

# ISEA2024 formatting instructions for authors

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## The demiurgic principle of digital senses

### Abstract

The paper aims to investigate uncommon senses, human and non human, developed by cyborg and performative artists, specifically founders and members of Cyborg Foundation and Transpecies Society in Barcelona. While making use of advances in cybernetics, the new uncommon senses want to build bio-political networks, technologically capturing the energy of the living and discharging it into the human in a process reminiscent of the first Creation. Inspired by Donna Haraway's sprawling thought, Katherine Hayles's posthuman philosophy and the "re-cosmicisation" of the world by philosopher Yuk Hui, the paper discusses the way how new senses challenge the dualism of the categories deity/humanity, omnipresence/liminality, omniscience/human speculation, and opens up to a nomadism within the same categories. On the borderline between animism and transhumanism, the new sensory implants become the cornerstone of technological religions and, while expanding the sensory cognitive potential, become themselves part of an atypical process of biopolitical control of the world.

### Keywords

Sense enrichment, intelligent sensors, cybernetic animism, big data oracle, cyborg omnipresence, creation – incarnation- transfiguration, transpecies multidimension, atmospheric sensors, weather sensors.

### Introduction

The Cyborg Foundation of Barcelona, co-founded by the artists Neil Harbisson and Moon Ribas, is a reality ready to claim the rights and identity of the new cyborgs: individuals born with a human body, but ready to amplify it with sensors that allow them to create

hybridity and go beyond the sensory limits imposed or suggested by human fate.

Among the rights, they identify: a) the recognition of the sacredness of bodily integrity, far from searches, seizures, suspension or interruption of functions, detachment, dismantling or disassembly, which are, moreover, harmful without due process; b) the freedom to express oneself through adaptations, alterations, temporary or permanent enhancements of one's body shape and, at the same time, from forced or otherwise involuntary morphological changes; c) the right to equal rights and responsibilities of natural persons, d) the right to bodily sovereignty over electronic intelligences acting as permanent residents, visitors, registered aliens, intruders, insurgents or invaders within their bodies and domain.

By applying particular technologies in their bodies, cyborg artists identify in the new sensor both a work of art and a new meaning, while maintaining the exclusivity of fruition/usability. "In Cyborg Art the artwork, the audience and the museum is all in the same body" they affirm.

Propagating from Cyborg Foundation is the Transpecies Society, co-founded in 2017 by Neil Harbisson and Moon Ribas with Manuel De Aguas, to support humans willing to absorb peculiarities of other species in a curious and transcendent exchange, generating perspectives and sensations never known and never possible before by the human species and vice versa.

In the present paper, we have decided to focus on the Cyborg Foundation and the Transpecies Society as case studies of two virtuous realities, in which various cyborgs have had the opportunity to organize as a cultural reality, as a cyborg rights union, and as a facilitating center (with a network of computer

scientists and surgeons) for those who have the curiosity and ambition to experience uncommon forms of reality and life through an expanded body.

### A panoramic view of post-human senses

**Listening geographically distant and extraterrestrial colors.** Neil Harbisson is the first legally recognized cyborg. Using an antenna implanted in his brain and developed together with computer scientist Adam Montadon, he has been able to perceive the musical frequencies of colours since 2004. Harbisson suffers from a condition, achromatopsia, or the inability to see colours, which limited him to living in a black-and-white movie until the age of twenty-one. Over time, his antenna has transcended colour vision and, in addition to translating colour waves into sound waves (technically referred to as sonochromatism), has been fitted with a bluetooth device to connect via wi-fi and allow him to listen in his brain to the colors and information traveling over the network. The use of the antenna for artistic purposes allowed him to create works of art such as sonochromatic paintings and sell his unique and temporal colour perceptions as NFT Non- Fungible Tokens. As a result, the Internet connection, instead of being only used as a communication system, is used as a sensory extension, that also gives him the ability to connect with Nasa's international stations and receive extraterrestrial colors, becoming a *senstronaut*, able to sensorially explore another space.

An advocate of cybernetics for all, Neil Harbisson, describes his antenna as an R-R: real reality, stating: "I think the concept of virtual reality is a waste of time, when there is a real reality that you can't fully experience". Sensors, prostheses, implants prove to be tools to reinforce immersion in the perception of the body, tangible tools that extend the possibility of gaining awareness of reality.



Figure 1. Neil Harbisson, Portrait © Lars B Norgaard

**Choreographing displaced seismic activities and transmigrating fetal heartbeat.** Moon Ribas is a performance artist and the first living cyborg woman. After wearing from 2007 to 2013 several devices that allowed her to perceive people's colours, instead of their faces (Kaleidoscopic Glasses), and a speedometer glove that allowed her to perceive and measure the speed of all the people walking near her (Speedborg), found the courage in 2013 to have a sensor implanted to warn of the arrival of seismic and earth tremors anywhere on the planet and on the moon. Ribas, who is a choreographer by training, danced the first cybernetic choreography in history, dancing the rhythm of the



Figure 2. Moon Ribas, *Waiting For Earthquakes* © Hyphen Hub world's earthquakes and the moon's seismic activity (*Waiting for Earthquakes*), accompanied by a soundtrack based on the musical frequencies of earthquakes in specific places and times. Being physically on earth while her feet perceived the moon, she added another level of perception that verges, if not entirely, on divine omnipresence. Such sensors demonstrate how a cyborg can not only improve our relationship with animals, and outer space, but incorporate perceptions of other living beings and even transcend the limits imposed by human nature.



Figure 3. Moon Ribas, *Seismic Garment*, © Carlos Montilla

In 2021, indeed, during her pregnancy a sensor made possible for her partner to perceive the fetus' heartbeats. Moon wore a belt around her belly equipped with an ultrasound sensor, like a fetal doppler (an ultrasound device used to detect the fetus' heartbeats), connected to a phone that would make a call to the phone of Quim Giron, artist and Ribas' partner. Giron thus becomes able to listen to the baby's heartbeat and the fluids in the amniotic sac. This is an experiment in digital pregnancy, which flanks the biological one, and pushes the potential of cyborgism further, freeing corporeity from its physical obstacles, becoming an enhanced body, a body augmented by technologies and in close relationship with them.

The post-human individuals do not lose their material substance, but acquire capabilities impossible without the hybridization of the physical body with mechanical prostheses or digital tools.

**Detecting atmospheric pressure, temperature and humidity.** The reality that surrounds us is full of elements that are imperceptible to the human species, however, in nature we find a great diversity of species that have the ability to perceive other qualities of the environment. As Moon Ribas, Manuel De Aguas, a cyborg artist and transpctee from Catalonia, challenges the human being to enrich himself with some of these perceptions and reveal the broad spectrum of invisible elements that surround us.



Figure 4. Manuel De Aguas, Weather Fins © Marcelina Dvorak.

The sensory fins he has developed and implanted in the upper extremities of his skull allow him to feel atmospheric pressure, temperature and humidity. De Aguas' performances become a collaboration between the artist, his fins and the information contained in the atmosphere, and allow the audience to experience different climates of the planet through sound in real time. In fact, the atmosphere is full of information and is an element in the biopolitical construction of personal and collective identities.



Figure 5. Manuel De Aguas, Atmospheric Pressure Sense © Transpecies Society

**Penetrating the physical and chemical properties of matter.**

Other cyborgs, artists-in-residence of the Transpecies Society community, are similarly particularly interested in enhancing the ability to perceive physical states of the atmosphere, as if they could subtly penetrate the elementary particles of matter. Kai Landre's Cosmic Sense captures, indeed, the subatomic particles created by the collusion of cosmic rays with the atmosphere of our planet and, like a musician, he translates the frequency of each of them into a musical note.

The sensor implanted by Alex Garcia in his chest allows him to perceive the quality of the air he breathes and to detect atmospheric pollution through vibrations on LEDs.



Figure 6. Kei Landre, Cosmic Sense

Moreover, magnets implanted in the fingers and ears of visual and performance artist Hannah Meltzer enable her to detect magnetic fields, and lastly, the sensory system developed and installed by Joe Dekni in his head is a radar system that uses radio waves to determine the distance, angle and radial velocity of objects relative to him.

Radicalising the body without artaudian organs, the cyborg frees the human body from its constrained

physicality and obsolescence and enjoys the exponential development of techno-sciences, in the morphological and digital spheres.

**First experiments on human counter-obsolescence.** Launched in the 1980s with practices of electrical body extensions, the process of cyborgization of the body has strengthened considerably in the last decade. Stelarc, a famous Australian artist born in Cyprus, is a pioneer in the redefinition of the human body, which, according to the artist, has become obsolete to hold up to the new rhythms and times of the economy, society and art. He has turned his body into a sort of post-human robotic entity.

In 2006 by undergoing a surgical operations to implant a (third) ear in his arm, developed with his own stem cells, Stelarc had, in a way, decolonized hearing and redefined the concept of listening and acoustic sensitivity: the ear is a sense organ that could be placed on the skin, limbs and other parts of the body to activate sensory and non-verbal listening. The documentation of the surgery was disclosed to turn the cameras on the artist's transforming body. The prostheses Stelarc has created throughout his career and the grafts, he has experimented with, reveal a parable of human time and a bio-political line, without which there is no survival for the human being.



Figure 5. Stelarc, Ear on Arm © Giovanni De Angelis.

If his practice, along with Orlan's, paved the way for major invasive experimentation on their own bodies, he also began to examine how digital culture would affect the human condition and sensoriality. As biomedical industries, scientific research organizations and technology companies compete for access to the body's goldmine of data, new legal and ethical

questions are emerging about what constitutes the Id, Ego and Superego of the hybrid continuum of the post-human being.

## Cybernetics is religion

**Cyborgs as overseeing political creatures without gender, genesis or end.** As stated by Donna Haraway, American philosopher and leader of the cyborg theory, "The cyborg is in fact a creature neither machine nor man, neither male nor female, neither man nor animal, situated beyond the boundaries of the categories we are normally accustomed to using to interpret the world", a metadata of itself, which, while producing data in real time, captures and decodes new ones. If surveillance is exerted on humans, it can also be exerted by humans on the functional mechanisms of life, such as the geological vibrations of the surrounding landscape, heartbeats, the atmosphere in which we are immersed, creating new alliances and redefining social relations.

'I would rather be a cyborg than a goddess', Donna Haraway famously wrote at the end of her 'A Cyborg Manifesto', an exhortation to socialist feminists in 1985 to adopt the cyborg as a new structuring myth for feminist thought and practice (Haraway, 1991). Perhaps the evolution of the cyborg after forty years can also aspire to the dimension of the divine. The cyborg of which Donna Haraway speaks is a creature of social reality and fiction (arising from literary and cinematic imagery), a way of imagining the world without gender and therefore without genesis or end (divinities have no gender and know no death), whose unitary policy is to combat the structuring tendencies of capitalism and patriarchy.

**Towards the digital immortality.** Many of us are already psyborgs, a term coined by Neil Harbisson to describe individuals whose minds are augmented by electronics, rendering us unable to imagine ourselves without an internet connection. We can, indeed, no longer think of human being in exclusively biological terms.

The pursuit of *mind uploading*, which involves replicating the human brain to create an exact digital copy, holds the promise of digital existence beyond death. Initiatives such as *Human Brain Project*, *Carboncopies Foundation*, and *2045 Initiative* all seek to achieve a complete simulation of the human brain and the transfer of consciousness from biological to technological mediums. This concept resonates both with the religious idea that the human beings

themselves are copies of God, created in his image and likeness, and with the prospect of cybernetic immortality. Being cyborgs means to indulge in the pleasure and power of thinking ourselves as autonomous beings, “driven by a desire to enhance our bodies to compensate for the shortcomings of evolution” (Hayles, 1999).

As the American postmodern literary critic Katherine Hayles argues, the notion of post-human does not signify the end of humanity, but rather the end of a certain narrow and finite conception of what it means to be human. The idea of integrating electronics and data as an extension of human bodies liberates us from the constraints of limited knowledge and, following Nietzsche's proclamation of the death of God, enables humans to transcend the fear of hubris and accelerate towards abilities previously attributed to superior, omniscient, and omnipresent entities.

**Recosmicizing human beings.** The philosopher Yuk Hui urges us to “recosmicize the world”, borrowing the term from the French geographer and philosopher Augustin Berque. (Yuk Hui, 2000). “Recosmicizing the world” implies a duty to generate 'ways of living that resolve the conflict between traditional knowledge and modern science, between technology and mysticism, between the rational and the non-rational.

We are witnessing a continuous regeneration of the corporeal real and the post-human real, and technology has become the means by which human beings *recosmicise* themselves, elevating themselves, acquiring capabilities and powers beyond biological limits. In the amalgamation of circuits, thoughts, algorithms, and organic and silicon materials, the boundaries between humans and computers, between human and artificial intelligence, become increasingly blurred.

As distinctions between the human and the machine, between physical and virtual realities fade away, we contemplate the possibility of reaching the singularity, as theorized by the American computer scientist and futurist Ray Kurzweil. (Kurzweil, 2008). Numerous scholars and museum exhibitions have grappled with this question and sought to dissect it, starting with Jeffrey Deitch, the American art dealer and curator renowned for groundbreaking exhibitions like "Post Human" at the Musée d'Art Contemporain in Lausanne in 1992, credited with introducing the concept of "posthumanism" to popular culture. Or "AI: More Than Human" at the Barbican Centre in London (2019), sparked a growing debate on our species' future through evolutionary integration with artificial life

forms. More recently, "Future and the Arts: AI, Robotics, Cities, Life - How Humanity Will Live Tomorrow" at the Mori Art Museum in Tokyo (2020) delved into the social, political, and ethical ramifications of advancing physical, cognitive, and biological capabilities. (Mancuso, 2023)

Questions once addressed to the heavens and requests to the gods can now be addressed to intelligent sensors and artificial intelligences far more powerful than we are: an ultra-dimension not only of the machine, but of human beings.

In his book *Homo Deus*, Yuval Noah Harari asks, "What is more valuable, intelligence or consciousness?" "What will happen to society, politics and everyday life when unconscious but highly intelligent algorithms know us better than we know ourselves? Will we lose control of these inventions?" (Harari, 2017). These questions remain open, alongside an investigation into the possibility of coexistence between two dimensions of the divine: the algorithmic multi-dimension and the intuitive or perceptual multi-dimension. Contemporary dataism, the belief or idea that the entire universe is or is becoming a stream of data, encapsulates the concepts of divine omniscience and omnipresence delivered to living beings, so, once again, the boundaries of science and faith blur.

**Any advanced technology is indistinguishable from magic.** Several classical thinkers, such as Comte, Tylor and Weber, argued that the rationalisation of Western society, with science and technology as driving forces, would inevitably lead to the gradual disappearance of religious- mythical ideas and magical practices. They argued that humanity would eventually head towards what Weber called a 'disenchanted Western world'. Apparently, such premonitions contrast sharply with the present condition of cohabitation of human beings, cyborgs and living beings in a kind of simulated world or artificially 'enchanted garden'. Cyborgs, hackers, scientists of the transhuman seem to be the heirs of the functions that were once held by magicians, as investigators and conquerors of new frontiers of the possible.

In the world of Silicon Valley, in fact, many digital companies cultivate the ambition of shaping a new humanity that has as its starting point the overcoming of the human condition. The network, new intelligent implants, and the reinforcement of artificial intelligence serve to transform human being into a divinity by overcoming the boundaries of the body and earthliness in the name, maybe, of singularity.

In 'TechGnosis: Myth, Magic and Mysticism in the Age of Information', Erik Davis writes about a

group of information and communication technology (ICT) experts who call themselves 'techno-wizards' and 'wizards' (Davis, 1998).

According to Davis, these people believe that 'the postmodern world of the digital simulacrum is ripe for the pre-modern skills of the witch and wizard', perhaps evoking Arthur C. Clark's third principle that *any sufficiently advanced form of technology appears indistinguishable from magic*.

**Questioning the modern priestess Pythia.** If ancestral animism was governed by the principle of life force, late modern techno-animism seems to be governed by the principle of artifice, which becomes a real crossroads of visions and beliefs and bodies in metamorphosis. "Cybernetic animism is the practice of interacting in digital spaces within an ecology of non-human and/or non-bodied elements and the process through which this interaction makes open-bodied identification available as a way of Being-in-the-World" (Devin Proctor, 2018).

Today, it would seem that digital worlds speak to this archaic unconscious or to the deepest memory of these societies. Almost as if modern sensors and AI were a modern Pythia, the priestess at the temple of Apollo at Delphi who dispensed oracles. In ancient Greece, people who had trouble with the answers offered by Aristotle, Pythagoras, and Archimedes could turn to the Pythia. She was the high priest at the temple of Apollo in Delphi - more widely known as the Oracle of Delphi. Combining Big Data and AI allows us to build very powerful oracles. As far as the Oracle of Delphi was able to provide accurate responses because it had access to a vast store of knowledge, including myths, legends, and historical events, AI is as good as the data it is trained on. When artificially intelligent machines enter the organic world of life, increasingly as an autonomous reality, then the step towards techno-animistic ideas and sentiments is shortened.

## Conclusion

From this perspective, techno-animism can be seen as an unforeseen and 'irrational' side-effect of the acceleration of the rationalization process. Rationalization does not, by definition, equate to disenchantment, but can also mean *re-enchantment*. Paraphrasing Chiara Valerio, Italian mathematician and writer, what is the difference between dancing to make it rain and applying voice-assistance technology to control your house or play music? (Valerio, 2023). As we undergo the process of cyborgization, our bodies

effectively transform into devices, whereby simple gestures such as a hand movement, a step, or a nod directly interact with the Earth's electromagnetism, triggering new physical dynamics around us.

Norbert Weiner, the eminent mathematician and pioneer of modern cybernetics, highlighted as early as the 1950s the close correlation between religion and technology (Weiner, 1991). Lacking a technological literacy that allows us to understand it in terms of cause and effect, attributing its advancements to human knowledge influenced by errors and subject to evolution and improvement, we view technology as a mystical phenomenon.

Furthermore, when we accept the perspective of simulation theory - wherein all reality, including the Universe, is likened to an artificial simulation akin to a computer simulation - it would appear that the post-human could summon the supreme creator back to life, initiating the journey towards a Second Creation. It would involve capturing all the energy of the living and discharging it into the cyborg body, reminiscent of the First Creation. The plan is to transfer all the attributes of the living into organic-artificial components endowed with essentially the characteristics of the human person. This second Creation, although deemed profane, seems to proceed by "appropriating the fundamental categories of the Christian mystery, beginning from creation itself, to incarnation, transfiguration, and resurrection" (Mmembe, 2022).

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