches user experiences in both physical and virtual settings. This study examines the characteristics and applications of these technologies, as well as their pressing challenges, ethical dilemmas, and regulatory concerns, emphasizing the need for informed stakeholder engagement to foster responsible innovation that prioritizes inclusivity and user agency in the emerging digital landscape.*

## **Keywords**

*Metaverse; NFTs; IoT.*

## **I. Introduction**

In recent years, the convergence of the metaverse, non-fungible tokens (NFTs), and the Internet of Things (IoT) has sparked unprecedented academic interest and public discourse, heralding a new era of digital interaction, economic engagement, and social transformation. As technological innovation accelerates, these interconnected realms present significant opportunities for reshaping user experiences, challenging traditional notions of ownership, and redefining interpersonal relationships in virtual spaces. The metaverse, characterized by immersive environments and persistent digital identities, invites users to participate in an ongoing dialogue within communal landscapes that promote creativity and collaboration. Concurrently, NFTs revolutionize the ownership of digital assets by embedding scarcity and authenticity through blockchain technology, thereby altering perspectives on artistic expression and economic transactions. Meanwhile, the proliferation of IoT devices enables real-time data exchange, enhancing

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operational efficiencies and creating smart environments that blur the lines between the physical and the digital.

However, this rapid evolution does not come without challenges. As the integration of these technologies deepens, key issues emerge surrounding data privacy, security vulnerabilities, and the ethical implications of a more interconnected reality. While scholars have begun to unpack the transformative potential of these dimensions, much remains to be explored regarding their convergence and societal impacts. This paper seeks to investigate the intricate relationships among the metaverse, NFTs, and IoT, examining not only their individual characteristics and applications but also the broader implications of their intersection. By engaging in this interdisciplinary discourse, we aim to illuminate a landscape of both remarkable innovations and substantial responsibilities, fostering a deeper understanding of how these technologies can be harnessed to promote ethical practices, inclusive growth, and equitable access in the digital age.

## II. Related Work

The academic exploration of the metaverse, non-fungible tokens (NFTs), and the Internet of Things (IoT) is rapidly evolving, reflecting the urgency of these technologies in contemporary discourse. This intersection necessitates a multidisciplinary approach, bringing together insights from computer science, economics, sociology, and cultural studies to understand their social, economic, and ethical implications. A growing body of literature emphasizes the transformative potential of these interconnected realms.

One prominent theme within the literature is the capability of the metaverse to revolutionize user interaction and perceptions of ownership. Wider et al. (2023) conducted a bibliometric analysis demonstrating an increase in interdisciplinary scholarship on the metaverse, which encompasses diverse areas such as community dynamics, digital identity, and virtual economies. These studies underscore the metaverse's capacity to foster new forms of social engagement and economic transactions. Research indicates that immersive experiences in the metaverse enhance student engagement and retention, fostering experiential learning through virtual field trips that allow exploration beyond the physical limitations of traditional education (To et al. 2024; Camilleri 2024).

Examining NFTs reveals significant interest in their economic dimensions and the shifting paradigms of ownership within digital art and collectibles (Murray 2023). NFTs challenge traditional notions of authenticity and authorship, allowing creators to monetize their work directly. However, debates over sustainable practices within NFT markets highlight the tension between speculative investment behaviors and genuine appreciation for art, raising questions about the nature of value in digital economies (Zhang 2023; Aksoy and Uner 2021). Moreover, the environmental concerns linked to blockchain technology's ecological impact are increasingly prevalent, prompting scholars to advocate for energy-efficient blockchain solutions to address the sustainability of NFTs (Far and Bamakan 2023).

The literature surrounding IoT emphasizes its transformative potential across various sectors, with research showing that IoT can significantly enhance operational efficiency in healthcare, manufacturing, and urban infrastructure (Asif and Hassan 2023). For instance, the integration of IoT devices facilitates real-time monitoring and automation,

improving resource management and health outcomes. However, as the interconnectedness of these devices increases, so do vulnerabilities to cybersecurity risks, necessitating robust security measures to protect sensitive information (Kaur et al. 2023; Nath and Nath 2022).

Furthermore, the socio-ethical implications of IoT technology are critical, particularly regarding data privacy and ownership (Sadeghi 2025). The interconnected nature of IoT devices raises important questions about how organizations utilize personal data, emphasizing the need for responsible data practices and policies that prioritize user rights.

Despite the growing body of research, significant gaps remain in understanding how the metaverse, NFTs, and IoT intersect. There is a need for comprehensive studies that examine their convergence concerning societal impacts, ethical dilemmas, and user experiences. Such interdisciplinary collaboration is essential to bridge knowledge gaps, inform policy discussions, and ensure ethical practices that promote inclusive growth and equitable access (Gaber et al. 2023).

### **III. Metaverse and Applications**

The metaverse is a continuous, interactive virtual environment that uniquely blends user experiences, enabling active engagement and collaboration among users while allowing for the creation of user-generated content. It spans various applications, including gaming, education, commerce, and social interaction, presenting immersive experiences and community-building opportunities. However, the metaverse also introduces significant challenges, such as security risks like hacking and data breaches, concerns about digital well-being and addiction, complexities of digital asset ownership through NFTs, and pressing data privacy issues that necessitate robust regulatory frameworks. As the metaverse evolves, it offers innovative opportunities while requiring careful attention to its associated challenges to ensure responsible and inclusive development.

#### *A. Definition and Characteristics*

Defining the metaverse requires an exploration of its unique characteristics that set it apart from traditional digital experiences. The metaverse operates as a continuous and shared environment that exists independently of individual user interactions, fostering a sense of belonging among users, as their actions have lasting consequences (Ritterbusch and Teichmann 2023). Users can create and modify digital spaces, contributing to an evolving communal landscape that mirrors real-life social dynamics. A defining characteristic of the metaverse is its interactivity, which empowers users to engage actively with both content and other users (Ng 2022). This level of engagement can range from simple social interactions to complex collaborative tasks, leading to enriched experiences and deeper relationships within the virtual realm.

Additionally, the metaverse thrives on user-generated content (Hadi et al. 2024) democratizing creativity and challenging traditional gatekeeping roles in art, music, and gaming. This shift not only amplifies diverse forms of expression but also raises important issues regarding copyright protections and creative rights management. The metaverse operates under a unique economic framework that employs cryptocurrencies, tokens, and virtual currencies to facilitate transactions (Zhang 2023). This innovative

economic infrastructure reshapes consumer-producer relationships and prompts vital discussions on regulation, taxation, and the implications of virtual currencies (Weinberger 2022). Overall, the metaverse represents a multifaceted space where technological innovation, social interaction, and economic activity converge, offering promising opportunities while presenting significant challenges that require continual exploration and consideration.

### *B. Applications of the Metaverse*

The metaverse impacts gaming, education, and commerce, offering immersive experiences but also raising challenges. In gaming, platforms like Fortnite foster social interaction, though youth addiction is a concern. In education, virtual environments enhance learning, but access disparities exist. In commerce, interactive shopping environments, enhanced by features like virtual try-ons, transform retail but raise data privacy issues. Overall, the metaverse introduces new economic models while necessitating responsible data handling to maintain consumer trust.

### *C. Gaming*

The gaming industry exemplifies a major sector within the metaverse, showcasing immersive experiences that merge play, social interaction, and commerce (Yaqoob et al. 2023). Platforms like Fortnite and Roblox serve as interconnected social ecosystems that enable community building through collaborative gameplay and socialization. However, concerns about addiction, particularly among younger audiences, necessitate robust discussions about digital well-being (Mishra and Awasthi 2022).

### *D. Education*

The metaverse holds transformative potential for education, facilitating immersive and experiential learning opportunities (Camilleri 2024). Virtual campuses and simulations allow students to engage in realistic practices, enhancing their understanding of complex subjects. However, addressing equity concerns becomes essential as access to technology can be limited for marginalized communities (Gaber et al. 2023).

### *D. Commerce*

As commerce evolves within the metaverse, it is increasingly disrupting traditional retail models and leading to novel consumer interactions (Jung et al. 2024). Retailers are now able to establish immersive shopping environments that allow users to engage dynamically with products (Mishra and Awasthi 2022). In these virtual settings, consumers can explore virtual showrooms that closely mimic physical stores, browse products, and benefit from enhanced interactive features. Notably, concepts such as virtual try-ons for clothing and accessories, often facilitated by augmented reality (AR), are enhancing the shopping experience, allowing consumers to visualize items before making purchasing decisions.

Moreover, the focus on personalized shopping experiences raises vital questions regarding data privacy. Retailers collect vast amounts of consumer data to tailor their marketing strategies, which can foster a more engaging and relevant shopping experience. However, ensuring responsible data handling and transparency is essential to building and maintaining consumer trust in this new landscape.

The metaverse also introduces new economic models, with virtual goods and currencies functioning alongside traditional economic systems. This shift not only enriches the shopping ecosystem but also strengthens the direct relationship between brands and consumers. As businesses leverage the extensive consumer data gathered from interactions within virtual stores, they are better equipped to meet individual consumer needs and further enhance the overall shopping experience.

### *E. Social Interaction*

The metaverse redefines social 5 Industry Initiatives dynamics, enabling users to connect based on shared interests (Rony et al. 2024) Virtual communities support diverse identity expression through avatar representation, yet concerns related to authenticity and the potential for social isolation require critical examination.

### *F. Industry Initiatives*

As various tech giants increasingly prioritize the Metaverse, Meta stands out for its significant initiatives aimed at shaping future experiences within this digital realm. While other companies like Apple, Microsoft, and Google are also exploring their own variations of the Metaverse, the interplay of these different platforms could ultimately enrich our understanding and engagement with the concept. This section highlights several key products that Meta is developing, emphasizing their goal to influence users' perception of the Metaverse gradually. The discussion serves as a case study on specific products anticipated to be part of the future Metaverse landscape, as illustrated in Figure 1 (Allam 2022).

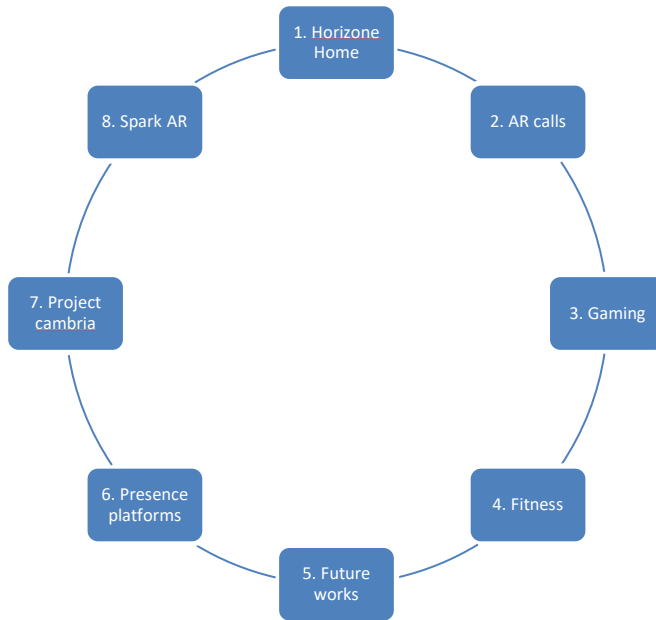


Fig. 1. Products unveiled by Meta at its product launch event. The flowsheet was created with data taken from (Allam et al. 2022)

### G. Challenges

Despite the remarkable potential of the metaverse, numerous challenges must be addressed to ensure its responsible and inclusive development. Key issues concerning security, digital well-being, privacy, and equity remain paramount (Oladokun et al. 2024)

As digital interactions grow in complexity, the metaverse's increased connectivity exposes users to various security risks, including hacking, phishing, and data breaches. Protecting user data and ensuring the security of virtual environments have become critical concerns. To effectively address these risks, it is essential for stakeholders across industries to collaborate in establishing robust cybersecurity measures that evolve in response to emerging threats, particularly those targeting personal information or exploiting vulnerabilities in interconnected systems (Nath and Nath 2022).

Moreover, as individuals spend more time in the metaverse, promoting digital well-being becomes increasingly important. There are pressing concerns regarding addiction, mental health issues, and the effects of prolonged screen time, particularly among younger audiences who may be more susceptible to these challenges. Addressing these issues requires a comprehensive strategy to encourage mindful usage of digital technologies.

### H. Digital Assets and Ownership

NFTs play a pivotal role in transforming ownership within the metaverse by providing a framework for securing authenticity and ownership claims associated with digital assets (Popescu 2021). Through blockchain technology, NFTs enable users to prove ownership,

establish provenance, and trade digital assets in a transparent manner. This transformation has significant implications for artists and creators, as it empowers them to monetize their work and retain control over their intellectual property. However, concerns regarding copyright, ownership rights, and potential legal disputes over original content continue to be pressing issues that scholars and industry professionals must address (Vidal-Tomás 2022; Gebreab et al. 2024).

### *I. Privacy and Data Security Concerns*

The expansion of the metaverse raises significant privacy and data security concerns as users share vast amounts of personal data. The interconnected nature of digital assets, user interactions, and Internet of Things (IoT) devices creates a complex landscape where sensitive information is increasingly at risk (Sadeghi 2025; Yaqoob et al. 2023). Users' digital identities can be exposed to unauthorized parties due to inadequate security measures, phishing attacks, or data breaches. Moreover, the integration of IoT devices introduces additional vulnerabilities; the compromise of a single device could lead to cascading security breaches across interconnected systems.

In light of these growing privacy risks, there is an urgent need for robust regulatory frameworks governing data collection and storage practices within the metaverse. Regulatory bodies must collaborate with technology developers to create accountable practices that ensure users have the right to privacy and control over their data (Oladokun et al. 2024). Establishing clear guidelines and accountability measures is crucial for protecting consumer rights and fostering trust among users. Additionally, promoting user education on digital safety practices is essential for empowering individuals to navigate the complexities of data sharing within these immersive environments effectively.

## **IV. NFTs**

Non-fungible tokens (NFTs) represent a significant advancement in the ownership and exchange of unique digital assets, enabling creators to establish scarcity and provenance through blockchain technology. They enhance user experiences in the metaverse by facilitating ownership verification, aiding users in constructing digital identities, and fostering community interactions. However, the NFT space faces several challenges, including environmental concerns related to energy-intensive blockchain transactions, copyright issues arising from unauthorized minting of works, and speculative market behaviors reminiscent of financial bubbles. These challenges highlight the need for comprehensive regulatory frameworks to protect creators, ensure sustainability, and enhance market stability. Prioritizing accountability will be essential to fully harness the potential of NFTs in the evolving digital landscape.

### *A. What are NFTs?*

Non-fungible tokens (NFTs) represent a revolutionary advancement in the minting, ownership, and exchange of unique digital assets. Characterized by their non-fungibility, each NFT possesses unique attributes that cannot be exchanged on an equal basis (Murray 2023). This intrinsic uniqueness allows digital assets such as art, music, and

virtual properties to have individual market values, fundamentally changing the landscape of ownership and artistic expression. Creators can establish scarcity and provenance in a digital economy long characterized by the ease of replication.

The blockchain technology underlying NFTs provides an immutable and transparent ownership history, enhancing buyer confidence by allowing for the verification of authenticity and provenance (Murray 2023). This traceability raises important discussions regarding intellectual property rights, data integrity, and the potential for errors or misrepresentation within the NFT marketplace. Furthermore, NFTs operate across various digital environments, leading to innovative applications within the metaverse (Vidal-Tomás 2022). This interoperability facilitates the sharing and utilization of assets across multiple platforms, fostering creative collaborations and offering users diverse opportunities for engagement.

However, the rapid evolution of the NFT space presents challenges, notably the absence of standardized principles across platforms, which complicates the creation of seamless user experiences. The NFT ecosystem encompasses a variety of marketplaces where users engage in transactions, with high-profile sales drawing significant media attention and raising questions about the speculative nature of their value. These dynamics position NFTs as digital collectibles, analogous to physical artworks or rare trading cards, while also pushing the boundaries of how we perceive ownership in the digital realm.

### *B. NFTs in the Metaverse*

Within the metaverse, NFTs play multifaceted roles that enhance user experiences and redefine community interactions. One of the primary functions of NFTs is ownership verification, providing a secure means for users to establish ownership of digital assets. This capability allows individuals to claim virtual items, experiences, and ownership rights (Popescu 2021), reinforcing notions of value and fair transactions within digital ecosystems. It paves the way for new economic models and interactions built on mutual respect for creators' rights.

Additionally, NFTs contribute significantly to users' construction of digital identities. They allow individuals to showcase collections and assets that reflect their personal values, interests, and affiliations (Vidal-Tomás 2022). As NFTs serve as status symbols in the virtual arena, they foster community building and enhance social interactivity, encouraging users to engage more deeply within their virtual environments.

Furthermore, the unique economic system facilitated by NFTs establishes a reciprocal relationship between creators and consumers, fostering a vibrant marketplace for creativity (Yaqoob et al 2023). Artists and designers can earn royalties on secondary sales of their work, creating a sustainable income stream that disrupts the structure of the conventional marketplace. This transformation empowers creators while allowing collectors to develop more profound connections to their purchased works.

### *C. Issues and Controversies*

The emergence of Non-Fungible Tokens (NFTs) has sparked significant interest and investment, yet several pressing issues and controversies necessitate critical examination

of their broader implications. One of the predominant concerns surrounding NFTs is their environmental impact. Much of the criticism centers on the energy-intensive nature of proof-of-work blockchains, which are commonly used for minting and trading NFTs (Far and Bamakan 2023). The considerable energy consumption associated with these transactions raises alarms, particularly as discussions on climate change intensify. Advocates for sustainability are championing the need for a shift toward more environmentally friendly blockchain practices, such as implementing proof-of-stake mechanisms, in order to reduce the carbon footprints associated with NFT transactions.

Another significant controversy revolves around copyright issues. As NFTs proliferate in the digital marketplace, many creators have found their works minted without consent, leading to widespread disputes over ownership and intellectual property rights (Aksoy and Uner 2021). This troubling trend highlights the inadequacies of current copyright laws in the digital space, where the decentralized nature of blockchain complicates the protection of artists' works. Scholars and industry leaders are increasingly advocating for the establishment of comprehensive regulatory frameworks that ensure better protection for creators and their intellectual property.

Lastly, market speculation within the NFT realm draws parallels to historical financial bubbles characterized by speculative rather than substantive worth (Murray 2023). The dramatic price fluctuations and the potential for market manipulation prompt concern among observers regarding the stability and legitimization of NFT assets. As participants navigate the complexities of value in the NFT space, it becomes crucial to provide educational resources that equip newcomers with a nuanced understanding of the ethical, financial, and cultural implications tied to NFT ownership. Additionally, the dynamic nature of the NFT market calls for ongoing discussions about reforming these ecosystems to enhance accountability and sustainability while protecting cultural assets from commodification (Cholevas et al. 2024).

While NFTs hold significant promise for digital ownership and creativity, their associated challenges—ranging from environmental consequences and copyright infringement to speculative market behaviors—underscore the need for critical discourse and comprehensive regulatory approaches that safeguard both creators and the environment. As the landscape of NFTs continues to evolve, prioritizing accountability and sustainability will be essential to harnessing their full potential responsibly.

## **V. IoT**

The Internet of Things (IoT) is a network of interconnected devices that collect and analyze data in real-time, enhancing decision-making across sectors like healthcare and urban development. While facilitating personalized experiences in the metaverse—such as fitness tracking and smart home integration—IoT also raises concerns about data privacy and cybersecurity. Addressing these challenges requires robust security measures, standardized protocols, and ethical considerations to maintain user trust and ensure the sustainable growth of IoT technologies.

### *A. Understanding IoT*

The Internet of Things (IoT) represents a comprehensive framework of interconnected devices designed to gather, transmit, and analyze data in real time, fundamentally reshaping interactions between individuals and their environments. This technology fosters smarter decision-making and enhances user experiences across various sectors, including healthcare, manufacturing, agriculture, and urban development (Asif and Hassan 2023). At its core, IoT is driven by the integration of sensors, actuators, and devices that operate collaboratively to achieve specific objectives often with minimal human intervention. Sensors play a critical role in this ecosystem, collecting quantitative data from diverse parameters such as temperature, humidity, and user movement (Asif and Hassan 2023). For instance, smart thermostats like Nest exemplify how IoT devices can learn user patterns to optimize energy consumption, allowing remote control via mobile applications and demonstrating significant potential for efficiency and cost savings.

The communication between the myriad of devices within the IoT network occurs through various protocols and network technologies, facilitating seamless data exchange (Oladokun et al. 2024). The advent of advanced communication technologies, notably 5G, has further enhanced the speed and efficiency of data transmission, bridging gaps between disparate devices. This capability is particularly crucial in applications like smart city initiatives, where interconnected sensors manage traffic flow by redirecting vehicles based on real-time congestion data. These applications not only serve to reduce environmental impacts but also significantly improve urban mobility and overall livability.

Moreover, the extensive data generated by IoT devices enables organizations to perform in-depth analytics that transform raw information into actionable insights (Asif and Hassan 2023). This data-driven approach assists in optimizing resource allocation, enhancing operational effectiveness, and informing strategic decision-making. For example, in the retail sector, IoT devices can monitor inventory levels in real time, allowing businesses to streamline their supply chains, reduce costs, and enhance customer satisfaction.

Despite the numerous benefits associated with IoT implementation, the interconnected nature of these systems presents significant challenges, particularly concerning data privacy and cybersecurity. As device networks expand, vulnerabilities are amplified, necessitating robust security protocols to safeguard users from potential breaches and unauthorized access to sensitive information (Nath and Nath 2022). Therefore, it is essential for organizations to prioritize these aspects to maintain user trust and ensure the sustainable growth of IoT technologies.

### *B. Role of IoT in the Metaverse*

The integration of Internet of Things (IoT) technology within the metaverse opens up transformative opportunities that significantly enhance user interactions and redefine immersive experiences. As IoT devices continuously collect and transfer data into metaverse environments, users experience a seamless merging of physical and digital realms (Sadeghi 2025). One prominent example of IoT's impact in the metaverse is in the realm of fitness and health. Wearable devices, such as fitness trackers, allow users to

monitor their health metrics—like heart rate and activity levels—while participating in virtual fitness classes. This real-time data not only informs instructors about participant performance but also enables the creation of tailored workouts that adapt to each individual's health metrics. The result is a personalized and immersive user experience that fosters increased engagement and commitment to fitness goals (Oladokun et al. 2024).

Smart home devices further illustrate the integration of IoT within the metaverse by offering users the ability to interact with their physical surroundings in virtual spaces. For instance, users can visualize and adjust their home settings through metaverse applications. This innovative use of IoT enhances convenience and creates a cohesive blend of experiences that span both real and digital environments, ultimately providing users with novel solutions for managing their daily lives (Oladokun et al. 2024).

Organizations leveraging IoT-generated data can enhance user experiences within the metaverse by crafting customized interactions that resonate with users. Through the analysis of user behavior patterns and preferences, businesses can refine their service offerings and marketing strategies, resulting in an increasingly personalized digital interaction (Asif and Hassan 2023). This data-driven approach not only enriches the user experience but also cultivates a sense of community among users as they collaborate and interact in these immersive environments. Despite the myriad benefits, it is crucial to address the ethical considerations surrounding data privacy and security. As the reliance on IoT technology grows, ensuring user trust becomes paramount. Organizations must prioritize the protection of user data to foster a safe and secure environment within the metaverse, which is vital for fostering long-term user engagement and loyalty (Sadeghi 2025). The integration of IoT with the metaverse further enables the creation of more realistic and interactive virtual environments by enabling dynamic responses to real-world events (Asif and Hassan 2023). As illustrated in Figure 2 Augmented reality (AR) devices play a critical role in this process. First, an AR device analyzes the visual input and identifies a physical object. Then, the AR application connects the device to a 3D digital twin of the object stored in a secure cloud. Data flows from the sensors to the cloud, where it is processed and combined with other relevant data. The AR interface allows the user to interact with the object, sending commands that are relayed through the cloud for feedback control. This interaction allows a user to manipulate the real world through the metaverse.

The role of IoT in the metaverse is multifaceted, enhancing user experiences through personalized interactions, seamless integration of physical and digital environments, and data-driven customization. However, as this technology continues to evolve, addressing ethical considerations surrounding data privacy will be essential in building and maintaining user trust.

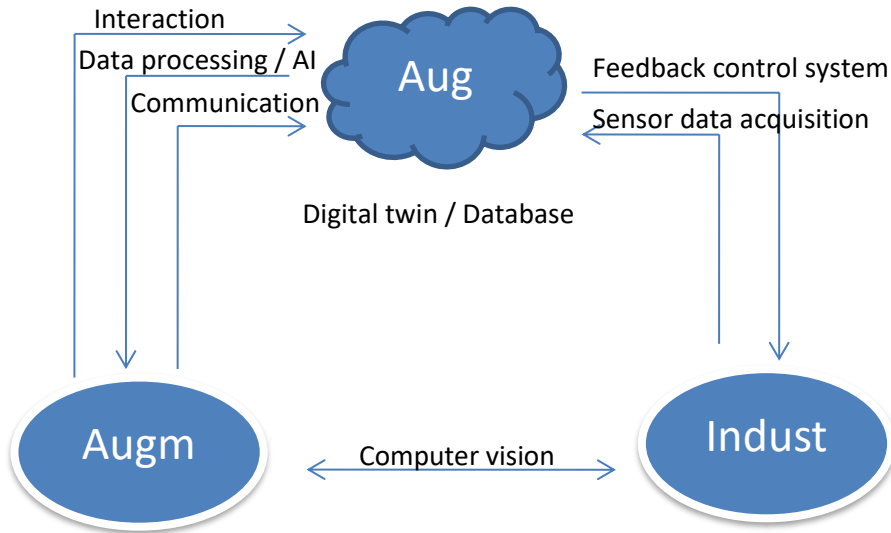


Fig. 2. The core process of augmented reality (AR) devices involving communication links, data, analytics and cloud computing.

### C. Challenges and Considerations of IoT in the Metaverse

The integration of Internet of Things (IoT) technology into the metaverse presents significant challenges alongside its many advantages. Foremost among these challenges are security and privacy concerns. The interconnected nature of IoT devices creates considerable security vulnerabilities, raising the risk of data breaches that can compromise sensitive personal information and disrupt essential systems (Sadeghi 2025; Goyal et al. 2024). The complexity and diversity of IoT devices further complicate the development of robust security measures, rendering them susceptible to exploitation by cybercriminals (Kaur et al. 2023). To combat these threats, it is essential to evolve cybersecurity frameworks continuously, possibly through advanced security protocols like deep learning-based intrusion detection systems designed to identify and neutralize potential breaches (Nath and Nath 2022; Gaber et al. 2023).

Furthermore, scalability and standardization issues emerge as the proliferation of IoT devices introduces interoperability challenges. The absence of standardized protocols can fragment user experiences, necessitating a collaborative approach among industry stakeholders to develop cohesive frameworks that enhance user satisfaction (Alsamhi et al. 2023). Additionally, ethical considerations must be addressed, as organizations navigate the balance between leveraging user data for personalized experiences and maintaining individual privacy. Establishing clear regulatory frameworks is vital for ensuring compliance with data protection regulations and fostering transparency in user data practices, thus empowering communities and building trust (Zawish et al. 2023).

## VI. Challenges and Future directions

The intersection of the metaverse, non-fungible tokens (NFTs), and Internet of Things (IoT) technologies creates opportunities for innovation, but also poses significant challenges related to security, interoperability, and data privacy. To address these concerns, organizations should employ a layered cybersecurity approach, prioritize user education, and establish robust protocols to foster safer digital environments. Additionally, the development of common standards and regulatory frameworks is necessary to support technological advancement and enhance interoperability.

### *A. Interlinking the Metaverse, NFTs, and IoT*

The interconnection of the metaverse, non-fungible tokens (NFTs), and Internet of Things (IoT) technologies offers substantial opportunities for innovation, but it also poses significant challenges related to security, interoperability, and ethical considerations (Asif and Hassan 2023). The integration of these technologies aims to create a seamless user experience, enabling individuals to navigate effortlessly between physical and virtual realities. However, achieving true interoperability is a critical challenge, as diverse platforms and ecosystems often operate in isolation.

One of the primary concerns within this interconnected digital landscape is security risks. The interactions among these technologies can exacerbate existing vulnerabilities; weaknesses in one area can lead to breaches that compromise both user data and digital assets (Sadeghi 2025). To mitigate these risks, organizations should employ a layered cybersecurity approach combining advanced technologies, user education, and robust protocols to foster safer digital environments. Collaboration among organizations is essential for sharing insights and strategies to defend against evolving threats.

Additionally, the issue of interoperability arises from the variability in technology standards across different platforms, creating barriers to seamless integration and cohesive user experiences (Alsamhi et al. 2023). These disparities can prevent users from easily transferring assets between ecosystems, leading to a fragmented experience that undermines user engagement. Therefore, it is crucial for developers, industry leaders, and lawmakers to collaborate in establishing common standards that support technological advancement and enhance interoperability.

Moreover, the rapid evolution of the metaverse, NFTs, and IoT necessitates the creation of regulatory and legal frameworks. Existing laws regarding digital ownership, data privacy, and consumer rights must be adapted to effectively address the nuances of digital assets, particularly within metaverse environments (Zawish et al. 2023). Ongoing dialogues among industry stakeholders are vital for crafting inclusive regulations that protect user rights while simultaneously encouraging innovation.

### *B. Security, Interoperability, and Data Privacy Concerns*

As the integration of the metaverse, non-fungible tokens (NFTs), and the Internet of Things (IoT) creates increasingly complex digital experiences, addressing security, data privacy, and ethical considerations becomes critical (Zawish et al. 2023). Empowering users involves cultivating trust and ensuring they have control over their data and digital

identities, which places pressure on technology developers to prioritize privacy and user rights in their system designs.

One of the paramount issues is data privacy, the accumulation of data across interconnected devices and virtual interactions necessitates the implementation of robust privacy measures. Users must maintain the right to control how their data is accessed, collected, and utilized, making it essential to enhance transparency in data collection practices, establish consent mechanisms, and educate users about the implications of sharing personal information (Rony 2024).

Another critical ethical concern is ethical data usage, where companies collecting user data are obligated to uphold high ethical standards regarding privacy and informed consent. Developing frameworks for responsible data handling that emphasize user engagement and accountability is crucial for fostering trust within digital ecosystems (Zawish et al. 2023).

Additionally, the psychological impacts of increasingly immersive engagement within the metaverse must be acknowledged and examined. Such deep immersion raises vital questions about mental health and digital well-being (Oladokun et al. 2024), with concerns including the risk of addiction, identity distortion, and the psychological effects of prolonged exposure to virtual environments. Therefore, conducting research to understand these trends and developing strategies that promote healthy digital engagement—particularly for vulnerable populations like children and teenagers—is essential.

Future research must engage deeply with the ethical ramifications of emerging technologies, advocating for responsible design practices that consider potential psychological impacts while promoting digital well-being. Lastly, institutions and organizations should prioritize creating inclusive spaces that welcome diverse perspectives and encourage equitable access to technology, empowering users from all backgrounds to actively participate in the evolving digital landscape.

## **VII. Conclusions**

The convergence of the metaverse, non-fungible tokens (NFTs), and the Internet of Things (IoT) represents a transformative evolution reshaping the realms of technology, culture, and economy. These emerging technologies facilitate innovative forms of interaction, commerce, and identity exploration, significantly altering social dynamics and empowering users. However, this rapid evolution brings with it immense responsibilities. Stakeholders across various sectors must prioritize ethical considerations, inclusivity, and user agency to ensure that the evolving digital landscape serves as a positive force for society. It is imperative to foster accountable practices and promote equitable access to technology, thereby creating a future where digital connectivity inspires creativity, cultivates community, and enhances societal well-being. Ultimately, navigating the multifaceted landscapes of the metaverse, NFTs, and IoT requires ongoing dialogue and interdisciplinary collaboration, along with an unwavering commitment to responsible innovation. By deeply engaging with the complexities and ethical implications of these technologies, we can empower individuals and work toward a more equitable and interconnected world.

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## EPILOGUE

### WELLBEING IN THE POSTHUMAN ERA: TWISTING TOGETHER AN OLD WITH A NEW IDEA

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Anna Markopoulou\*

The writing of this collective work has come to an end... And the time has come for critical reflection, for revisiting the questions posed at the beginning of this research. Questions that formed the conceptual core around which all the chapters of this book were composed and structured. I would formulate these questions in the following way: What is the meaning of *wellbeing* and how can it, nowadays, take on a new meaning, one that will answer the inquietudes and questions of nowadays human living in a digital environment? In some way like that, a new question came to the fore: Can we, today, talk about a *digital wellbeing* and, if so, what will be its meaning and significance?

In this regard, I would say that the nature of the question itself about the digital wellbeing dictated the *method* of approaching it: A method that *intertwines* the old with the new, in other words the ancient Greek concept of *wellbeing* with *digital* technology; through this intertwining, wellbeing took on a new meaning that, in my opinion, can respond on the one hand to those who maintain a technophobic attitude towards technology; on the other hand to those who uncritically mythologize technology and believe that only modern technology can bring the desired progress to society...

However, both these tendencies, the technophobic attitude and the uncritical mythification of technology, are fundamentally *anthropocentric*, since both are imbued with the same spirit of human supremacy over technology, which they treat in an *instrumental manner*. I would also say that both tendencies are part of a postmodern perception, that of the *palimpsest*, according to which they either selectively recycle the old and reject the new or, on the contrary, reject the old and mythologize the new.

In this light, the answer to this anthropocentric attitude that characterizes postmodernism is the posthumanist concept of the *interweaving* of the old with the new. This is precisely where, in my view, lies the new meaning of wellbeing, since it presupposes a *non-anthropocentric* attitude regarding the relationship between human and technology. In this context, one of the main goals of this collective research was to highlight the shift from the *dualistic* - and deeply *anthropocentric* - opposition between human and technology to their *posthumanist interweaving*.

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However, in order to *twisting* together the old with the new, that is, the ancient Greek concept of wellbeing with digital technology, two worlds, completely different from each other, would first have to be interwoven. Thus, academic researchers belonging to the world of the so-called *Human Sciences* collaborated with academic researchers belonging to the world of the so-called *Positive Sciences*.

The *rencontre* of these two worlds, which is rare, even non-existent in the academic world, was for me one of the most important virtues of this research. As it became apparent in the course of the research, the *interdisciplinary dialogue* that emerged from this interweaving of the two worlds, evolved into a very fruitful collaboration, for all of us who participated in it, since it gave us the opportunity, not only to exchange ideas, but also to collaborate creatively.

Finally, I would say that the creative collaboration that emerged from the *rencontre* of these two worlds was fruitful, because it filled a large gap in the bibliographic research of the field of posthuman studies: It highlighted the way in which concepts detected in the texts of ancient Greek philosophers (e.g. the *broader meaning* of wellbeing, that of *eudaimonia*, the construction of the *posthuman self* through the *non-anthropocentric care of the self* and the *inclusive dimension* of nature) can enrich the research on digital wellbeing with new meanings.

I would like to close this short epilogue with the hope that this book will be read, not only by academic researchers, but also by a much wider audience. This is because I believe that the *posthumanistic interweaving* of the old with the new, which was, as I mentioned before, the ancient Greek concept of the wellbeing with digital technology, comes to answer both the technophobes and those who, in a spirit of *Prometheanism*, uncritically mythologize technology, considering it as a *panacea* for all the pathogenesis of nowadays society...

## CONTRIBUTING AUTHORS

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Her research work supported in the context of national and EU funded projects, focuses on the topics of Capability Oriented Requirements Engineering, Enterprise Modelling, Information Systems Privacy and Cultural Informatics. She is the co-editor of the book: Aspects of representation – Studies on art and technology. She has published over 60 papers in international conference proceedings, edited books and academic journals, including the Requirements Engineering Journal, Information Systems Journal, IEEE Transactions on Systems, Man, and Cybernetics and Springer Lecture Notes on Computer Science.

**ANGELIKI KITSIOU** is Assistant Professor of Sociology of Internet and Design of Social Requirements for contemporary digital environments at the Department of Cultural Technology and Communication of the University of Aegean. She is a member of the Privacy Engineering and Social Informatics (PrivaSI) Laboratory of the Department. Since 2017 she has taught at the Hellenic Open University in the MSc “Educational Sciences”, in the Thematic Unit “Education: Cultural Diversities and Social Inequalities”, and since 2020 at the School of Pedagogical & Technological Education (ASPETE) the course “Educational Research Methodology”. She elaborated her post-doctoral research at the Department of Cultural Technology and Communication and received her PhD from the Department of Sociology of the University of the Aegean. She also holds a certificate of Pedagogical and Teaching Proficiency from ASPETE. She has participated in several funded programs concerning the interrelation of new technologies with fields such as education, social control and privacy in digital environments, innovative educational methodologies and quality assurance methods, as well as in applied social policies for immigration and young people. Her research interests and publications in peer-reviewed journals and conferences focus on the field of the Sociology of Internet and Social Informatics.

**PANOS KRITIKOS** is a graduate of the Department of English Language and Literature at Aristotle University of Thessaloniki, a postdoctoral researcher at the Department of Cultural Technology and Communication at the University of the Aegean, and a secondary school teacher. He is the author of the studies *Tracing the Fantastic: Greek Fantasy Comics 1978-2005* (with Evi Sampanikou / published by futura, 2005) and *Comic Worlds of the Fantastic: Visualisation and Ideological Representations in Fantasy Comics* (forthcoming). His writings on comics have been published in various essay collections, in the magazines *Babel*, *Mov.* and *Gran Gignol*, as well as on *comictimod.gr* and *greekcomics.gr*. He is the publisher of the non-profit company *Enati Diastasi*, which specializes in publishing comics by Greek creators, and one of the organizers of the *Comic n’ Play Comics and Board Games Exhibition*, which has been held annually since 2001 in Thessaloniki.

**ANNA MARKOPOULOU** studied at the Department of Philosophy, Education and Psychology, University of Ioannina, and at the Department of Educational Sciences, University of Sorbonne, Paris V René Descartes, where in 1994 she was awarded her Ph.D. During the preparation of her doctoral thesis, she worked in the field of Sociology of Education as a member of a Research Group in the laboratory of the French National Foundation for Scientific Research (C.N.R.S.). She has taught Philosophy of Education and Pedagogical Theory at the National and Kapodistrian University of Athens and the School of Pedagogical and Technological Education (ASPETE) in Athens.

Since 2008, her research has focused on ancient Greek philosophy with emphasis on Platonic and Neoplatonic philosophy. Since 2015 she has been a regular member of the Greek Philosophical Society, while since 2021 she has been a regular member of the International Plato Society. From 2017 until today, she has taken part in a series of international conferences with the general title “Beyond Humanism Conferences” on topics related to ancient Greek philosophy. From April 2023 she is a Postdoctoral Researcher in Philosophy at the University of the Aegean (Department of Cultural Technology and Communication).

**JEAN-MARC MATOS**, choreographer. Dancer, choreographer, teacher, and artistic director of the pluridisciplinary K. Danse company, he develops work in four Art, Science & Dance areas: creation, mediation, research, and transdisciplinary platform, developing numerous creative projects mixing contemporary dance and digital arts. <https://www.k-danse.net/en/>. Born in Bogota, he's lived in eight countries and now resides in Toulouse, France. Graduated from the INSA (National Institute of Applied Sciences, Toulouse, France) as a computer science engineer, then trained in modern dance (under Merce Cunningham) and American postmodern dance (Lucinda Childs, David Gordon) in New York, he creates hybrid choreographic / technological projects (immersive performances, participatory interactive projects, online performances, site-specific performances) and develops multiple mediation actions. He is interested in the impact of digital technology on society, in order to develop a meaningful relationship between dance and new media and explores, in close collaboration with other artists, choreographic composition and its links with computer sciences, AI, robotics, motion capture, XR immersive environments, telematics.

**EVI SAMPANIKOU** is Professor of Visual Culture and Art History at the Department of Cultural Technology and Communication at the University of the Aegean. She has also studied Archeology and English Literature. She has previously taught at the University of Thrace and has been collaborating with the Hellenic Open University for years. She focused her research initially on post-Byzantine painting, then on art theory, photography, new media art, comics & graphic novels and cultural management. Combining the above with the extensions of contemporary philosophy in art, she actively participates in international research activities related to Posthumanism and is a founding member of the Beyond Humanism Conference Series. Among her recent publications are the books: Evi D. Sampanikou (ed) (2017). *Audiovisual Posthumanism*, Cambridge Scholars Press, and Evi D. Sampanikou & Jan Stasienko (eds) (2021), *Posthuman Studies Reader. Core Readings on Transhumanism, Posthumanism and Metahumanism a Reader on Posthumanism*. Schwabe Verlag.

**ZACHAROULA SERETI** is a graduate of the Mechanical Engineering Department of the Technological Educational Institute of Central Greece. In recent years, she has been working as a Mechanical Engineer in the Technical Works Infrastructure Department of the company “Hellenic Hypermarkets Sklavenitis SA, specializing in studies and techno-economic analyses of energy savings in air conditioning systems, as well as in the control of HVAC systems through building management systems (BMS).

**STEFAN LORENZ SORGNER** is a philosophy professor at John Cabot University in Rome, Director and Co-Founder of the Beyond Humanism Network, Fellow at the Institute for Ethics and Emerging Technologies (IEET), Research Fellow at the Ewha Institute for the Humanities at Ewha Womans University in Seoul, academic Advisor of Humanity+, and Visiting Fellow at the Ethics Centre of the Friedrich-Schiller-University in Jena. He is editor of more than 10 essay collections, and author of the following monographs: *Metaphysics without Truth* (Marquette University Press 2007), *Menschenwürde nach Nietzsche* (WBG 2010), *Transhumanismus* (Herder 2016), *Schöner neuer Mensch* (Nicolai, 2018), *Übermensch* (Schwabe 2019), *On Transhumanism* (Penn State University Press 2020), *We have always been cyborgs* (Bristol University Press 2022), *Philosophy of Posthuman Art* (Schwabe 2022), *Transhumanismus* (mit Philip von Becker, Westendverlag 2023), *Homo ex Machina* (together with Bernd Kleine-Gunk, Goldmann 2023). In addition, he is Editor-in-Chief and Founding Editor of the “Journal of Posthuman Studies” (a double-blind peer review journal, published by Penn State University Press since 2017). Furthermore, he is in great demand as a speaker in all parts of the world (World Humanities Forum, Global Solutions Taipei Workshop, Biennale Arte Venezia, TEDx, Colours of Ostrava) and a regular contact person of national and international journalists and media representatives (Die Zeit, Cicero, Der Standard; Die Presse am Sonntag, Philosophy Now, Il Sole 24 Ore). [www.sorgner.de](http://www.sorgner.de) & [www.mousike.de](http://www.mousike.de).

**IOANNA-MARIA STAMATI** is a PhD candidate at the Department of Cultural Technology and Communication, University of the Aegean. Her doctoral research, “Navigating Cultural Narratives: A Comparative Study of Greek TV Series and South Korean K-Dramas in the Global Media Landscape”, investigates creative labor, authorship, and industrial organization in transnational television production. She holds a Master’s degree in Semiotics, Culture and Communication from the Aristotle University of Thessaloniki and a Bachelor’s degree in Cultural Technology and Communication from the University of the Aegean. Her research interests focus on posthumanism, media philosophy, and the comparative study of cultural industries, with a particular interest in East Asian cultures and their global circulation.

**EVI STAMOU** is an awarded producer, filmmaker and researcher based in Athens, Greece. She studied political economy at Athens University of Economics and Business, filmmaking at the Hellenic Cinema Television School Stavrakos and holds an MA at Cultural Technology and Communication -specializing at Documentary Production- from the University of the Aegean.

For 11 years in her artistic practice, she studies the relation and aesthetic boundaries between the traditional cinematic forms and the evolving approaches of modern art, focusing on using the new types of media offered by the constantly emerging

technologies in the field of video. Her works have been selected to participate in international film festivals, video art festivals and contemporary art exhibitions in Greece and abroad (Visions du Réel International Film Festival, DOC NYC, Cinemed International Mediterranean Film Festival of Montpellier, Strangoscope Experimental Film, Audio & Performance International Festival, Athens Avant Garde Film Festival, Venice International Experimental Art Festival, Athens Digital Arts Festival – ADAF, International Meetings of Video art and Video performance, Thessaloniki International Documentary Festival etc.), as well as in independent art spaces and galleries in Greece, USA (New York - Chicago), Brazil, Poland, Ireland, Italy, Spain, Portugal, Indonesia, China and elsewhere.

In 2021 she founded Maketa Media, a production company focused on production and digital distribution of documentary and hybridic films in order to help Greek independent filmmakers, and she co-founded Interferences, a nonprofit cultural organization with the aim to design cultural interventions that explore the interactions between the art of cinema and other arts, science, technology and politics in physical and digital spaces. Since 2023, she regularly participates in the annual Beyond Humanism Conferences, presenting her ongoing research on the interconnections between body, nature and technology. In 2025, she was selected as one of the 17 European “Emerging Producers for 2026” by Jihlava International Documentary Film Festival.

**IOANNIS STATHOYIANNIS** achieved a BA Honor’s in Fine Arts, with specialty in Time Based Media and Digital Art (2000). Masters in Arts and Design, Animation (2001). Stathoyiannis’ next step was to teach as a Lecturer (2006-2008) in Visual Communication Department, at Raffles LaSalle Institute in China- Guangzhou, Raffles Education Corporation Singapore. Upon his arrival in Greece, he received an Arts teaching degree (2010) from Athens School of Fine Arts. Currently Stathoyiannis works for the Greek Ministry of Education as an Art teacher (10 years) and in (2025), he accomplished his doctoral degree with “Excellent” with the title: “Cultural continuity and discontinuity in traditional and modern design and animation. The case of Monkey King a cultural expression of China”, in the Department of Cultural Technology and Communication of the Aegean University.

His writing work focuses on gathering, recording and reviving Greek and Chinese myths. His first bilingual book entitled “Cultural Traveling between Greece and China” was published in China in (2007) and received significant distinctions and awards, while in (2010) it was translated into Greek. His artwork deals with prints in fabric (mixed media). In 2014 he was inspired to create the “Stathoyiannis Is & Zhu”, a 200 experiential art pillows collection and a dialogue with 29 artists transforming a Cretan hotel into a living contemporary art space.

Stathoyiannis has collaborated with noteworthy corporations active in the field of Art and Culture, Advertising, Communication and Fashion, Institutes and several Municipalities and has submitted proposals for Digital Technology, Animation and Virtual Reality, in Greece and abroad. He is an active member of the Art Chamber of Greece, the Hellenic Chinese Chamber of Greece, and the Union of Graphic Artists of Greece.

**STELARC**'s projects explore alternative anatomical architectures. He has performed and exhibited in Japan, Korea, China, Europe, the USA, South America and Australia. He is acknowledged internationally as a pioneer in Performance, Media Arts and by the Augmented Humans research community. He has used biomedical instruments, prosthetics, robotics, virtual systems and the internet for his projects and performances.

He has visually probed and acoustically amplified his body. Between 1973-1976 he filmed 3m of internal space, probing his stomach, lungs and colon. And with his early performances amplified his brainwaves (EEG), heartbeat (ECG), blood-flow (ultrasound sensors) and muscles (EMG). Exploring the physical and psychological parameters of the body he has realised 27 suspension performances in different positions, locations and circumstances.

He has performed with a Third Hand, an Extended Arm, a Stomach Sculpture, industrial robot arms, 6-legged walking robots and a Prosthetic Head. In 1995 for *Fractal Flesh* at "Telepolis" his body was remotely choreographed using muscle stimulation. People in the Pompidou in Paris, the Media Lab in Helsinki and the Doors of Perception in Amsterdam were able to access his body remotely and interact with it. *Ping Body* in 1996 and *Parasite* in 1997 were online performances where the body was animated by internet data. The body becomes a split body, voltage-in actuating the body, voltageout controlling his Third Hand.

In 2006 an ear was surgically constructed on his arm, the intent being to electronically augment the ear to internet enable it, becoming a remote listening device for people in other places. In 2016, for PICA's "Radical Ecologies" exhibition, and his *Re-Wired/ReMixed* performance, for 6 hours every day for 5 days, he could only see with the eyes of someone on London, could only hear with the ears of someone in NY, but anyone, anywhere could access his right arm and remotely actuate it. A performance where the body was in three places at once. Two virtually in London and New York and one physically in Perth. A sharing of visual and acoustical sense with remote agents. Commissioned for the 2020 Adelaide Biennial of Australian Art at the Art Gallery of South Australia, *Reclining StickMan* is a 9m long, 4m high robot that is algorithmically actuated and can be remotely controlled with online interactivity. *Anthropomorphic Machine* is an 8m high, 7m in diameter interactive installation. Depending on the proximity, position and whether the person is static or moving, the system decides how it responds – with undulating, swaying, breathing or glitchy motion. A collaboration with LLDS, it was commissioned for the *Swarm* exhibition at the Science Gallery, Melbourne. Collaborating with KMD Lab, Keio University, Tokyo he performed *Sculpting Sound* at Cricoteka, Krakow.

He has had Visiting Artist and Visiting Researcher positions at Carnegie Mellon University, Pittsburgh; Nottingham Trent University, Nottingham; Brunel University, London; Ohio State University, Columbus; University of Michigan, Michigan; Curtin University, Perth; Keio University, Tokyo and the Academy of Fine Arts, Krakow. He has lectured at the Bartlett School of Architecture and the Architecture Association (AA) in London as well as given lectures in other major universities and art schools in Europe, Asia, the USA and Australia. And also given keynotes at major forums and conferences.

In 1996 he was made an Honorary Professor of Art and Robotics, Carnegie Mellon University and in 2002 was awarded an Honorary Doctor of Laws by Monash University. In 2010 he was awarded the *Ars Electronica Golden Nica Hybrid Arts Prize*. In 2015 he received the Australia Council's *Emerging and Experimental Arts Award*. In 2016 he was

awarded an Honorary Doctorate from the Ionian University, Corfu. In 2023 he was awarded an Honorary Doctorate from the Academy of Fine Arts, Krakow. His artwork is represented by Scott Livesey Galleries, Melbourne.

**GEORGE TSEKOURAS** has been serving the Department of Cultural Technology and Communication since 2002. His research interests focus on artificial intelligence, cultural informatics, and expert systems. He has authored more than 100 papers in scientific journals and conferences on the above topics and has participated in many scientific programs.

**DIONYSIOS ZAMPLARAS** is a VR creator and researcher whose practice unfolds between art, science, and immersive technology. Based in Paris and Athens, he explores how digital systems can expand our sensory and emotional relationship with the world, questioning the boundaries between the virtual and the real. His installations and research projects investigate the role of interfaces as spaces of encounter—where data, bodies, and environments interact and affect one another.

Originally trained in photography, multimedia, and digital interactive art, Dionysios holds a PhD from Paris 8 University. He has been a member of the INREV research group (Image Numérique et Réalité Virtuelle) since 2014 and an associate researcher at the Spatial Media group of EnsadLab (PSL University) since 2015. His teaching activity extends from digital creative practices at Sorbonne University (Paris I) to immersive experience design at ENSAD, PSL, and ENSTA Paris (Paris-Saclay).

His current postdoctoral research bridges artistic and scientific inquiry through the development of *Dr Cloud*, an immersive system that enables researchers to visualize and explore complex medical datasets through multimodal interaction. At the same time, projects such as *SolastalgiaXR*—a mixed-reality installation created with *Collectif Continuum*—transform human and environmental testimonies into living, responsive spaces of memory and care.

Through his work, he seeks to design hybrid environments by combining sensor-based interactivity, XR technologies, and spatial storytelling to create affective and reflective experiences. His projects have been showcased internationally, including at Laval Virtual's Art&VR Gallery, Athens Digital Arts Festival, IMZ Berlin, Patchlab Festival (Krakow), and Onassis Stegi (Athens).

**PARASKEVI-CHRYSOVALANTOU ZANGOIANNI** is a public-sector educator and PhD candidate at the Department of Cultural Technology and Communication, University of the Aegean. She teaches French language and Information and Communication Technologies (ICT) in public education and is involved in adult education. She holds a degree in Cultural Technology and Communication from the University of the Aegean and a degree in French Language and Literature from the Aristotle University of Thessaloniki. She has pursued postgraduate studies in Comparative Literature at Université Paris 12 – Val de Marne and holds a postgraduate specialization in Teaching Languages and Cultures from the Hellenic Open University.

Her professional trajectory has developed across different positions within the educational field, combining teaching, school administration, and academic engagement. Her doctoral research focuses on digital wellbeing and the responsible development of educational software, with particular attention to emerging technologies in educational

contexts. Drawing on philosophical approaches to technology and education, she is particularly interested in relational and posthumanist perspectives. Her research interests include artificial intelligence in education, educational applications of immersive technologies, and representations of technology in literature and cinema as they relate to educational imaginaries and practice.

