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POSTHUMANIST DESIGN AND FEMINIST DISCOURSE

Selma Kozak[i]
Asst. Prof. Dr.,
Kütahya Dumlupınar University,
Faculty of Fine Arts,
Department of Visual Communication Design,
orcid.org/0000-0003-0469-5922

Abstract:
One of the most defining paradigms of the twenty-first century, posthumanism exhibits an interdisciplinary structure, fostering a broad intellectual sphere of interaction. This process has supported the development of posthumanist design discourse. As a result of this interaction, design practices have transformed, becoming part of an era in which the human subject's position is once again called into question, and production processes have become increasingly hybridized. Through its radical critiques of traditionally accepted norms concerning gender and the body, feminist discourse and feminist design practices constitute fundamental components shaping the character of posthumanist design. Posthumanist design is grounded in the dynamic interactions between humans, computers, artificial intelligence, biotechnology, nature, and other entities, embracing flexible and hybrid production processes. This study examines the evolution of the posthumanist paradigm and posthumanist design within a chronological framework, elucidates the conceptual dimensions that influence posthumanist design, and concretizes these ideas through avant-garde examples. The selected iconic examples are analyzed within the context of feminist discourse and design, using a descriptive approach within the broader framework of qualitative research to explore elements such as human-machine collaboration, technological and design interventions in bodily metamorphosis, and transformations of identity. Additionally, this study presents a comprehensive mapping of the components of posthumanist design.

Keywords: posthumanist design, feminist discourse, feminist design, Ihab Hassan, graphic design

1. Introduction

"Liberation is a childbirth, and a painful one."
Paulo Freire, 2022: 67

[i] Correspondence: email selma.kozak@dpu.edu.tr

Posthumanism is one of the most significant paradigms of the twenty-first century. It possesses an interdisciplinary structure both in theory and in artistic/design practice, as it integrates fields such as science, art, technology, cinema, design, and ecology. Posthumanist thought, which has led to substantial transformations in our creative strategies and modes of production, reveals its impact across a wide range of domains, from literature to cinema, from painting, sculpture, architecture, and graphic design to bio-art.

Literature and cinema have enriched the ethical, aesthetic, and ontological dimensions of the posthumanist discourse. Works such as Karel Čapek's classic R.U.R. (Rossum's Universal Robots) (1921); William Gibson's cult science fiction novel Neuromancer (1984); Philip K. Dick's Do Androids Dream of Electric Sheep? (1968); Richard K. Morgan's Altered Carbon (2002); Margaret Atwood's Oryx and Crake (2003); and David Cronenberg's film Crimes of the Future (2022) stand as strong references embodying posthumanist aesthetics and design understanding.

Since humanism, anthropocentric (human-centered) thought has given way to post-anthropocentric principles. These discussions have found resonance on theoretical, practical, and cultural grounds, leading to the emergence of a posthumanist culture. Indeed, "*posthumanist culture is the matrix of contemporary performance*" (Hassan, 1977: 831). The rapid spread of personal computers in the 1980s initiated a transitional period, setting the stage for further developments in posthumanist thought. Following this, posthumanism evolved from a 'purely digital' condition in the 1990s to a 'cybernetic' atmosphere in the 2000s, and since the mid-2000s, it has heralded a conceptual transformation.

In his article titled "Can Thought Go on Without a Body?" (1987), Jean-François Lyotard initiates a speculative discussion on whether thought can exist without a body within the context of human ontology and the philosophy of technology. "*In this way, he opened the way for thinking about the posthuman or the transhuman in a way that shifts the focus from software (attitudes, opinions, ideologies) to hardware (organism, machine, their combinations, cosmic processes, and events)*" (Groys, 2017: 22). Lyotard argues that technology was not invented by humans; rather, humans themselves are shaped by technology (Lyotard, 1988-89: 77). In this context, "*according to Lyotard, the real problem is the creation of new hardware that can replace the human body - so that human software, i.e., thought, can be rewritten for this new media support structure"* (as cited in Groys, 2017: 22).

Many branches of feminist culture have long embraced the pleasures derived from interactions between humans and other living beings. In this context, feminist struggle, queer theory, activism, feminist art, and design practices have intersected with posthumanism, becoming decisive factors in the development of this paradigm. This intersection challenges the anthropocentric perception of the body, placing the body and its accepted normative forms at the center of debates in the postmodern era. As a result of these discussions, post-body explorations, new design approaches, and various rhetorical forms have emerged.

From a historical perspective, avant-garde movements, especially Futurism, considered the body not merely as an anatomical matter but as an extension of speed, dynamism, and the mechanizing modern world, initiating a radical transformation. This process manifested itself in plastic arts, graphic design, typography, and architecture. Futurism, intent on altering our perception and mindset, proposed an ontology that deconstructs the body and, beyond that, envisions the human intertwined with technology. In this regard, "*the artistic practices and*

discourses of the classical avant-garde were in a certain way prefigurations of the conditions under which our own second, self-produced, artificial bodies exist in the contemporary media world. The elements of these bodies - artworks, books, films, photos - circulate globally in a dispersed form" (Groys, 2017: 23).

2. Methodology

This study is structured within the framework of qualitative research methods, aiming to understand the theoretical intersections and relational context between posthumanist design and feminism. The data obtained in the study, including case studies and visual materials, were systematically evaluated using the descriptive method and content analysis techniques. Posthumanism and the development of the posthumanist paradigm were examined within a theoretical framework with attention to historical chronology, while *Feminism, Postcolonialism*, and *Cybernetics* were explored as subtopics. Due to their interdisciplinary and broad nature, these topics entail certain methodological limitations. Feminism was primarily approached from the perspective of feminist art and design; postcolonialism was analyzed within the framework of postcolonial feminist theory; and cybernetics was evaluated within its historical and theoretical context.

A similar methodological approach has been adopted under the section on posthumanist design types; the examples presented under each subsection have been evaluated as case studies, predominantly selected from the field of graphic design and from designers. In these examples, works in which the body is metamorphosed in various ways and identity structures are explored have been analyzed in detail using the ekphrasis method. The categories of posthumanist design have been shaped in accordance with the symbiotic connection between design practice and posthumanism and feminism, taking into account the stages in the developmental process of posthumanism.

Through all these evaluations, the aim of this article is to shed light on the developmental process of posthumanist design practice; to elucidate its intersection with feminist theory and practices; to categorize and map the types of design; and, in this context, to analyze the principles of posthumanist design and establish a systematic framework.

2.1 The Development of the Posthumanist Paradigm

At the end of the twentieth century and the beginning of the twenty-first, anthropocentrism emerged as a significant topic of debate. Posthumanism, by critiquing anthropocentric thought and questioning the notion that humans occupy a central position in nature, the universe, art, philosophy, and even social life, has tended to reposition humans as intertwined beings living alongside all other living organisms, machines, technology, and ecosystems. Considered a relatively recent approach, the posthumanist paradigm integrates technological and ecological dynamics within the components of cyberculture, critiques of humanism, the deconstruction of the human body, as well as feminist theory and artistic debates within this context.

The concept of posthumanism first appears in Ihab Hassan's 1977 text. Renowned for his sophisticated analyses of literary criticism and postmodernism, and regarded as one of the leading thinkers of postmodernism, Ihab Hassan (1925–2015) comprehensively examined the theoretical transition between Modernism and Postmodernism, analyzing the formal and

philosophical transformations of contemporary culture. Hassan's work laid the intellectual groundwork for discussions on posthumanism and posthumanist culture, opening up the posthuman condition to both critical and creative examination. In his article titled ""Prometheus as Performer: Toward a Posthumanist Culture" (1977), Hassan argued that the human form undergoes transformation. According to Hassan (1977: 843);

We need first to understand that the human form - including human desire and all its external representations - may be changing radically, and thus must be re-visioned. We need to understand that five hundred years of humanism may be coming to an end, as humanism transforms itself into something that we must helplessly call posthumanism.

Ihab Hassan's text emphasizes the necessity of moving beyond anthropocentric thought to consider humans within a broader context that includes technology, biology, nature, and the environment.

There is nothing supernatural in the process leading us to a posthumanist culture. That process depends mainly on the growing intrusion of the human mind into nature and history, on the dematerialization of life and the conceptualization of existence. In that sense, we need not wait for the end of History, as Hegel thought, to witness the synthesis of the Concrete and the Universal, Slave and Master, Individual and State. Each of us, by virtue of Dream, Hope, and Language, provides some awkward version of the Concrete Universal. (Hassan, 1977: 835).

Hassan, particularly focusing on a new cultural paradigm that transcends human biological and technological limits, approaches posthumanism as a form of transformation or change. "*For what is the human animal, as Monod himself says, but the most distinctive organism on earth, and at the same time the most self-transcendent - I mean the most capable of abstracting itself through language, and rising equivocally through layers of consciousness?"* (Hassan, 1977: 835).

"*Alexandre Kojève, describes history as moved by the heroes that were pushed to self-sacrifice in the name of mankind*" (as cited in Groys, 2017: 11). According to Hassan, the self-sacrificing protagonist is Prometheus. Prometheus is a Titan and the God of Fire. He stole fire from the gods and gifted it to humanity and civilization, defying Zeus.

Prometheus, who dared to steal fire from the gods, was condemned to an eternal punishment; his liver was torn apart daily by an eagle. Mythologically, Prometheus gifted humanity not only fire but also art, science, knowledge, technology, imagination, and the human striving for self-transcendence, representing development and progress. In this context, Prometheus is not merely a mythological hero but also a metaphor for infinite renewal, the enlightenment ideal, free thought, and a mental journey extending beyond humanity.

In posthumanist thought, the Promethean act signifies humanity's transcendence of its own limits and its transformation on biological, cognitive, and technological levels. This act symbolizes the human endeavor to determine one's own fate and self-realization, the desire for knowledge, the aspiration to transform through technology, and, most importantly, the challenge to authority. Therefore, Ihab Hassan's approach is highly significant, as Prometheus is regarded as an early metaphor of posthumanism. According to Hassan (1977: 835): "*with regard to posthumanism itself, the most relevant aspect of the Promethean dialectic concerns Imagination and Science, Myth and Technology, Language and Number, Earth and Sky, two realms tending to one*."

In posthumanist debates, the human body and its ideal proportions emerge as a fundamental area of inquiry. The normative forms attributed to the body are ideals shaped

through historical and cultural processes, tracing their origins back to Renaissance humanism. The most famous example of this is Leonardo da Vinci's (1452–1519) Vitruvian Man (1492). This work, representing male-centered and humanist norms, was created to define the ideal proportions of the "*ideal human*" body, presenting a rational, measurable, and universal model of humanity.

The more modern reinterpretation of the Vitruvian Man is Le Corbusier's (1887–1965) Modulor Man (1942–1948). Nearly five centuries after Da Vinci, Le Corbusier similarly designed a "*normative*" structure as a universal calibration standard. This distinctive human (male) silhouette, which recurs throughout Corbusier's architectural and artistic works, stands out with its proudly upright posture, square shoulders, and sometimes its characteristic stance with one arm raised. Thus, as a strict modernist, Corbusier places the human form once again at the center of design (Braidotti, 2021; Arellano, 2018; Icon, 2009). Both works are eulogies to the human body and its ontology.

Posthumanist feminists, in particular, argue that da Vinci's Vitruvian model does not represent a universal human body but rather a bodily conception shaped by a specific historical, social, ethnic, and gendered ideology. According to feminist thinkers, there is no such thing as an ideal human measure represented by male-centered and humanist parameters. They emphasize that the body cannot be reduced to a fixed, ideal male form and focus on the possibilities and potentials of it being reshaped through technological advancements (Hassan, 1977; Haraway, 2006; Braidotti, 2021). Because "*The Vitruvian Man has broken through its enclosing circle and square, and spread across the cosmos*" (Hassan, 1977: 843).

Theoretically, the theses of thinkers such as Katherine Hayles, Donna Haraway, and Rosi Braidotti - despite their differing approaches - have converged around the concept of posthumanism, bringing together human and nonhuman entities (animals, plants, ecosystems, artificial intelligence, objects, etc.), organic and inorganic life forms, biotechnology, cyberculture, cyborg bodies, feminism, and environmental studies. Moreover, the authors' ideas have directed individuals towards "*postanthropocentric political and aesthetic practices, in which humans and nonhumans co-exist, co-experience and co-produce in distributed cognitive environments, assemblages and networks of humans, animals, machines, software, or environments*" (Herbrechter, 2023: 4).

In light of all these historical, cultural developments and theoretical perspectives, the remainder of this chapter will evaluate the development of the posthumanist paradigm around three core components: *Feminism*, *Postcolonialism*, and *Cybernetics.*

2.1.1 Feminism

Saying that posthumanism is inherently feminist is not a radical idea—although it may not apply to every posthumanist perspective. By the mid-twentieth century, feminist thought had begun engaging with posthumanist theories that question the biological and social boundaries of the human. "*Throughout the 1960s and 1970s an activist brand of anti-Humanism was developed by the new social movements and the youth cultures of the day: feminism, de-colonization and anti-racism, anti-nuclear and pacifist movements*" (Braidotti, 2013:16). Particularly in the 1970s, feminist thought gained momentum as a movement questioning women's gender roles, patriarchal structures, and the social construction of the female body. Feminist thinkers laid the groundwork for posthumanist themes by arguing that the body, identity, and gender can be constructed beyond

mere biological traits. When examining the art and design practices of the 1970s, it becomes evident that the feminist art movement was on the rise. Notably, Los Angeles emerged as a key hub, hosting both experimental and politically charged feminist art practices. This environment fostered significant feminist voices in art and design and paved the way for diverse practices and aesthetic understandings to flourish. During this period, "*From Simone de Beauvoir to Germanie Greer, Luce Irigaray to Julia Kristeva, Audre Lorde to Judith Butler, feminist theorists have variously influenced, inspired and infuriated women artists*" (Reckitt, 2012:13).

In this respect, Simone de Beauvoir's famous and groundbreaking assertion, "*One is not born, but rather becomes, a woman*," marks a significant starting point. De Beauvoir, by revealing gender as a category constructed independently from biological determinism, initiated a profound intellectual transformation concerning the malleability of human identity and embodied existence. Her thought represents a critical threshold not only in feminist awakening but also for feminist posthumanism. The idea that elements such as technology, biotechnology, and artificial intelligence discussed today can redefine the human body and identity intersects with de Beauvoir's emphasis on the constructed nature of gender.

In feminist posthumanist theory, there is another prominent disruptive voice alongside de Beauvoir: Donna Haraway. Haraway's Cyborg Manifesto (1985) stands out as "*the first feminist postanthropocentric social theory text of the twentieth century*" (Braidotti, 2015: 680). By bringing feminist theory and posthumanism together, the text triggers a paradigm shift at the intellectual level. Using the concept of the cyborg (a cybernetic organism blending human and machine), Haraway explores the fusion of humans with technological entities and examines how this fusion relates to factors such as gender, race, and class, envisioning a utopia of a world without fixed gender or origins and endings. In her manifesto, the author emphasizes the ontological nature of the cyborg, stating that "*we are all chimeras, theorized and fabricated hybrids of machine and organism - in short, cyborgs. The cyborg is our ontology; it gives us our politics*" (Haraway, 2006: 4).

Haraway's proposed conceptual framework and the cyborg phenomenon refer to a world shaped by information and high technology, non-anthropocentric beings, and the connections this technology establishes with nonhuman agents. This situation reinforces post-anthropocentric debates within the axes of feminism and posthumanism. Haraway's claim is that the boundaries between human, machine, nature, technology, culture, gender, and politics are dissolving - or if a new framework is to be drawn, it must be more inclusive, envisioning a world without gender in a feminist culture and postmodern era. And in this world, "*Haraway would rather be a cyborg than a goddess*" (2006:74).

2.1.2 Postcolonialism

The intellectual framework that emerged following the collapse of Eurocentric colonial systems, especially after the 1970s, marks a period in which concepts such as human, race, ethnicity, and racism were redefined globally, and colonial epistemology began to intersect with posthumanist thought. Historically, issues such as the processes of knowledge production and meaning-making by dominant powers, the hierarchical structures created by colonialism, and white-centric perspectives were central to postcolonial thought—topics that later came to include themes such as posthumanism and the post-human. Posthumanism began to question the ethnic

classifications and distinctions produced by colonial epistemology, offering a new framework that emphasizes the entanglement of race and gender.

Bell Hooks, a prominent figure in postcolonial feminist critique and pedagogical approaches, particularly criticized the social structures shaped by Western and patriarchal norms in the production of knowledge. She argued that the experiences of Black women were, at best, ignored and, more often, erased. Hooks' ideas have established a significant theoretical bridge between feminism and postcolonialism. In connection with postcolonial theory, she emphasized the necessity of developing new pedagogical and artistic methods to amplify the voices of marginalized individuals through an intersectional analysis of race, class, and gender in the construction of postcolonial identities. In parallel with posthumanist thought, she underscores that the human body is not a fixed subject within biopolitical power relations, but rather a constantly transforming being (Hooks, 2021). In this way, postcolonial and posthumanist thought intersect in their shared pursuit of bodily and identity liberation.

Postcolonial feminist theory argues that the Western concept of the human has been constructed within a specific framework of race, culture, gender, and civilization. In critique of this, "*In the 1990s, a new 'postfeminist' phase emerged. Some feminist theorists and artists have begun to re-examine the work of 1970s feminists while others have joined feminism with other projects, most notably those inspired by post-colonial theory and trauma studies*." (Reckitt, 2012: 20). Today, postcolonial feminist thought approaches the impact of globalization and technological developments on identity within a broader framework, relating it to dynamics such as ethnicity, global capitalism, migration, and ecofeminism. This, in turn, strengthens its ties with posthumanism.

Currently, hybridity - whether cultural or technological - has become a new mode of existence. In the postmodern world, cyborgs, queers, migrants, refugees, workers, intersex individuals, artificial intelligence, digital subjects, climate migrants, marginalized groups, animals, and all biological beings coexist. Consequently, this hybridity renders subjectivities fluid while simultaneously permeabilizing boundaries. The artistic and conceptual resources that enable this permeability are themselves in a constant process of redefinition.

2.1.3 Cybernetics

American mathematician and philosopher Norbert Wiener (1894–1964) established the science of "Cybernetics" in 1948, fundamentally transforming communication practices between living beings and machines. Cybernetics theory is primarily based on the concepts of 'Control and Communication.' In his book Cybernetics: Or Control and Communication in the Animal and the Machine (1948), Wiener emphasizes that feedback mechanisms play a decisive role in the functioning of biological, mechanical, and social systems. Whether in organic systems like the human body or in machines, information flow and control processes are critical for the sustainability of systems (Weiner, 1982: 95-97). It is known that Wiener's theories were later utilized in the development of artificial intelligence.

Katherine Hayles, in her work, extensively discusses the intersection of posthumanism and cybernetics. She argues that the posthumanist perspective offers an ontological framework that facilitates the transition between the physical nature of the human body and more abstract, digital entities. The human is not merely a biological being but an information-processing,

information-based entity deeply intertwined with technology. According to Hayles, cybernetic thinking redefines the human mind and body through a digital network and information flow, thereby reinforcing the notion of the 'post-body.' The concept of the virtual body, which she discusses within cybernetics, aims, according to Hayles (1999: 20), "*to allude to the historical separation between information and materiality and also to recall the embodied processes that resist this division*." In this context, the virtual body reveals the dynamic nature of the relationship between information and matter, while also encompassing the resistance of embodiment against this division. Hayles (1999:2-3) answers the question "*What is the posthuman?*" as follows:

- First: the posthuman perspective prioritizes informational patterns over material instantiation; embodiment is seen as a historical contingency.
- Second: consciousness is not the center of human identity, but a secondary phenomenon mistakenly believed to be self-defining.
- Third: the body is the original prosthesis; extending or modifying it is part of a process that began before birth.
- Fourth and most importantly: the posthuman conception configures the human to be integrated with intelligent machines; there are no absolute boundaries between body and simulation, biology and cybernetics.

2.2 Types of Posthumanist Design

Types of posthumanist design are categorized under four subheadings, each supported by historical and contemporary case studies: *Post-Digital Graphic Design*, *Generative Design*, *Bio-Design*, and *Artificial Intelligence and the Design Environment*. On the other hand, the initial principles of posthumanist design from a historical perspective can be traced back to the Futurism movement (1909–1933). Although the primary aim of the Futurists was not explicitly to develop a posthumanist approach, it is believed that their avant-garde works may have served as a reference for posthumanist design. Therefore, beginning the discussion of posthumanist design types with Futurism is meaningful in terms of historical context.

2.2.1 Futurist Beginnings

The concept of futuristic can bring to mind many new contexts and meanings. "*For example, when we describe something as 'futuristic,' we intend to signify a scientific-technological advancement that goes beyond what currently exists. This concept of 'futuristic' encompasses not only extraordinary technological developments but also a holistic perspective on the transformation of mind and body that grants humans new mental and physical powers. Therefore, 'futuristic' tends to imply endless possibilities for progress, with clues always rooted in the present moment*" (Humphreys, 2024: 7-9).

Filippo Tommaso Marinetti's (1876–1944) revolutionary and provocative text, the Futurist Manifesto (1909), explicitly expresses these new contexts. In the futuristic attitude, which emphasizes values such as speed, violence, modern technology, innovation, and aesthetics, the works of artists like Umberto Boccioni (1882–1916), Giacomo Balla (1871–1958), and Carlo Carrà (1881–1966) reveal the fragmentation and dynamization of the human figure, which is sometimes integrated with mechanical elements in their designs, paintings, and sculptures. In Futurist works, the human body is not depicted as a static, holistic, or essentialist entity; rather, it is expressed as an extension of speed, energy, and technological progress.

Umberto Boccioni's sculpture Unique Forms of Continuity in Space (1913) serves as a prime example. The artist transforms the human body into an aerodynamic and fluid form, demonstrating how the body evolves into a vector of speed and movement. In this context, the Futurists' depiction of the human body in distorted or fragmented forms can be regarded as an avant-garde representation of posthumanist design (Marinetti, 1909; Humphreys, 2024: 28).

On the other hand, it is a well-known fact that the Futurists were openly opposed to women and feminism (see Articles 9 and 10 of the Futurist Manifesto), and for this reason, they have been criticized by feminists. At this point, their inclusion in a text about feminism may seem controversial. However, there are various perspectives suggesting that this opposition is not simply misogyny but rather a paradox related to the creation of "*another kind*" of being. Richard Humphreys (2024: 24-26) explains this as follows:

For Marinetti and many Futurists, 'Woman' represents opposition to modernity and resists change. However, this seemingly misogynistic tendency should be understood within the broader Futurist enthusiasm for creating a 'non-human type.' As literary critic Peter Nicholls also points out, although Marinetti's new heroic existence fantasy can be seen as a super-male dream, it develops around the 'paradox' that the deficiency and inadequacy he aims to eliminate is not only a feature of traditional femininity but also an inherent aspect of sexual difference.

2.2.2 Post-Digital Graphic Design

"*Along with the arrival of mass media throughout the twentieth century, and the proliferation of new art forms beginning in the 1960s, another development that threatened the traditional idea of a medium was digital revolution of the 1980s-1990s*" (Manovich, 2001: 3). By the late 1990s, digitalization was no longer discussed merely as a process but began to be examined through its cultural, social, and economic impacts, as well as its aesthetic dimensions. One of the pioneers of these debates, Nicholas Negroponte (1943), explicitly declared this shift in his article titled Beyond Digital (1998: 5), stating that "*the digital revolution is over*." In this process, he argued that digitalization had become an inseparable part of everyday life, that the term 'digital' no longer carried a distinct meaning, and that digitalization had evolved into a completed phase.

Inspired by Negroponte, Kim Cascone later coined and conceptualized the term. Cascone (2000: 12) explained this by stating, "*The Negroponte idea inspired me to refer to this emergent genre*" as "*post-digital" because the revolutionary period of the digital information age has surely passed. The tendrils of digital technology have in some way touched everyone*." In this context, as Cascone also points out, post-digital effects have drawn all individuals and disciplines into a comprehensive process of transformation. This process has manifested itself across a broad spectrum - from production and consumption practices to artistic and design-based creation, from the reshaping of aesthetic models to the transformation of social dynamics. At the same time, it necessitates the reconsideration of concepts such as culture, aesthetics, gender, the body, and identity within a post-digital framework. Graphic design emerges as one of the most prominent and active fields within this transformation.

In the 1980s, the widespread adoption of personal computers triggered a fundamental paradigm shift in design practices. A transition from analogue to digital processes began, prompting designers to explore the role of computers in design practice and their interaction with human consciousness. One of the pioneering women who embraced digital innovation,

graphic designer April Greiman, created one of the earliest works designed by exploring the potential of digital environments: her poster DOES IT MAKE SENSE? (Design Quarterly, 1986). Using MacPaint software, Greiman deconstructed a thirty-two-page issue of Design Quarterly and transformed it into a horizontally oriented poster measuring approximately 60 by 180 centimeters. "*Like many artists in the 1980s, Greiman saw the computer in a utopian light, believing that it would lead to an age of expanded creativity that would permeate human consciousness. Along these lines, she did not view the computer as simply a functional tool with which to execute a preconceived idea, but as something that had led her experiment in a way that opened up new avenues of serendipitous design*" (Eskilson, 2007: 356).

At that time, the designer, "*began to experiment with "hybrid imagery" a term referring to the synthesis of digital technology with traditional hand-drawn practices*" (Eskilson, 2007: 355). These hybrid images culminated in Greiman's poster, where she digitally scanned her own body and self-portrait, transforming them into a pixelated form. This avant-garde approach also served as evidence that the human body was no longer a fixed, holistic entity but had become a design object capable of being converted into digital data. The poster features texts, images, typography, and a timeline of technological history, all arranged in various sizes, orientations, and layers alongside the scanned image of the female body. "*However, the dense collage of photography and drawings that overlays the self-portrait, the visible pixels, reverse printing, as well as the subtle dislocations that occur - with part of the center of her body detached from the surrounding form, for example - all combine to create a self- consciously chaotic impact*" (Eskilson, 2007: 356).

In this example, Greiman transforms her own body into a data form. Therefore, the work reflects both the representation of the human body in a digital environment and the transition of design between analogue and digital processes. It demonstrates that both human identity and design can evolve from fixed forms into fluid and transformable structures. In this context, as Haraway also argues, the distinction between human and machine has long been blurred by such digitization processes. The designer's reproduction of her own body in digital form constitutes a virtual body representation produced through data within the framework of posthumanism. By transcending the binary between analogue and digital, and adopting a postdualistic approach, this work is one of the references that depict how design, as well as the human body and mind, can no longer be produced in fixed formats, and how technological environments transform the design process.

Greiman's approach to the body indicates that technological environments alter the designer's perception of body and identity; her body can be regarded both as subject and object, and these categories are not fixed. At this point, Greiman's poster simultaneously offers historical clues to the visual and conceptual foundations of posthumanist design and represents a transitional moment standing at the threshold of post-digital graphic design.

In contemporary times, post-digital graphic design is used "*to refer to creative practices based upon the growing utilization of programming, software and ad hoc algorithms*" (Conrad, 2021: 11).

An example of this is Responsive Typography, a visual identity and typographic installation designed by Demian Conrad in 2017 for the Artists & Robots exhibition, held as part of Expo 2017 in Astana. The project emerged as an extension of the "Post-Digital Graphic Design Research" (2019-2021) conducted at the Geneva University of Art and Design (HEAD-Genève).

In this work, Conrad and his team focused on topics such as creative coding, parametric design, AI-assisted typography, and algorithmic aesthetics. The installation, which incorporates a special typeface referred to as a parametric font, consists of an LED panel displaying the words Artists & Robots, connected to a PC and an Xbox Kinect 360 device. The typeface displayed on the screen responds to the viewer's physical position, dynamically transforming in accordance with their spatial orientation (Conrad, 2021; Boddington, 2017; HEAD, 2021).

For example, the closer a viewer gets to the screen, the bolder the type becomes and the further away they are, the thinner; if you are stood in the centre and bend to the left, the font italicises; walk to the left and the type implodes or walk to the right and it explodes. This addition to the exhibition attempts to physically connect the typography to a human body creating an augmented, responsive typeface that allows viewers to "*feel the weight and boldness of the giant type"* (Boddington, 2017: 5-6).

In this context, the installation redefines the interaction between human and machine. The human body is associated with technological devices, artificial intelligence, and typography, with typography taking on a structure that senses the movements of the viewer. Consequently, a reciprocal interaction/communication emerges. Human movements and letters synchronize, transcending the body. This interaction supports a posthumanist design vision in which the body and machine operate together and the boundaries between the biological and digital are redefined. As a result, the typographic structure within the installation exemplifies a 'post-body typography' through its human-machine hybrid interaction.

2.2.3 Generative Design

In the 1960s, the pioneers known collectively as the "3N" — Georg Nees (1926–2016), Frieder Nake (b. 1938), and A. Michael Noll (b. 1939) — conducted experimental works that sought to bridge algorithmic processes with artistic production and computational aesthetic design. Their groundbreaking practices culminated in the emergence of generative design as a distinct genre. These three avant-garde figures not only revolutionized artistic methodologies but also established foundational principles for the field, paving the way for the creative utilization of computers within the artistic process (Medium, 2022a; Medium, 2022b).

Like April Greiman, Vera Molnár is among the first female figures to move away from anthropocentric design approaches and embrace the concept of production in collaboration with computers. "*The Hungarian-born artist, often hailed as the "grande dame" of generative art, began employing simple algorithms in 1959, which she described as the "machine imaginaire" (machine imaginary)*" (Martin 2023). Molnár's designs predominantly consisted of grid lines and color combinations created mostly through plotter drawings. Of course, "*this was an essential precursor to what would come next*" (Martin, 2023).

In Molnár's approach, human creativity and machine automation are synthesized. According to Molnár, this represents the transformation of the artistic creation process into a reciprocal dialogue with the machine (Obrist, 2019: 78). From the beginning of her career, Molnár has investigated the collaboration between humans and machines and their aesthetic possibilities. Through her algorithmic and system-based art, she challenges the dichotomy between the subjective and emotional approach, often prevalent in traditional art discourse, and a rational, systematic perspective. Her method simultaneously critiques gender codes in artistic

production from a feminist standpoint and demonstrates that posthuman creativity cannot be reduced solely to the myth of masculine genius. In this regard, she has become one of the canonical artists who, by removing artistic practice from the monopoly of the biological human subject, develops a symbiotic model of production with machines.

On the other hand, during a period already predicated on the assumption that computer-based work was inherently masculine or attributed exclusively to men, Molnár, as a woman, merged creativity with computing and, as a perhaps unsurprising consequence, was marginalized and even vilified by art circles. The artist expresses this situation as follows: "*When the computer arrived, it put me completely on the fringe of the whole society. Everyone was scandalized, basically, no one looked at what I was doing; it seemed so terrible. Other artists, she recalls, accused her of "dehumanizing" art*" (as cited in Martin, 2023: 6).

The deepening dialogue between art and technology has also led to an expansion of the boundaries of generative design. Software developed by figures such as John Maeda, Casey Reas, and Ben Fry aims to transform coding based on algorithmic principles into an aesthetic practice within creative processes (Reas and Fry, 2007). In this context, the software Processing (2001), which has also been described as a "Modern Prometheus," is just one example of this transformative dialogue. It aims to enhance software literacy and to position artistic production as an integral part of knowledge generation and conceptual inquiry (Processing Foundation, 2018).

Today, generative design represents an approach that involves the automation of the design process through the use of computer technologies, algorithms, and parametric design (data-driven, variable-controlled design). The computer generates and develops possible design solutions based on parameters set by the designer. This process, increasingly autonomous in nature, now draws upon advanced technologies such as artificial intelligence, machine learning, modeling, and genetic algorithms. In this context, production departs from the traditional notion of design grounded solely in human creativity and instead builds upon a model of human–machine collaboration.

2.2.4 Bio-Design

"*The human body is obsolete. Bodies are hacked, genes are mapped, prosthetics are attached and chimeras are engineered in labs. The trans-species, the trans-gendered and even the trans-human proliferate*" (Stelarc, 2013; V2_Lab, 2013). Stelarc's famous statement from the 1990s, in which he emphasized that the human body is now an obsolete concept, has gained renewed relevance over time, as experimental designs aiming to augment or transcend the body have increasingly proliferated.

As both a scientific and creative approach, bio-design interrogates the boundaries between nature, technology, biology, and posthuman entities. However, bio-design is not limited to the use of organic materials or mere inspiration from nature; rather, it entails a rethinking of the reciprocal relationship between nature, technology, and living organisms within the context of design practice. This discipline, which renders art and science mutually immanent, holds the potential to transform both the aesthetic and ontological dimensions of design - ranging from living sculptures to bioluminescent garments (Anquetil, 2024).

The works of Stelarc and Eduardo Kac, two pioneering figures in bio-design and bio-art, exemplify a posthumanist design practice that explores the fusion of the biological and the

technological body. Both artists reject the notion of the human body as merely a biological organism and instead seek to reconfigure it through technological, cybernetic, and biotechnological means. Stelarc, for instance, aims to extend the body's capabilities by incorporating various cybernetic devices, bionic prostheses, and robotic augmentations. According to him, "*the body is not particularly well designed. It has to take in gulps of air constantly to survive; if it loses 10 percent of its bodily fluid, it's dead; it is vulnerable to serious health problems and life-threatening risks, and it deteriorates over time. Its longevity is limited"* (Stelarc, 2014). Therefore, he seeks to modify the body, which he perceives as finite and limited.

In his works, Stelarc curates a machine choreography on the human body by integrating various mechanical components into his own flesh, staging immersive visual performances. For instance, in his renowned project Third Hand (1980), he attached an artificial bionic hand prosthesis to his own body, thereby endowing his hand with a new function that enhances its corporeal mobility. This robotic hand, designed in Yokohama, is "*a human-like mechanical hand attached in addition to his right arm. It was constructed to match the dimensions of his real right hand, using aluminum, stainless steel, acrylic, latex electronics, electrodes, cables, and a battery pack*" (Stelarc, 2024). Thus, Stelarc alters the physical structure of the body by designing a hybrid hand form. The organic and the mechanical merge, creating a cyborg.

In Stelarc's art, zombies, cyborgs, and chimeras (mythological creatures formed by the merging of different species or organs) coexist. However, the artist transcends the traditional notion of prosthetics. By integrating high-tech devices into the body, he liberates the body from its biologically finite design and reconfigures it as an entity existing between the digital and the virtual realms.

Eduardo Kac, on the other hand, integrates scientific fields such as biotechnology and genetic engineering into his artistic practice. His works question the aesthetic and philosophical significance of biological materials and living forms. In his renowned piece GFP Bunny (2000), the artist transforms a biological being—a rabbit—into something else. Using molecular biology, a green fluorescent protein (GFP) was inserted into Alba's (the rabbit's name) DNA, causing the rabbit to glow green at night. Hibrit varlık "*Alba marks the first new mammalian species created in art history, elevating Bio-Art to an international platform. GFP Bunny subsequently attracted scholarly attention from authors such as Margaret Atwood and Michael Crichton, becoming a global phenomenon*" (Kac, 2024). Despite its immense potential and broad scope of applications, bio-design also engenders a range of ethical debates.

2.2.5 Artificial Intelligence and the Design Environment

Artificial intelligence design constitutes a posthumanist paradigm. Beyond the biological and physiological unity of body and mind, AI emerges as a hybrid entity where software converges with biomechanical and neurotechnological integrations, becoming one of the defining paradigms of the twenty-first century. From the perspective of human ontology, it represents an existential phenomenon — a cognitive agent that simulates intellectual capacities yet lacks embodied existence. This phenomenon propels the discourse on selfhood and identity into new dimensions. Works produced through this disembodied simulation of the human brain have proliferated, fostering paradigmatic creative environments and transforming into experiential spaces where novel possibilities are actively explored.

Today, artificial intelligence-based machines are presenting paintings at Art Basel, writing the next Game of Thrones books, and curating exhibitions at Tate. Toronto-based startup Looka has created custom AI-generated logos for nearly 5.5 million customers. Those logos, based on the moodboards of users, are delivered in under 30 seconds for half the price of what a human designer might charge (Raina, 2019).

Similarly, one of the world's most prestigious auction houses, Christie's, is organizing the Augmented Intelligence (2025) auction, featuring works created through artificial intelligence. Beethoven's unfinished Tenth Symphony (1827) is completed by AI, and the possibilities offered by artificial intelligence are increasingly utilized in cinema as well.

As the examples demonstrate, the artificial intelligence design environment has become a space where the dialectical interaction between humans and AI intensifies. This interaction grants design practices a new status, enabling collaborative and sometimes autonomous production processes. Designs created through prompt commands provoke questions about the shifting identities and roles between the human designer and AI. Alongside the human designer, a "hybrid designer" - currently guided by prompts - seems to have emerged.

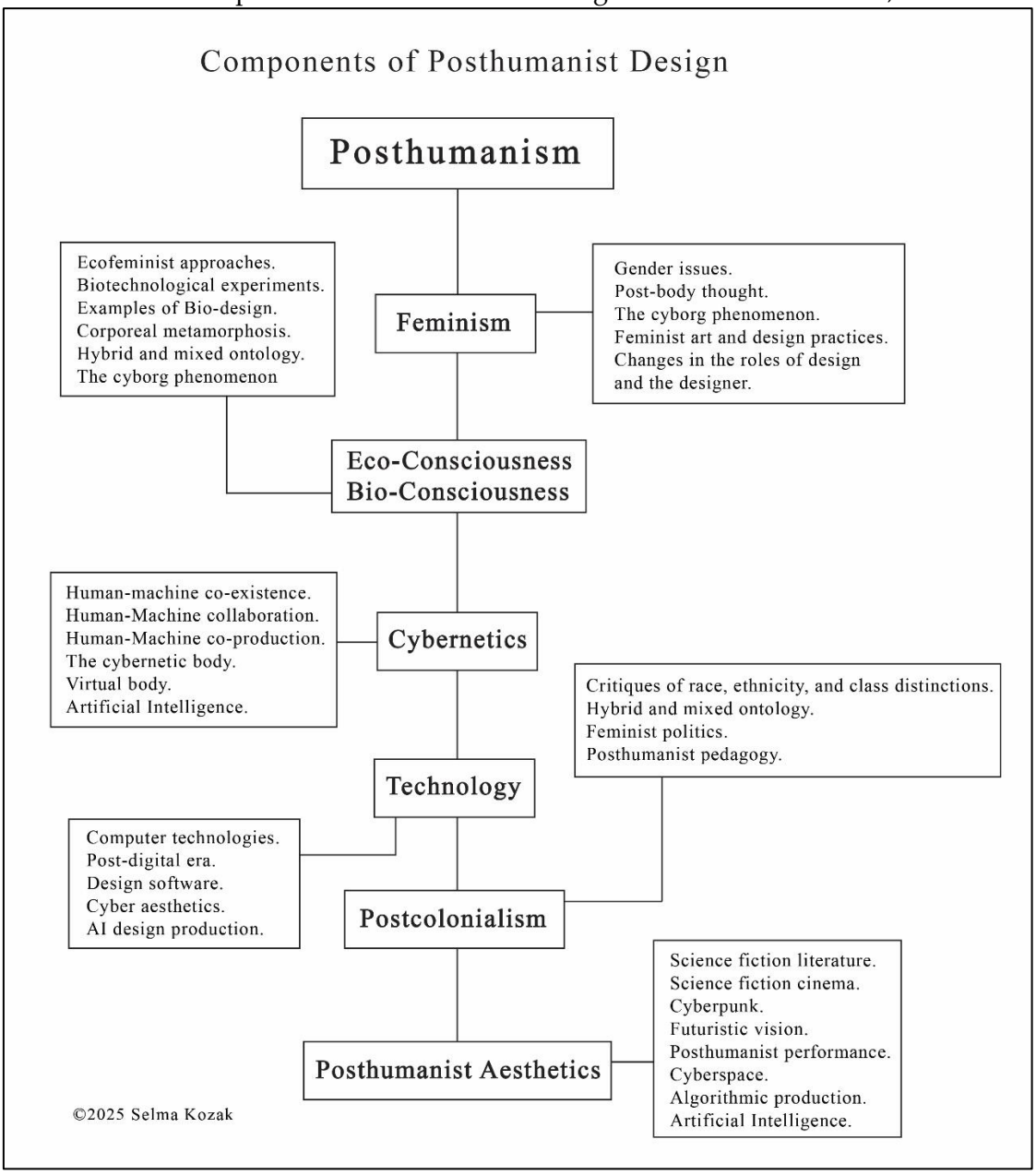
2.3 Characteristics of Posthumanist Design

Posthumanist design, which encompasses a realm not solely for and exclusive to humans, includes sustainable practices integrated with nature and ecosystems, artificial intelligence, the fictional universe of the metaverse, digital and bio-design, game design, virtual and augmented reality (VR/AR), and responsive designs. It is based on a perspective characterized by hybridity, frequently encountered, and grounded in a productive, connected, evolving, and dynamic vision. "*As a general rule, the more actions extracted from one place and added to another, the more fluid the boundaries become*" (Deleuze and Guattari 2023: 491) Accordingly, "*Faced with machines that outperform humans in a variety of tasks, we are forced to re-examine the roles and design methods for the Posthuman epoch and develop radically human creative approaches to pave the way for formal experimentation in the age of the algorithm. A key component of the Posthuman aesthetic is therefore an insertion of the human element of unpredictability and absurdity into technocratic cultural paradigms*" (Raina, 2019: 16).

Posthumanist design is a mode of expression that transcends fixed categories by dissolving dualistic and post-dualistic modes of existence - such as organic and inorganic, natural and artificial, machine and biology, body and beyond - into a fluid and pluralistic ontology. Its multifaceted character arises from interactions with diverse disciplines including technology, ecology, biology, feminism, and aesthetics. Notably, feminism and the subsequent emergence of post-body thought or the cyborg concept within posthumanist design practices demonstrate the transformation of body and identity. This is further followed by ecofeminist approaches, biotechnological experiments, and examples of bio-design. Design thus becomes a tool for transforming concepts such as body, identity, and gender.

In this context, the table below chronologically and systematically maps the fundamental and subcomponents that influence and contribute to the development of posthumanist design.

Table 1: Components of Posthumanist Design. Source: Selma Kozak, 2025.



Although the characteristics and principles of posthumanist design have not yet been fully defined, as can be seen from the case studies presented in this study, it is neither fixed nor static. On the contrary, it exhibits a dynamic structure that is open to change and capable of continuous self-renewal. Furthermore, its design philosophy transcends the traditional notion of human exceptionalism and moves toward a more inclusive ontology. Indeed, as Ihab Hassan foresaw in 1977, posthumanist design today integrates contemporary performance both conceptually and practically.

3. Conclusion

Posthumanist design inherently encompasses processes of progress, transformation, and evolution. Particularly in the context of encounters shaped by feminist thought—where body, gender, and modes of production are reconfigured—hybridity and hybridization play a defining role. Through data and algorithms, bodies, objects, and identities can be integrated; consequently, designs that are transformed into data give rise to cybernetic selves, disembodied subjectivities, and digital bodies.

In the twenty-first century, all of humanity - either directly or indirectly - shares in the posthumanist experiences brought about by the fusion of technology and the body. It is increasingly recognized that assumptions of an ideal body, identity, or ethnicity reflect a reductionist approach and an anthropocentric stance within the postmodern world. This has given rise to design practices rooted in experimentation, such as post-body design or post-body typography. Such an approach also entails a reconfiguration of design within the framework of "algorithmic aesthetics." The decisive role of algorithms in the design process has laid the groundwork for a new paradigm by shifting aesthetic judgments beyond a human-centered framework. At this juncture, just as Boris Eldagsen's controversial 2023 concept of "promptography" brought the relationship between photography and artificial intelligence into sharp focus, terms such as "prompt-design" or "prompt-based design" may be coined or gain wider traction to articulate the evolving relationship between AI and design, and to express the essence of posthumanist design.

The future trajectory of artificial intelligence and posthumanist design remains uncertain. However, with the advancement of technology, approaches to the human-technology-design nexus will inevitably undergo transformation. This process may give rise to diverse variations and, naturally, provoke ethical debates. After all, neither the boundaries nor the ethical framework of posthumanism and posthumanist design have yet been definitively or universally established.

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