

Soft Robots

The Art of Digital Breathing

By Marie Laurberg

"My voice started showing up in places I hadn't put it,"¹ says the artist Holly Herndon. She and her partner, Matt Dryhurst, are increasingly engaging as activists in the social-media and learning-machine mud pit that she calls "a multi-user dungeon text game for the AI era." A musician and performer, Herndon has become an icon, rising above the general pool of NPCs (non-playable characters) feeding the machine with information and selfies nonstop in search of attention. A giant public "game." The prize? To be remembered by a learning machine. "You become a concept anyone can use ... a plastic asset." In 2020, that happened to her. The training models had gathered enough information for her name to generate an image, a pastiche of her persona with her signature ginger hair. In 2022, she started a website that allows artists to check if their person or work has been used in training datasets, offering a simple model for opting out. The program generated more than two billion requests. There seems to be a widespread desire to step away from the all-consuming flood of data.

In a series of projects, Herndon and Dryhurst venture into the new territory where our voices and lives are turned into data. Their activism is not centered on copyright but on agency. Who controls our lives in this new reality? How can we shape our presence in the digital realm, and where are the exits? In 2021, Herndon released *Holly Plus*, allowing everyone to use her voice for anything. As she puts it, "I wanted to formally decentralize my identity." Her project merges real-world activism and existentialism. How do you gain agency? she asks. What is a person? Can we extract the human from the machine in a world where we are all being turned into datasets, soft robots?

As these questions are being asked in an artist's studio in Berlin, Seoul is the setting for a future version of a like-minded inquiry by the artist Ayoung Kim. The protagonist of Kim's film work *Delivery Dancer's Sphere* (2022) is a motorcycle courier for a delivery platform operated like a video game. Deliveries are made as the bird flies with no human contact. Dancemaster, the voice in the courier's ear, calculates the route and speed to the destination, as the couriers ride as Delivery Dancers following the dictate of the machine. Tilting space itself, Dancemaster enables the dancers to travel at light speed. The protagonist's body only truly comes to life when it meets its double in a warehouse. It all concludes with an erotically

¹ All quotes from Holly Herndon are from the voiceover of the new video work created for Soft Robots.

charged fight between the two women – “time slows down every time I meet her” – and the firing of the delivery dancer. Her body is too heavy for the algorithmic dance.

Copenhagen Contemporary’s exhibition *Soft Robots – The Art of Digital Breathing* brings together distinctive contemporary artists to look at life in the new technological ecology. Created both with and without new technology, pathbreaking works highlight the power of art to explore the world through poetry, sensuality and experiment, asking critical questions about the futures we are shaping for ourselves.

United by an experimental, critical approach, the artists search for the breath and soul that may be hiding in future cityscapes among doppelgängers and poetic machines. With our curatorial approach, we let the polyphony of the group format spark a conversation about technology’s place in our lives. A conversation that allows incompatible viewpoints and conflicting theories to coexist in the same physical space.²

Machines and Myth

Why do our technologies arouse so much hope, and fear, in us? This question resurfaces whenever an invention or technological component enters the public conversation. Every innovation brings hopeful visions of the future, which are almost rhythmically countered by dystopian warnings about the machine as an all-destructive force capable of destroying the planet. Most recently, artificial intelligence has spawned the concept of “the singularity,” a god-like superintelligence, along with a torrent of horror scenarios from rampant unemployment to the total annihilation of humankind.

Hardly new, this pattern of thinking is rooted in Western cultural history, where notions of artificial intelligence in the form of mechanical helpers, heroic clay giants and magical objects have existed for centuries and millennia. Who first came up with robots, automatons and artificial intelligence? Usually, the history is traced back to medieval artisans who created machines that could move on their own. But the idea of artificial intelligence runs much deeper. In her 2018 book *Gods and Robots*, historian Adrienne Mayor traces the desire for artificial life back more than two thousand years to mythical narratives of replicating, improving or even surpassing natural life by what she calls *biotechne*, “life through craft.”³ The great myths of the Hellenistic period include figures like “the bronze robot Talos, the techno-witch Medea, the genius craftsman Daedalus, the fire-bringer Prometheus and Pandora, the evil fembot created by Hephaestus, the god of invention.” Ancient myths abound with beings embodying the fantasy of artificial life. The idea of artificial intelligence is timeless and was

² I want to thank Curator Line Wium Olesen and Assistant Curator Rasmus Wegener for our many conversations leading to the final selection of artists and works.

³ Adrienne Mayor, *Gods and Robots: Myths, Machines, and Ancient Dreams of Technology*, Princeton University Press, 2018.

active in the cultural imagination long before technology made it possible. As Mayor writes, “imagination is the spirit that unites myth and science.”

In the 20th century, the relationship between humans and machines became a central cultural drama of modernity. Art, film and literature established the robot as a cultural archetype, an anthropomorphic, electromechanical figure embodying our technological hopes and fears in a single entity. There is a straight line from the diabolically seductive humanoid machine Maria, in Fritz Lang’s silent science-fiction film *Metropolis* (1927), to the determined killer robot of the 1980s *Terminator* movies. The robot is a threat. It has a steel skeleton. Sexy and violent, it is bent on our destruction.

Soft Technology

Today, we are witnessing a radical shift. Artificial intelligence, synthetic biology and quantum computers are challenging our concepts of humanism in new ways. Some of the world’s most technologically advanced nations are developing sophisticated humanoid robots for service, manufacturing and warfare applications, but a new type of technology is emerging as well. Our technology is becoming softer. In the past decade, soft natural and synthetic materials have become increasingly central to technological innovation: octopus-like robots made of flexible silicone, microscopic synthetic organisms combining cells from frogs and human hearts, symbiotic robots merging biological and technical materials, entirely new experiments with “wetware” replacing the silicon chips of computer processors with live neurons. All these new developments break with the standard concept of technology as hard, mechanical and impervious. Technology is becoming responsive, sensitive to its surroundings, edging closer to the organic softness of living organisms. As the artist Laura Tripaldi suggests in her essay in this book, this new development opens an alternative to today’s all-devouring “technosphere,” the giant autonomous network of technologies consuming vast amounts of energy and national resources for no other end than its own growth at the expense of the ecosystem. The notion of technology as an all-devouring parasite is reductive, she writes. It only fosters despair. Instead, we need to develop an imaginary that affirms our agency and potential to shape technology locally in soft, distributed and self-organizing structures. A new technological ecology. Among those developing such imaginaries are artists.

Robots are appearing in art in new, radically experimental guises: animal-like beings with soft, cute shapes, automated sensory organs with voices, diffused intelligences in synthetic neural networks. In the works of A.A. Murakami and Silas Inoue, technology dissolves into vapor or drifting bubbles. Vapor embodies the cloud as a new metaphor for technology’s omnipresence. It is the air we breathe in and out, from cloud computing to the artificial clouds currently being developed to slow global warming. In the works of Ayoung Kim and Holly Herndon, the robot is an internal algorithmic force shaping human emotions and behavior.

People are becoming personal brands, worker bees embedded in a reality governed by data and coded control. In *Arhat Robot* (2026), Takashi Murakami has fashioned a robot in his own image, a mechanical double opening its face to reveal the artist's own, moving its eyes and mumbling the *Heart Sutra*, a sacred Buddhist text. The exhibition breathes, turning humans and machines inside out.

Science Fictions

Soft Robots explores the shifting boundary between humans and machines at a time when the anthropocentric worldview is being challenged by the ecological imperative. Nanna Debois Buhl's work, created for this exhibition, revisits Mary Shelley's 1818 novel *Frankenstein*. Shelley's story of an ambitious scientist creating a living monster out of dead body parts has become the very symbol of our simultaneously megalomaniacal and fearful relationship to technology. The novel was written during a summer on Lake Geneva in a year of strange weather. The sky was darkened by the biggest volcanic eruption in recorded history, triggering a worldwide cooling event that made 1816 "the year without a summer." Searching out the ecological undercurrent in the novel's many landscape descriptions Debois Buhl's video creates new poetry from the premonitions of climate anxiety that unconsciously permeate the novel. We have long since been forced to see ourselves as one species among many, and probably not the most viable one at that. Meanwhile, the application of quantum technology in computing is introducing a brand-new type of machine that challenges linear industrial-age concepts of cause and effect. In many ways, this technology behaves more like biological life. The modern duality of human and machine has today dissolved into a broader ecology, where robots no longer look only like humans but also like octopuses and clouds – or birds?

For centuries, art and literature have sought to fathom our complex relationship to technology, particularly by means of science fiction, a genre of imagined worlds, technology and science, where the science always serves the fiction. As the author Ursula K. Le Guin writes, in an essay on science fiction, the other worlds, space travel, technological inventions, societies and creatures of science fiction are images and metaphors of our own life. They are valid symbolic devices for saying something about us that could not otherwise be said, about our existence and the choices we make today. Science fiction can address aspects of life – from interpersonal relationships to relationships between a human and something else, a different being, an idea, a machine or a society.

Many of the questions that contemporary art raises are found in embryonic form in a work of literature that rarely appears in discussions of technology: Hans Christian Andersen's 1843 fairy tale *The Nightingale*. The fairy tale's robot is not in human, but in bird form. At the onset of industrialization in Denmark, in the mid-19th century, Andersen sought to grasp the effects

of the technological changes happening around him by inventing another world. His tale contains no factories. It is set in the court of the Chinese emperor. His palace is made of porcelain, and in the garden a small, brown nightingale sings, enchanting everyone. That is, until a marvelous gift arrives from the emperor of Japan. A mechanical nightingale made of gold, it keeps perfect time. It sparkles and is admired by everyone, until something inside it goes twang and nature calls. The emperor is on his deathbed and only the natural nightingale can save his life by reconnecting him to the spirit of nature. Between the two birds, the nightingale and its mechanical double, a drama is played out expressing Romanticism's dualist worldview. The artificial and the natural are incompatible, opposites. The voice of the machine has no soul.

Andersen's tale addresses several deep questions, ranging from our fascination with invention to the question, what is art? His answer to the latter is found in the elusive, but irreplaceable song of the bird. A force deeply connected to our breath, our spiritual survival. The voice as a source of life and personality, the breath's connection to the soul, and the figure of the doppelgänger are themes that run from *The Nightingale* into contemporary art, flowing through the works in *Soft Robots* and back to Romantic fairy tales and ancient Greek myths. Why does technology spark so much hope and fear in us? This question is sung by every cultural archetype manifesting our relationship to our artificial creations. As Le Guin writes about another Andersen fairy tale, *The Shadow* (1847),

"The great fantasies, myths, and tales are indeed like dreams: they speak *from* the unconscious *to* the unconscious, in the *language* of the unconscious – symbol and archetype. Though they use words, they work the way music does: they short-circuit verbal reasoning and go straight to the thoughts that lie too deep to utter."⁴ Therein lies the power of art.

The Soul of Objects

Curiously, the Asian cultures in which Andersen set his tale, the Japanese and the Chinese, operate with a different logic than Romanticism's dualism. Influencing cultures across Asia, Shintoism has millions of gods and a more horizontal hierarchy, in which both nature and objects have souls. This religious logic extends deep into daily life, where the human relationship to technology is more fluid than in the West. As the Japanese curator Maholo Uschida says, in an interview about technology's place in Japanese daily life, "AI or computer programs, a train, a refrigerator, if you spend lots of time with them, we have a certain kind of sympathy with all technologies. ... The scariest part is if AI can think in the future. But it's the same as lions or dogs or cats. They think, they do whatever they like, but we live and co-exist

⁴ Ursula K. Le Guin: "The Child and the Shadow", in *The Language of the Night: Essays on Writing, Science Fiction, and Fantasy*, Scribner, 2024, p. 48-49.

with them. I think we should keep an open mind about living alongside technology.”⁵ In Japanese art, robots are often represented as creatures with hearts and personalities, somewhere between living and dead. The fusion of human and machine is not necessarily a threat. It can also be in the shape of a visionary ecstasy that seeds the ground for new forms of identity and coexistence.

The artists in *Soft Robots* occupy a range of positions. Their works are not uniformly optimistic or pessimistic. They are investigative. As the artist Ayoung Kim once said, “As technology advances, human life inevitably becomes more intricate. What artists can do with technology is explore the uncertain possibilities it may conceal and deploy it in the most intuitive way. Neither a techno-determinist nor a techno-pessimist, I have always wanted to comment on the impact of technology in our society by using it.”⁶ Poetry, critique and experimentation lead the artists to fundamental themes found in embryonic form in *The Nightingale*: voice and breath, the doppelgänger, fascination with the machine. And perhaps the most basic question that emerges from our meeting with new technology and the fear it can instill: What does it mean to say that something is alive? Today, there is no single accepted scientific definition of the phenomenon of life. But artists are pursuing it. Yunchul Kim’s flying robot creatures hover above us like strange descendants of the golden nightingale. Rhoda Ting and Mikkel Bojesen explore the ability of soft organic robots to arouse our empathy and care. We know they are artificial, but we feel they are alive. Drawing inspiration from the Japanese concept of the floating world and the theory that life first emerged in tiny bubbles of water, A.A. Murakami builds machines emitting giant smoke-filled bubbles. They swim through the air above us like giant fish, burst and are gone in an instant. Holly Herndon and Matt Dryhurst fight on for our right to ownership of our voice and person in a tenacious battle against the all-devouring technosphere. And Ayoung Kim’s Delivery Dancer speeds her motorbike down the twisting streets of a deserted future Seoul, suspended between the falsely comforting cynicism of a machine voice and the seductive dance of her double, “whenever I meet you, time keeps slowing down.” Out of breath, on highways, along power cables, in quantum leaps, searching for a soul.

⁵ Maholo Uchida, quoted in Megan India McGurk, “If you hit your desk, your parent will say – ‘Say sorry! Say sorry to the desk.’ How Japanese Shintoism influences views on AI, with Maholo Uchida, Co-curator of AI: More than Human”, www.liverpoolmuseums.org.uk. Note: The quote has been lightly edited for usage and punctuation.

⁶ Ayoung Kim, in connection with receiving the 2025 LG Guggenheim Award, www.guggenheim.org.