Aesthetics of Transhumanism

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Abstract

The current socio-political discussion on transhumanism concerns human use of NBIC technologies and sciences to enhance human biology and to radically extend human life. I address this concern by bringing art and design into the discussion. Artists and designers have been altering the human form — perceptually, conceptually and in actuality — from existing states to envisioned, preferred states. The perception of an ideal human is evident in the construction of statuesque sculptures. The conception of an enhanced human is evident in imagined mechanism in providing electronic senses and robotic extensions. The central issue now is that both the opponent and the advocate of transhumanism realize that the actuality of altering the human form is practicable, that duplicating the mind is probable, and that extending life is feasible.

Keywords cyborg, transhuman, posthuman, NBIC, radical life extension

The Introduction

The current socio-political discussion on transhumanism concerns human use of NBIC technologies and sciences to enhance human biology and to radically extend human life. I address this concern by bringing art and design into the discussion. Artists and designers have been altering the human form perceptually, conceptually and in actuality from existing states to envisioned, preferred states. The perception of an ideal human is evident in the construction of statuesque sculptures. The conception of an enhanced human is evident in imagined mechanism in providing electronic senses and robotic extensions. The central issue now is that both the opponent and the advocate of transhumanism realize that the actuality of altering the human form is practicable, that duplicating the mind is probable, and that extending life is feasible.

The Form

The human form continues to be one of the predominant themes in the arts. Its image symbolizes the core of human nature. Michelangelo's David and da Vinci's Mona Lisa reflect the deep-rooted sentiment of Pico della Mirandola when he said “...there is nothing to be seen more wonderful than the image of man.”

The late Archaic, early Classical period's Kritios Boy was sculpted with a perceived ideality of physical proportion and muscular strength. Varied representations of the human form continued

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1 NBIC is the acronym for Nanotechnology, biotechnology, information technology, cognitive and neuro sciences. The terms “NBIC” and “NBIC Convergence” were coined by Dr. Mihail C. Roco, founding chair of the National Science and Technology Council's subcommittee on Nanoscale Science, Engineering and Technology (NSET), and Senior Advisor for Nanotechnology at the National Science Foundation.
into the Golden Age’s melding of chiaroscuro and what Rembrandt called “beweechgelickhijjt”. Proportion and physical strength evolved into Impressionism’s ease of interpretation and spontaneity through visual experience and effects of light. In contrast, the human form was pulled apart and broken down in Cubism’s reassembled pieces. Communicating directly to popular culture, Pop Art’s larger than life portraits from Mao to Monroe turned the human idealized form into perceived icons. Removing the icon from popularity and rendering the banal, Fluxus blurred the interpretational form with performative art itself. New Media’s electronically extended platforms augment the human with robotic machines, as with Stelarc. Transbio design’s conceptual representation of the human form syncretizes technology and biology, as with my own Primo Posthuman.

In *Art of the Electronic Age*, Frank Popper constructs a timeline of works framing advances in electronic practices which cover the telematic, interactive, immersive, sensorial and performative spheres in intimately connecting the machine and man. As Popper writes, “although technological art is clearly the art form most representative of our Electronic Age, its full implications lie in the future. The artists share an exploration into a vast spectrum of aesthetics with the various electronic technologies.” Popper evidences the relationship between technology and artist in works that visibly reflect the time frame in which they are constructed and in epitomizing reciprocity where both artist and viewer benefit from the bio-electronic exchange.

The aggregate of practices that share creative uses of electronics and computers also seek to augment the sensorial experience and reality — including the artist, the viewer, and the works themselves. Sensory expansions affect the viewer’s reality through uses of light and space in impacting perceptions, as in Turrell’s architectural illusion of *Skyscape*. Altered reality in the medium of video offers a different sensorial exchange, by evoking emotional narratives through the sheer magnitude of the figures, their movements and gestures, as in Viola’s *The Greeting*. Presence and realness of connectivity between computer and corporeal interaction brings the virtual and real into a shared, augmented space as in Ascott’s *Aspects of Gaia: Digital Pathways Across the Whole Earth*.

Human augmentation may influence and impact traditional notions of classical style as contextualized by history in experiencing, examining, and understanding works of art. Merleau-Ponty’s phenomenological theory suggests that human perception stylizes what it perceives, “...because it cannot help but to constitute and express a point of view.” An individual’s frame of reference may be typical or vastly atypical depending on his sensory and cognitive augmented attributes and capabilities, suggesting a richer sensorial and cognitive reaction to style. Virtually-enhanced head displays, such as *Eyetap*, enable augmented visual attributes by replacing the field of vision of one eye with camera and computer which manipulate the real-time images with preferential stylized images. In a cognitively enhanced environment, reality turns the viewer into a participator by providing the tools to build her own personalized reality, first-hand.

Assessing the technologies and sciences available to us today, we can identify ancient myths and project future trends that reflect and affect our ever-changing nature. The stylized cyborg combines the ideal of perfection with the machine, as a primary human mythic archetype, comprised of robotics and electronics, as the cyborg “will not only make a significant step forward in man’s scientific progress, but may well provide a new and larger dimension for man's

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2 Rembrandt’s phrase in describing his painting: “Die meeste ende di naureeelste beweechgelickhijjt”, can be translated as greatest, most natural movement (emotion or motive). Rembrandt applied this phrase to his own paintings of the Entombment and Resurrection for Prince Frederick Henry in a much quoted letter to Constantijn Huygens of January 12, 1639.
spirit as well." The cybernetic posthuman combines the alchemic past and a future noosphere by inferring immateriality of consciousness.

Yet, the transhumanist view of the human form is not differentiated by association with a metal cyborg or disembodied human, as Katherine Hayles in her contribution to *The Global Spiral* academic journal suggests, but as a synergistic being, comprising a fluid continuity of self over time and suggesting distributed identity over disembodiment. Therefore, the continuation of personal existence is instrumental to radical life extension, which is the core of transhumanism. When I designed the future human prototype, *Primo Posthuman*, my aim was to combine design with proposed use of nanotech and biotech. Unlike the classical human form, this prototype takes the ideal of “man” and incorporates the transhumanist value of improving the human condition (in particular, the limited lifespan). Unlike the cyborg, the prototype’s unfolding nature is based on expanding choices. Unlike the disembodied entity discussed by Hayles, the prototype suggests a distributed entity. Rather than an erasure of the human form, the prototype suggests a trans-biological form and the continuation of personal existence as “a living organism is an open system in which matter and energy are exchanged within the environment,” and for the human system, consciousness is intrinsic and instrumental. However, for the purposes of transhumanism, “the environment” is understood as “an environment” to clarify that there may be a number of environments where living organisms could exchange matter and energy.

Further, the idea of matter is not limited to biological matter, but different types of substrates, which could contain a living presence or process of life in non-biological systems and on non-biological platforms. Here, the transformative human disposition emphasizes regenerative existence as a primary aim and the construction of its mass, or body, whether semi-biological or synthetic, as a secondary aim.

**The Concept**

Design is the “process of taking something from its existing state and moving it to a preferred state.” This is why design aptly relates to transhumanism. It also relates to the adaptative processes of the human species. In *The Human Use of Human Beings*, Norbert Wiener states, “the human species is strong only insofar as it takes advantage of the innate, adaptive, learning faculties that its physiological structure makes possible.” This view of cybernetics contrasts with Jean-Pierre Dupuy’s assertion in *The Global Spiral* when he writes, “… cybernetics is meant to signify control, mastery, governance …” — over mankind.

According to Alfred North Whitehead, organisms anticipate the future, choose routes to take, and then adjust their behavior accordingly, as "every organism exhibits some degree of aim or purpose,” thereby becoming a model. Such a model can be seen in what Whitehead provides as a philosophical vision of behavior. Also, such a model can be recognized in Wiener’s scientific framework of cybernetics and the potential for organisms to be viewed as formations in assessing technological advancements. Notably, “a living organism is no longer seen as a permanent form but rather as a network of activity. With this new definition of life, the philosophy of becoming supersedes the philosophy of being … and life becomes a process bound to a notion of change."
The Adaptation

In May 2007, MIT Media Lab held a symposium to explore how technology is merging with humans and to define the emerging science of human adaptability.

"The story of civilization is the story of humans and their tools. Use of tools has changed the human mind, altered the human body, and fundamentally reshaped human identity. ... A science is emerging that combines a new understanding of how humans work to usher in a new generation of machines that mimic or aid human physical and mental capabilities. ... Given all or even most of this population a quality of life beyond mere survival is both the scientific challenge of the epoch and the basis for a coming resolution over what it means to be human."21

Design and Process. “Human beings demand change as a result of evolutionary cravings for stimuli. But How will our senses be satisfied in the future?”22 A group of designers at ID Fuel agree that "it could be argued that the reason humans have come so far so fast where technology is concerned, is that we've never been satisfied with our own physical abilities. Our arms weren't fast enough to catch fish, so we whittled fishhooks. Our feet got cut when we worked tending crops, so we covered them with shoes. Our eyes went blind in the glaring snow, so we carved slitted goggles from wood to protect them. And, as our command of tools continues to improve, so do the items we develop to augment ourselves."23

State of the Art Human Futures. Consider a field of human biosculpture, where the human body, mind and identity are modified by the user. If design is a social process then the art of human enhancement can be viewed as a process of adaptation. For artists and designers in the biological arts, the idea of molding or sculpting the human form has enormous potential. For media artists in interactive, immersive environments, the idea of virtuality as a constructed identity has continuing value regardless of its creator. Tom Ray, creator of the “Tierra” artificial life simulation, suggests that "the idea of creating life is exciting but extending life of humans for the purposes of continued and regenerative existence may not be realized as a mode of aesthetic creation in traditional works of art".24

Even if we accept the 2,480 year old Kritios Boy as a traditional aesthetic creation, over time it broke down and was restructured — its body in 1965 and its head in 1988. Like the metamorphic rock, humans are made of atoms which systems deconstruct over time. We too need to be restructured when our parts break down. Outside the sphere of what Ray identifies as traditionalized art comes the NBIC quartet as the probable tools for aesthetic creations of continued and regenerative existence.

The Death

Atoms make up molecules and molecules make up cells. Cells organize to make up systems and the systems (organs) make up an organism. Atoms are, for the most part, indestructible and, thereby, immortal. However, the most stable state for the atoms of living systems is as molecules, not as isolated atoms. Atoms are more stable when joined together than when isolated, so you will never see degradation of living systems all the way down to the atomic level.

The death of cells is known as apoptosis25 — and it is theorized that every cell is programmed to die. Each cell contains genetic information related to its life span, and this span is different for cells in different organs. The triggering of cell death is considered to be a protection against mutation of offspring cells, which are more exposed to risk than the parent stem cells. According to Grey Fahy at 21st Century Medicine cryobiology laboratory:
“The molecular components of living cells are constantly being broken down and built back up again. Molecular modules will last until (a) they are hydrolyzed by direct, spontaneous reaction with water, (b) they are transformed into something else by extraneous reactions such as oxidation or other forms of random damage, or c) they are absorbed by a living entity and rebuilt into that entity.”

Personalizing Death. The human form continues to be one of the predominant themes in the narrative arts, reminding us of human-perceived ideals and of human misfortune. Denigrating human biology is not the telos of life for transhumanists. Rather, it is the perceived ideal of a “continuation” over time and the ability to endure — that even if we age and fall apart, we can reconstruct and continue to live on.

I turn to Derek Parfit on personal identity and continuity, “… what matters to me in ordinary survival is not identity over time, but something else. Further, since the only thing of significance in common between fission and ordinary survival is the psychological connectedness/continuity …” Parfit suggests that persons are themselves separate and distinct from their bodies, but that persons’ existence is, in fact, nothing other than the existence of a brain and body, the foundation of Parfit’s constitutive reductionism. An analogy applied to this understanding is suggested by Carsten Korfmacher:

“Cellini’s Venus is made of bronze. Although the lump of bronze and the statue itself surely exist, these objects have different persistence conditions: if melted down, Venus ceases to exist while the lump of bronze does not. Therefore, they are not identical; rather, so the suggestion, the lump of bronze constitutes the statue. The same is true of persons, who are constituted by, but not identical with, a physiology, a psychology, and the occurrence of an interrelated series of causal and cognitive relations.”

I do not intend this to be a diversion, but more an insight into a growing concern about personalizing death. A person might have a biological death but continue, immediately or sequentially, in another platform. This might be looked at as a transformative or transitional stage, but not an irreversible death. It also bears on the notion of an optional and temporary death — one could decide to cease to exist in one platform for a period of time but continue in a different medium, or cease to exist in any platform until a later date.

The Issue

According to Popper the full implications of technology’s use lie in the future. Popper suggests that those who create share a "preoccupation with exploiting a vast spectrum of aesthetic categories" with advanced technologies and an "... awareness of the extent of social and cultural change produced by the latest technological developments ... to bring about a significant relationship between basic human experiences ... and the radical and global intrusion into them of the new technologies, in all walks of life, with all the beneficial effects, potential hazards and immense possibilities they offer." I recognize the many questions and concerns about whether or not modifying or enhancing the human is advantageous, and there is deep interest in the ratio of positive vs. negative outcomes of human enhancement. Nevertheless, most of the relevant literature reports a consensus of opinion that NBIC technologies — separately or together — will inevitably affect human biology and increase human lifespan. What might those working within the exploratory sciences, especially biology and life extension (gerontology), grasp from this opinion? Neither over-enthusiasm nor over-whelming negativity offers a solution because both options lack the transdisciplinary rigor necessary for strategizing the future and because both are sorely outdated by pigeonholing the potential of creative possibilities into one or the other. This offers
little option other than to choose between them. We must develop a field which addresses human futures and the transformative human in engaging more inclusive discussion and encouraging deeper research and study.

Hayles claims that “there is little discussion of how access to advanced technologies would be regulated or of the social and economic inequalities entwined with the questions of access.” The issue of distribution is one of the most often discussed transhumanist topics, as evidenced by the numerous transhumanist venues expressly developed for this purpose. Hayles continues with “… or at least that transhumanist individuals will be among the privileged elite that can afford the advantages advanced technologies will offer.” While I have admiration and respect for Hayles’ scholarship on many topics, this is one where she is uninformed. My televised cable program “Transcentury UPdate”, which aired in Los Angeles and Telluride from 1986 through 1993, broadcast numerous segments on the political and ethical issues of technology and segments on building scenarios for the global distribution of technology (green energy, etc.), the latter largely based on Buckminster Fuller’s distribution plan. Far more recently, the Extropy Institute discussed these issues at its 2004 Vital Progress Summit, whose press release stated “[n]o organization, no policy, no person should have the absolute power and authority to hinder scientific and medical advances that can and do help millions of people throughout the world.” And more recently still, the Institute for Ethics and Emerging Technologies addresses these issues as fundamental to our future.

The Field

The exploratory experimentation and manipulation of biological life systems, from single cells to organisms, is increasingly drawing attention to transdisciplinary practice and theory in the arts and sciences. As noted, some practices have reached far into the uncomfortable zone of bioengineering and genetics, where science and medicine reside, in aptly creating bio-experiments and offering opinions on the meaning of life. On another side of the creative spectrum, exploratory creations with nanotechnological particles have become a molecular vehicle for establishing artistic practice and theory. The transformative human arises when we combine biodesign and nanodesign, along with information technology and cognitive/neuro science. The practice and theory concerning the scope of human enhancement is, I suggest, located at the transformative human. This becomes a projected field concerning human futures, especially for the purpose of radical life extension.

In one sentence: the required tools are found in the coming together of nanotechnology, biotechnology, information technology, and the neurological and cognitive sciences provide the transdisciplinary media for investigating the continuation of life by enhancing, extending, and regenerating life in biological, synthetic and cybernetic forms.

While Dupuy suggests that NBIC are dehumanizing humanity, I see it quite differently. He states, “... they quarrel with the very fact that we are born.” To the contrary, I thank my mother very dearly that she birthed me and wish that I had possessed the health and the medical advances to have given birth to my pregnancy as well.

The Study

Lowry Burgess of Carnegie Mellon’s “Studio for Creative Inquiry,” offers a pedagogical approach to the future. The program’s mission elegantly states, “interdisciplinary projects bring together the arts, sciences, technology, and the humanities, and impact local and global communities.” It seems that a wide-open view of the arts and personal responsibility ties in nicely to the field of Future Studies.
Cultivating observational “polis pods” for discourse on the future, including transhumanism is timely. The impacts of change affect everyone, regardless of what domain the changes originally occur in and where the impacts are first felt.

Considering the evolving human form as a research objective is imperative because of the intersection of human enhancement and the future, as well as academic discourse pertaining to theories concerning this intersection. For the past twenty years I have engaged in the fields of media arts and the social science of futurology concerning human enhancement technologies. Through this immersion, my insights have developed beyond the biotechnological attributes toward ideological viewpoints and the worldview of transhumanism, including the body biopolitic and personal bio-freedom of human enhancements. Of course this is directed affected by issues of when life begins and ends, identity in simulated environments, the conjectured transhuman and posthuman. I have come to understand that a developed approach to human enhancement reaches beyond electronic media, bioart, and immersive design. I propose that what is needed is a field of aesthetics which focuees on radical life extension, especially at the convergence of NBIC technologies. These technologies and the supporting science relate to the push beyond limited lifespan, senescence, and apoptosis toward regenerative existence and optional death.

To balance out the discussion between disenchanted spectators and transhumanism, we need more creative inquiry. Let’s adjust our caps at a slight tilt and engage with more information and experience of constructive creative thinking, for “ideas evolve just as do living things.”

The Conclusion

Bringing arts/sciences and design into the contemporary discussion of transhumanism reflects the idea of the human as a form which transforms. Over time, the inventive approach has been to augment, extend, modify, and enhance our communication, our mobility, and our experiences of the world around us. Often when our passions are the driving force of change, they are discounted or misconceived. To sum up this sentiment, I refer to a misconception about a brave new world.

The brave new world represents the fears of society toward the possible negative outcomes of emerging technologies. This is a regretful paradox because Aldous Huxley borrowed the phrase from Shakespeare, where it occurs in Miranda’s inspiring soliloquy in The Tempest —

O Wonder!
How many goodly creatures there are here!
How beauteous mankind is! O brave new world
That has such people in’t!

“Shakespeare’s words originally meant something far different” than what Huxley intended in his famed story “Brave New World.” Huxley’s satirical piece is fiction, not scientific prophecy. “Though Huxley’s vision seems, to the cynic or to the defeatist, to have prevailed in this strange age, it is Shakespeare’s insightful vision that resonates more strongly in its deep perception, in its profundity, and in its power to inspire.” Perhaps future discussions will inject a little more Shakespeare and a little less Huxleyfear.
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