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Caring Futures?

Abstract: How do we understand care, humanity, and vulnerability under new technological regimes? Do concepts of care change with increasing technology use? With these questions in mind, we curated the art exhibition *Caring Futures* at Sølvberget gallery in Stavanger, Norway in autumn 2022. Produced as part of the interdisciplinary research project "Caring Futures: Developing Care Ethics for Technology-Mediated Care Practices" at the University of Stavanger, the exhibition became a creative site for articulating and visualising questions of future care and the entanglement between technological and social aspects of contemporary healthcare regimes, particularly in a Nordic welfare state. In this article, we introduce the exhibition and highlight some of the art projects that specifically grapple with ethical issues in ageing as well as the topic of enhancement, genetics, and bioethics. Our aim is to discuss how technology changes how we relate to our bodies, and our perception or tolerance of what is normal or expected. Care under new technological regimes holds the power of making us want to acquire the desirable, of improvement, but so far, the knowledge of social and individual costs is scarce. Thinking with and through art is a way of generating new knowledges of what is at stake for questions of health, care, and welfare in our times.

Keywords: caring futures, speculative art, embodiment, enhancement, Crispr, bioethics, parasitism.

Caring Futures?

During autumn 2022, the exhibition *Caring Futures* was presented at Sølvberget gallery in Stavanger, Norway. The exhibition was produced as part of the interdisciplinary research project "Caring Futures: Developing Care Ethics for Technology-Mediated Care Practices" at the University of Stavanger. The research project examines what appears to be a contrast between society's need for the use of more and new technology on the one hand, and relational and professional care cultures on the other. With this as our starting point, we circulated an open call for art projects based in Nordic European countries, reiterating some of the overall project questions: How do we understand care, humanity, and vulnerability under new technological regimes? Do concepts of care change with increasing technology use?

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After a careful selection of artworks, we invited eight artists to take part in the exhibition[1]. Interestingly, many of the artworks explored questions of how technology both creates and reshapes bodies and relationships. Particularly, the works of artists Emilia Tikka and Marie Lynn Speckert both ask how technology changes how we relate to our bodies, and, subsequently, what does this do to our perception or tolerance of what is normal, expected, or desirable?

Here, we want to highlight the works of these two artists, not only because they emphasize ethical issues around bioengineering, but also because it feels valuable to highlight how biotechnology and the blending of technology and the organic might shape our perspectives on the future, including the future of care. We understand care as a fundamental and relational aspect of existence, for humans as well as for many non-humans animals. In line with care ethical theory, we are all dependent and vulnerable, and will need to be cared for in various stages of life. However, rather than foregrounding vulnerability and relationality as key human traits, centuries of colonial and hierarchical society-making has instead focused on independency and individuality as core values. The current technological development has provided us with the knowledge and tools that might be very tempting to employ in order to get quick fixes of existing troubles. All though it might provide solutions aligned with the intentions of caring, we could end up manipulating and changing living organisms, their functions and situated ecology in disruptive ways that are unforeseen. Caring for the living, in its broadest sense, also requires a deeper understanding and sensitivity to the vulnerable balance that sustains our lives. Already in the early 1990s, care ethicist Joan Tronto, defined care as:

> a species activity that includes everything that we do to maintain, continue and repair our world so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web.[2]

Through the era of biotechnology, we have found that increasing use of technologies in care are changing from governing life with heavy machinery and technological tools into using technology capable of editing and manipulating living matter. Today, when this complex web of care inevitably consists of technologies, bodies and relations, it becomes apparent that our strategy of using technology to steer and govern the care of life into a desired path might also become detrimental to the living, and, perhaps, yet again a missed opportunity to acknowledge vulnerability and relationality as key aspects of life. As feminist STS-scholar Maria Puig de la Bellacasa argues, it is "vital to engage with the inescapable troubles of interdependent existences"[3], which, in our opinion, is precisely what artists Tikka and Speckert accomplish in their artworks, albeit in different ways.

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[1] Ingvil Hellstrand and Hege Tapio, "Caring Futures online exhibition catalogue," University of Stavanger 2022, www.uis.no/sites/default/files/2022-09/Digital%20katalog%20Caring%20futures.pdf, acc. August 30, 2023.

[2] Joan Tronto, *Moral Boundaries* (London: Routledge, 1993), 80.

[3] Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minnesota: University of Minnesota Press, 2017), 70.

Emilia Tikka: Speculations on gene-editing

In the exhibition, Finnish artist Emilia Tikka presented two artworks; "ÆON" and "EUDAIMONIA". Both artworks are speculative and specifically aiming to look at potential ethical and philosophical queries within the novel practice of genetic modification using a Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) tool. Both art projects were completed in 2018 - a year when the potential risk and use of CRISPR and CRISPR-associated (CAS) proteins accelerated when the Chinese researcher He Jiankui announced that he had edited out the HIV virus in the twins Lulu and Nana[4]. The use of CRISPR/dCAS9 is a controversial and debated topic as it could lead to genetic hereditary changes. Although the artist herself did not make direct use of the technology - she presents some very accurate and well thought out scenarios that may serve as discussions on ethical implications should this technology be applied widely for use. During a two-month residency at the Max Delbrück Center for Molecular Medicine (MDC) the artist got to work closely with the scientists to develop her artistic concept dealing with longevity. This resulted in the speculative work "ÆON", where we, through a series of photos, meet a married, heterosexual couple, where one has chosen to use rejuvenation technology, while the other ages as usual[5].

In ÆON, the series of photos introduces us to a moment, 60 years after the male partner decided to prolong his life with rejuvenating gene therapy. We see a couple with apparently a huge age-gap, caused by the effects of the male taking gene therapy – he becomes forever young. While his female partner, who chose to age naturally has now reached the last part of her life, gray-haired, wrinkled, aged. As spectators we are left to think about how this decision is affecting their romantic relationship and their attitude towards life. Even when the man is embracing the woman's wrinkled face, he does so wearing a mask and plastic gloves – as the pictures were made two years before the Covid pandemic this leaves us to interpret the mask and gloves as a way to distance oneself from nature. Further, the pictures also give us a telltale of how each of the two approach life with a different mindset. For instance, over a dinner setting he has a plate with some pills and a glass of water, whereas she is set to enjoy a juicy steak and a glass of wine. Here, asceticism meets the polarity of joie de vivre, or 'enjoy it while you can' attitude. Interestingly, it is technological enhancement that is presented as a form of asceticism, in line with transhumanist perspectives: a liberation from biological realities and embodiment[6][7][8].

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[4] Henry T. Greely, "CRISPR'd babies: human germline genome editing in the 'He Jiankui affair'," *Journal of Law and the Biosciences* 13, 6 (August 2019):111–183.

[5] Emilia Tikka, "ÆON", artist website. www.emiliatikka.com/new-page-1, acc. August 30, 2023.

[6] Nick Bostrom, "A History of Transhumanist Thought," *Journal of Evolution and Technology* 14, 1 (April 2005): 1–30.

[7] Andrew Pickering, "Brains, Selves, and Spirituality in the History of Cybernetics," in *H+/-:Transhumanism and Its Critics*, ed. by Gregory R. Hansell and William Grassie (Philadelphia: Metanexus Institute, 2010): 189–204.

[8] Max More and Natasha Vita-More, eds., *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future* (Chichester: Wiley-Blackwell, 2013).

Through the series of photos, it is revealed how even their spiritual inclinations differ. The woman is connecting with natural elements, such as stone and wood, through something that looks like an ancient ritual. The man, however, is apparently worshipping the high-tech inhaler that is inducing the gene therapy keeping him forever young and tending to his perfectly preserved butterflies. With this, the work "ÆON" is thus not only problematizing the technological possibilities for gene editing, improvement and life extension, but also how the view of what constitutes quality of life and relations, and how the use of technology – and specific relationships to it – that concretely shapes our lives. It tells of how we relate to specific technology and how this shapes our core values, our identities, and everyday life. As such the work thematizes a tension between the structuring power of technology, and the (transhumanist) dream of the perfect human being, where questions of choice and consequences are clear and seemingly neutral on the one hand, and situated, messy, lived embodiment on the other.

In this way, Tikka's work highlights human agency and vulnerability in the face of new technologies. In some ways we are already accustomed to prolonging our life expectancy using technology - through the way we have been able to preserve food, or measure and improve its nutritional value, to how we improved our health by receiving vaccines, medicines, and operative interventions. By the use of CRISPR/dCAS9 we are at the forefront of gaining even more control over living organisms by having the opportunity of targeting precise editing and changing of nearly any gene. The technology provides the possibility of making hereditary genetic changes that may produce unforeseen ripple effects beyond the organism itself. One example of this is the ongoing debate of using genetic modification on mosquitoes to control Malaria and other mosquito carried diseases, to the extent of eradicating the further growth of mosquitoes, possibly leading to ecological disturbances. Through portraying two very different life choices, Tikka also problematizes how the use of technology impacts not only on our bodies, but also our identities and relationships. Even though technology has very much been an instigator for our visions, where we slowly try to reach the ultimate goal of immortality with its aid, Tikka articulates the ongoing ethical and political tensions surrounding biotechnology. Rather than suggesting solutions, "ÆON" invites us to "stay with the trouble", as Donna Haraway[9] puts it.

Tikka's second artwork, "EUDAIMONIA", dives even deeper into possible implications of genetic manipulation[10]. This video work introduces three personal stories of individual struggles to fit in and to handle social and emotional struggles by adjusting their personality traits. The main characters make use of speculative gene-modifying technology in order to fix what they see as unbearable situations in their everyday lives and professions. The video work leads us into a future scenario where the human psyche and character has become a matter of molecular biology and can be altered

[9] Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chtulucene* (Durham and London: Duke University Press, 2016).

[10] Emilia Tikka, "EUDAIMONIA," artist website. www.emiliatikka.com/eudaimonia-short-film, acc. August 30, 2023.

with personalized genome editing devices. Amongst the three individuals we meet a doctor and her difficulties of dealing with the sorrows and losses of critically ill patients and how it affects their families. The doctor finds herself struggling and wanting to shield herself from these emotional reactions, so she chooses to edit her MAO gene, forming a variant called 'allele A', nearly immunizing her to empathy. As a spectator we are left to contemplate how this choice will affect her profession as a doctor, i.e., how an individual choice will potentially affect many other people.

Another character we meet in the video work is Aaron, who is struggling with his emotional attachment to his mother. He chooses to edit the central arginine vasopressin receptor 1A (AVPR1A) that modulates a wide range of behaviors, including stress management and territorial aggression, as well as social bonding and recognition. Apparently, this decision will affect his other social bonds as well. We also meet Daniel, who decides to modify his DRD4 gene, known to regulate traits such as motivation and thrill seeking, and is also associated with attention deficit hyperactivity disorder (ADHD) and addictive and risky behavior. Daniel goes from being timid, indecisive, and insecure to become a completely new version of himself emphasizing impulsiveness and adventurous behavior.

Through the work, Tikka problematises how technology might give us a quick route to happiness as opposed to the classical Aristotelian method where happiness should be earned by a lifelong process of self-development towards virtues. Geared by the invention of psychopharmacology in the 1950s we seem to have gained the appetite for quick fixes of troubles of the mind or emotions, as is also made visible in transhumanist philosophy.[11] Emilia Tikka's disturbing scenarios of the possible consequences of allowing technologically advanced gene editing give us an immediate understanding of the ethical dilemmas, as well as the bodily and relational impact of such technologies, even without in-depth knowledge of the science behind them. Both artworks present philosophical and ethical questions about what a human is or could be through storytelling and speculative use of advanced genetic editing, as "ÆON" can be said to explore the Yamanaka Factors[12] and "EUDAIMONIA" the CRISPR/cas 9[13] gene editing method. Tikka has been working closely with scientists in order to figure out what specific genetic change would comply with the artistic concept for the artworks.

It might be worth remembering the existing moratorium on the use of gene editing, especially of human genelines, which seems necessary to refrain from making irreversible changes or causing unwanted butterfly effects. Presently, when it comes to employing technology, whether it is CRISPR/Cas 9 or DeepMind, we should proceed with caution. The applications of AI might not be irreversible – but it might become a hard task to reprogram or unlearn deeply ingrained bias or detach from technological co-dependency. Having access to tools that could let us edit out unwanted traits might

[11] Bostrom, "A History of Transhumanist Thought"; More and Vita-More, *The Transhumanist Reader.*

[12] Kazutoshi Takahashi, Koji Tanabe. Mari Ohnuki, et al., "Induction of Pluripotent Stem Cells from Adult Human Fibroblasts by Defined Factors," *Cell* 131 (November 2007): 861–872.

[13] Crispr/Cas9, https://crisprtx.com/gene-editing/crispr-cas9, acc. August 30, 2023.

seem like an easy fix to eliminate and perfect, but it would also pose great responsibility as genetic changes would become hereditary. The idea of 'simple' genetic editing is also problematic because it perpetuates the notion of universal solutions for all of mankind(!), without regard for different life experiences, bodies, and choices. This is a critique raised by feminist and posthumanist scholars, who argue that the very notion of a technological quick-fix disregards embodied differences and possibilities,[14] as well as relational aspects of life. It is, perhaps, no coincidence, that, in "ÆON", it is the woman who chooses to live out her life without enhancements – in this she embodies both the historical and normative legacy of women bound to their biology, but also the power of choice and self-care. In "EUDAMONIA", the focus on the relational consequences of individual choices also point to this legacy.

The codependency between humans with technology is also present in the artistic visions of Marie Lynn Speckert and her alien-like wearables in the artwork "Scalptomorpha".

Marie Lynn Speckert: Organic Technologies

In her artwork, Speckert puts focus on wearable technological structures. A mix of both organic and spiky shapes are presented as potential wearable medical technology, but interestingly inspired by natural phenomena like parasitism – a relationship between two different organisms. Through both sculptures and photographs, the artwork "Scalptomorpha"[15] depicts what could be developed as a device to create contact with the wearer's body and to find a system for communication in the form of sensory stimulus. Parasitic behavior can be found within all living organisms, from fungi to plants, bacterias, animals, and insects. Although we might frown on the notion of a parasite – as it is something that is feeding on or using the resources of its host – Speckert nevertheless expands the term to also include parasites that live in symbiosis with its host. These include Proto-Cooperation (where two species are benefitting from each other), Mutualism (prolonged relationship that is mutual but not essential for life) and Eusymbiosis (a vital symbiosis where one cannot exist without the other). As such, these artworks quite literally foregrounds relationality and codependency as a way of life.

By also bringing in Endosymbiosis (like our gut bacteria) and Commensalism (where an organism lives in its host but does not do any harm) the concept seems to present more friendly and familiar codependent systems that might be easier to adapt

[14] Katherine N. Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* (Chicago and London: University of Chicago Press, 1999); Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013); Joanna Zylinska, *The End of Man: A Feminist Counterapocalypse* (Minneapolis: Minnesota University Press, 2018); Anne-Jorunn Berg, Agnes Bols, and Ingvil Hellstrand, "Transhumanistiske blindspor, posthumanistiske muligheter [transhumanist blindspots, posthumanist possibilities]," *Tidsskrift for kjønnsforskning* 44, 4 (December 2020): 285–298.

[15] Marie Lynn Speckert, "SCALPTOMORPHA," artist website, acc. https://www.marielynnspeckert.de/SCALPTOMORPHA/, acc. August 30, 2023.

to. The wearables of Speckert named "Scalptomorpha" have found their inspiration in Parabiosis – wherein two organisms from different species mutually profit from their interrelation. She presents amorphous shapes that seem to fit or able to latch onto certain parts of the human body. She is further imagining these wearable shapes to have functions like picking up on the heartbeat of the wearer, registering brainwaves, blood pressure or sweat/skin conductance. She also assigns these wearables with feedback options in the form of vibrations, sounds, or temperature shifts.

Unlike extractivist and isolating technologies, Speckert's speculative tools in "Scalptomorpha" are both organically formed and designed to create a two-way exchange with the host body. The parasitic takes on new meanings here by virtue of being presented as a symbiosis, rather than an unwanted hitchhiker in the human body. This represents a welcome shift in perspective from the technological quick-fix or the transhumanist enhancement and add-on philosophy, as the foregrounding of biological and organic processes are reclaimed as an equally useful form of technology. As such, Speckert reminds us of the complex and entangled relationships involved in all interaction, collaboration, and exchange.[16] In many ways we already have electronic parabiosis attached to our bodies, besides cochlear implants and insulin pumps, we could look at wearable smart watches and earplugs as body extensions connected with our smartphones. We respond physically to vibrations and sounds as we know this is linked to messages from a loved one, a nagging call from your boss, or receiving some new likes on social media posts. It sends surges that release our biochemicals and creates anything from stress related responses to feelings of happiness. Speckert's amorphous wearables could represent the seed of a futuristic haptic social communication tool – where we might exchange expanded ways of communication through vibration, temperature, or other sensory experiences. Alternatively, it might also be leading towards development of some novel medical use, where the wearables could function as a tool for measurements, diagnostics, or even administration of medicine. The envisioned two-way communication system also gives hope for an outlook on the future, and future care, that is founded in mutuality and collaborative processes rather than instrumental fixes. Among other things this could include new technological organisms that could be latching on to our bodies, becoming part of our metabolic structure. In that sense, Speckert is introducing the concept of technological parabiosis as a new added layer of techno-organisms that could co-exist with organic life.

(Re-)Imagining Future Care

If we imagine the medical uses and futures that "EUDAIMONIA" and "Scalptomorpha" present, we might find scenarios where all kinds of unwanted behavior, negative or tiring emotions, have been eroded. And our ability to sense vague natural vibrations has been jumbled as we have grown accustomed to haptic wearables that have hijacked or altered our sensitivity. That said, both Tikka and Speckert present

[16] Banu Subramaniam, *Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity* (Urbana, Chicago, and Springfield: University of Illinois Press, 2014).

technologies that have drawn their inspiration from naturally occurring phenomena, pointing to the rather unfruitful separation between technology and the organic, machines and humans.[17] The CRISPR/Cas9 technology that Tikka is referring to is based on a simple mechanism, like our immune system, and also naturally found in microbes such as bacteria. In this, she situates technology and its uses simultaneously in ancient myths of immortality and total control, as well as in societal norms for acceptable behavior. In other words: it is part of us, and how we organize society. The challenge is to organize it for the future, bearing in mind both new technological possibilities and the ethical responsibility to learn from our past.[18] Speckert extrapolates several natural co-hosting phenomena that we can observe from animal life, plants, bacteria, and even inside and sometimes on our own bodies, referring to our dependency of "others" – be they living or technological entities/instruments. Here, Speckert articulates what we might call an ecological approach to technology as an ethical and responsible way forward in terms of bioethics and bioengineering.

Through a philosophical lens, the way we transfer this knowledge or observations over to our technological tools is contributing to a translation, synthesis, and in some ways a commodifying of the nature that we are part of. By having the tools and technology to control and master these natural phenomena, living organisms, and to an extent the outcome of life, might shift what nature's life cycles have adjusted through thousands of generations. The artworks' insistence that our technologies are part of the complex web of relations, emotions, and responsibilities provides a certain hope that technology is something that we can influence, create, or design with the help of familiar tools, or with inspiration from nature and the organic. At the same time, both Tikka's and Speckert's foregrounding of the relational aspects of both technology use and care, allows for a (re)imagining of questions of vulnerability and dependency that might be necessary to create a sustainable future. Hopefully, the underlying messages also point out the seductive economic and efficiency powers that lie in the potentials of uncritical use of technological techniques and tools. The ethical and philosophical questions presented by the artworks in this article emphasize the importance of a careful and deliberate conscious use of the technologies we develop. Although it might be tempting to pursue a path of using our technological tools for editing living organisms or enhancing by the use of technology, both artworks raise questions of what is at stake if we follow a path where we end up losing connection with the sensitivity and vulnerability needed to cultivate our future caring relations.

[17] Donna J. Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (London: Routledge, 1991).

[18] Anna Tsing, Heather Swanson, Elaine Gan and Nils Bubandt, *Arts of Living on a Damaged Planet*. Minneapolis: University of Minnesota Press, 2017).

Fig. 1. *Eudaimonia*, personal genome-editing device, by the artist Emilia Tikka. Photo by Zuzanna Kaluzna.

Fig. 2. *Æon*, detail from the photographic installation, by the artist Emilia Tikka.

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