

**Bio-Art: An Unlikely Symbiosis of Science and Art in the Case of Maja Smrekar's *K-9\_topology***

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**Abstract**

Bio-art, fostering connections between seemingly distant areas of science and art, has in recent years opened a myriad of new possibilities for artists. In *ARTE\_mis* (2017), concluding part of her three-year-long artistic investigation *K-9\_topology* (2014–2017), Slovenian transdisciplinary artist Maja Smrekar used her emptied reproductive cell as a host for a somatic cell of her dog Ava. The hybrid cell was preserved in liquid nitrogen to serve as a symbol of blurring the borders between human and nonhuman while questioning the Anthropocene. The purpose of this critical analysis is to unfold the multiple layers of the convivial relationship between art and science in the context of Smrekar's *K-9\_topology*, and investigate the ways in which their correlation emphasizes the activist component of the artwork. I argue that the juxtaposition of art and science fosters a unique type of socially engaged artwork, in which the medium is essential for conveying the activist message.

**Bio note**

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## **Introduction**

The fact that the conceptual space that the notion of human occupies today no longer encompasses solely an organic representation of nature, but a combination of organic and non-organic matter, has been an attractive topic for researchers for decades now. As an array of individual choices that defines us is leaving a digital imprint behind our every internet search, the essence of who we are can be traced all over the technological world. While it seems that the human has never been so far from achieving so much in so many diverse fields, humanity's very existence as well as the ecosystems we largely dominate are endangered by tangible threats brought by our fast tracking progress. In time when scientists like Michael Levin are already investigating possibilities of regrowing missing limbs through the use of bioelectricity (Hutson 2021) and smartphones and tablets have become almost literal extensions of our bodies, organic matter presents a meeting point of technologically affected realities of all living beings, nonhuman and human.

This paper takes as its starting point the practice of tissue growing, essential for bio-art since its emergence in the 1990s, while investigating the distinction between incorporating the use of human or nonhuman element in the case study of Maja Smrekar's recent *K-9\_topology* (2014–2017). While bio-art is often aimed at using technological advancement and scientific processes to highlight the normalisation of nonhuman objectification and appropriation within the consumerist culture, it commonly resorts to animals themselves in order to illustrate a point. By juxtaposing the human and nonhuman element throughout the artistic investigation, *K-9\_topology* unveils the core of this contradictory connection.

### **Between cyborgs and posthumans: dismantling the anthropocentric discourse**

Situating the posthuman between the Fourth Industrial Revolution, defined by the latest technological advancements in artificial intelligence, robotics, and nanotechnology, and the Sixth Extinction, accountable for the advanced loss of species, Rosi Braidotti in her recent *Posthuman Knowledge* (2019) carves out the conditions leading to the current need to redefine human with a prefix. The book is driven by the idea that the juxtaposition of declining biodiversity on the one hand and the technological advancement on the other demand an ontological shift from the androcentric focus towards new ways of framing what all the notion of a human encompasses. As both conditions are a direct consequence of humanity's actions, the posthuman must continuously navigate the balance between them while finding new ways

of existing in both parallel and at the same time overlapping worlds. Building on her previous work on the topic, most importantly in her seminal work *The Posthuman* (2013), in her proposition of “A Theoretical Framework for the Critical Posthumanities”, Braidotti asserts that the posthuman condition implies the need for a contextual reshaping of the theoretical tools. The new theoretical framework of ‘critical posthumanities’ thus marks the era of post-anthropocentrism and posthumanism, defined by the need for deconstruction of both the universalist concept of ‘Man’ as well as the notion of human exceptionalism prompted by the anthropocentric outlook (2019, 31-32).

Braidotti’s vast opus of work on the posthuman comes as one of the core contributions to the rich history of attempts to position human within the fast advancing technological world, gaining increasing attention since the 1980s already. In her landmark work *Simians, Cyborgs, and Women* (1991), Donna J. Haraway traces the beginning of the long-developing change in scientific perspective to the end of the First World War. In the decades that followed, “biology has been transformed from a science centred on the organism, understood in functionalist terms, to a science studying automated technological devices, understood in terms of cybernetic systems” (45). Subsequently, in 1985 Haraway proposed the concept of a cyborg as “a hybrid of machine and organism” (1991, 149), “a creature in a post-gender world” (150).

Serving as a ground of mediation between the organic and non-organic, human and nonhuman, the cyborg created a new conceptual space dedicated to trespassing the existing boundaries. The novelty of *A Cyborg Manifesto* laid in the fact that it advocated for engagement with the rapidly advancing technological progress instead of rejecting its omnipresence. Five years after its first publication, Haraway pointed towards the developing ecofeminist movement as a space dedicated to advancement of “some very savvy new relations to science and technology developing at the level of popular practice” (1990, 19). In the 1990s, ecofeminism was an emerging movement which gained a concise framing with the publication of Ariel Salleh’s *Ecofeminism as Politics* (1997). The book underlined the connections between seemingly distant discourses, unifying them in the context of the ‘ecofeminist’ framework. Adopting the combination of a feminist reading of Marx with postcolonial discourse, it aimed to expose the multi-layered intersection between gender inequality and the ecological dimension. The work was pioneer in tracing how the two realities are intrinsically connected, building on the core notion of ‘embodied materialism’, highlighting the implications of gender-based roles within the capitalist society, rooted in disproportionate equating of women with nature. Thus, Salleh established a critique of the androgenic capitalist system, in which Man positions himself above Nature and Woman (2017). While establishing theoretical grounds for

the conceptual development of ‘embodied materialism’, Salleh refers to the old idea that “men are culture, women are nature”, serving as a “rationale for economic externalisation” (2005, 12).

Following this train of thought, it is no surprise that working towards a disassociation of women from nature has long been intrinsic part of the mainstream feminist movement. As such, it has consequently contributed to negligence of the issue rather than proactive involvement and striving towards its possible resolution (4-14, as cited by Alaimo 2010, 5). While feminist cultural studies have embraced Donna Haraway’s concept of a cyborg (1985) as a construct disintegrating the division between humans and technology, its other side, advocating for embracing the connection between human and nature, has been often ignored (Alaimo 2010, 6-7).

### **Entering the tissue: the convergence of human and nonhuman sphere in bio-art**

With twentieth century being distinctly marked by an array of -isms and disparate movements seeking to disintegrate and challenge the presupposed idea of what art encompasses, bio-art presents the latest subject in the queue of new artistic propositions emerging at the end of millennium. Contradicting the idea of artwork as a passive object, bio-art has been since its beginning challenging the boundaries of existing social and scientific norms.

As discussed in the previous section, the combination of the current environmental changes and technological advancements has caused a significant push towards reconsideration of anthropocentric thought. As it is itself expanded between the scientific and natural world, bio-art serves as a reflection of the duality of the posthuman condition as highlighted by Braidotti in her various texts. But since it presents a still relatively unknown and emerging position, continuously exploring its boundaries, various researchers are drawing its limits differently. Building on Robert Mitchell’s definition by the use of medium (2010), Legassie, while stating that bio-art takes “living matter as a starting point for material production” (2018, 73), expands the conceptual space that the notion covers by emphasising that it is not defined by medium only, but also by theme (73).

Examining the field of bio-art, the relationship between human and nonhuman seems to be evidently its core element. Since its origin, bio-art has been based on working with living tissue, particularly an animal one. The roots of bio-art can be traced to 1996 when members of the Tissue Culture & Art Project (TC&A) collective “Oron Catts and Ionat Zurr coined the

term Semi-Livings to describe the living tissue constructs that are grown/constructed out of tissues taken from complex organisms and maintained alive with the aid of technological intervention” (Zurr 2008, 5). Since then, TC&A’s vast body of work has been dedicated to highlighting complex ethical issues on a societal level through creating uncomfortable situations in the form of installation and performance engaging with organic matter. Its *Disembodied cuisine* (2001–2003) aimed to explore the practical dimension of lab-grown meat as a substitute for traditional way of producing food products containing meat. The project started during the TC&A’s residency at Harvard Medical School, with the objective to grow animal tissue in a lab to create meat products that could be used for culinary purposes without any animals being harmed in the process. Few years later, the collective presented the concept as part of the exhibition titled *L’art biotech* (2003), during which “tissue-culture steaks were grown from frog tissue—a play on fancy French cuisine and the notion of frog’s legs as a delicacy—and displayed in a transformed gallery that was both an art space and a science lab” (Legassie 2018, 78).

The work of the TC&A collective has resulted not only in growing artistic production but a rich body of academic work as well. By the time Zurr’s doctoral thesis titled “Growing Semi-Living Art”, examining TC&A’s own artistic production, has been completed, the collective’s work became seminal for the emerging discipline of bio-art. Following Zurr’s writing, challenging the anthropocentric humanist perception seems to be key to the development of bio-art since its beginning. According to her, contemporary times as those “of rapid developments in the life sciences and their applied technologies, when the humanist view of human separation and domination over nature is under great challenge” (2008, 5).

Working with living tissues and organisms transforms artwork from a material non-living object to a living subject, thus introducing a new key dimension into an exhibition space. A relationship between an artist and an artwork, as well as between a spectator and an artwork, no longer consists of a correlation between a living subject and a non-living object. Consequently, the liveliness of bio-art has been recognised as its intrinsic element, established precisely by “the presence of human and nonhuman bodies” (Legassie 2018, 73). While the redefinition of artist-artwork and spectator-artwork relationship holds a potential promise of a myriad of new possibilities of interactions, it also opens new questions of domination of a living subject.

Hybridity seems to be the key concept linking Braidotti’s theory of posthuman and Haraway’s cyborgs to bio-art. Building on the work of Gilles Deleuze and Félix Guattari, Rosi Braidotti emphasises the changing nature of contemporary human-nonhuman relationship,

stating “that in turning into humanoid hybrids, we are becoming animal” (Braidotti 2009, 526). While the feminist component is not a prerequisite for the artistic processes leading to the development of bio-art, there is an undeniable link between bio-art, feminist understanding of the posthuman and cyborg as developed by Braidotti and Haraway, and Salleh’s ecofeminist approach. At the core of all four frameworks lies the idea of blurring the boundaries between human and nonhuman in order to constructively engage with the current technological era. Closely connected with this continuous navigation of the liminal space lies the necessity for redefinition of where the human ends, what conceptual space it occupies in relationship to its environment, and how do these changing notions influence gender roles and embedded codes.

Referring to the work of Mierle Laderman Ukeles, Legassie draws a visible parallel between the work of bio-artists and feminism by leaning on the notion of care. The concepts present in Ukeles’ work can be traced to the end of 1960s when she wrote *The Maintenance Art Manifesto* (1969), highlighting the gendered nature of basic chores, domestic labour, service and maintenance mundane daily tasks. As Legassie states, bio-artists are engaging with “care and maintenance activities, albeit in lab-cum-exhibition spaces, to promote feminist engagements with networked human/nonhuman ecologies” (2018, 82).

Another key aspect underlining a different side of bio-art’s dedication to challenging the existing social norms revolves around its relation to the spectator. Claire Bishop in her “Antagonism and Relational Aesthetics” (2004) famously critiqued the concept of participatory art as developed by Nicolas Bourriaud in his *Relational Aesthetics* (1998), emphasising the fact that the examples presented were often designed in a manner that promoted comfortable networking spaces for already like-minded people and were as such unsuccessful in fulfilling art’s critical function. Building on the concept of antagonism as understood by Ernesto Laclau and Chantal Mouffe (1985), Bishop was not convinced by the antagonistic quality of participatory artists’ work examined by Bourriaud. Presenting an alternative by using examples of Santiago Sierra’s work with Chechnyan refugees and illegal immigrants, such as *Workers Who Cannot Be Paid, Remunerated to Remain Inside Cardboard Boxes* (2000), and *Persons Paid to Have Their Hair Dyed Blond* (2001), as well as Thomas Hirschhorn’s *Bataille Monument* (2002), forcing *Documenta XI*’s visitors outside their comfort zone by locating the artwork in the underprivileged and less accessible suburb of Kassel, Bishop underlines the fact that these works sparked critical engagement and public discussion by evoking discomfort in visitors rather than comfort (2004). Nonetheless, if Bourriaud introduced the concept of participatory art by describing some of the works which resulted in comfortable shared experiences, confirming values and ideas that were already accepted by their audience, bio-art

takes a completely opposite approach, closer to the one Bishop argues for. By using a non-traditional medium that makes spectators uncomfortable rather than comfortable, bio-artists challenge the existing social norms and prompt visitors to engage with complex ethical questions.

### **A quest for blurring the barriers: a case study of *K-9\_topology***

*K-9\_topology* is transdisciplinary artist Maja Smrekar's recent artistic investigation, spanning over the course of three years (2014–2017). Consisting of four interrelated parts, conducted in various sites and with different durations, it has crossed various national borders and invisible limitations of what art can entail. Aimed at exploring and blurring the division between human and animal in order to highlight the dangers of anthropocentric present and possibilities for more conscious ways of preserving our world in future, it embraces the highest extent possible of symbiosis between a human and a canine. As such, the investigation sets itself in a long-existing tradition of dog depictions being “used to figure cultural change and negotiate the borderlands in-between” (Williams 2007, 93).

*K-9\_topology*<sup>1</sup> was initiated with a multi-sensorial spatial installation *Ecce Canis* (2014). During the process of setting up the installation, serotonin was extracted from the blood samples of Smrekar and her dog Byron, and transformed into a mutual scent within the context of an exhibition in Kapelica Gallery in Ljubljana. The exhibition space was covered in fur, aimed at provoking illusion of stepping through a pre-historic cave space in which relationship between human, wolf, and consequently dog first formed and evolved. While the species were first adopting to each other, starting to cohabitate and cooperate, relying on one another to provide in areas of their own capabilities, unique relationship of domestication was shaped. Following this process, Smrekar highlights the fact that humans' ability to smell has eventually gradually decreased in comparison to dogs (Smrekar 2014a). While the factor of smell has throughout this process become something that separates both species, symbolically unifying human and canine smell within the context of the exhibition emphasises the convivial aspect of their relationship.

While the first part of the *K-9\_topology* alludes to prehistoric times, the conceptual roots of the second part of the *K-9\_topology* can be traced back to the 1970s and 1980s. Titled *I Hunt Nature And Culture Hunts Me* (2014), it was conducted during the residency at the

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<sup>1</sup> For visual reference, visit “Maja Smrekar”: <https://www.majasmrekar.org>. Accessed June 5, 2021.

Jacana Wildlife Studios in France. The project resulted in a final performance at Rencontres Bandits-Mages, featuring the artist stripped off of most of her clothes, laying on the ground, while wolves were sniffing and licking her exposed skin. Several obvious parallels can be made between *I Hunt Nature And Culture Hunts Me* and Barbara Kruger's *We Won't Play Nature to Your Culture* (1983); the latter by depicting "a woman lying upside down with leaves over her eyes, overlaid with the caption, "We Won't Play Nature to Your Culture", illustrates the postmodern feminist rejection of the dualisms that align "woman" with mute, passive, nature" (Alaimo 2018, 45). While both artworks on the one hand feature the alleged opposition between Nature and Culture and symbolically highlight women's equation with the 'passive' Nature on the other, there are two important differences that show the conceptual distinction separating them. Firstly, Smrekar takes a step further than Kruger by emphasising the active element; if *We Won't Play Nature to Your Culture* is based on the refusal of abiding by the already established social practices, *I Hunt Nature And Culture Hunts Me* is representing a continuous act of 'hunting'. Secondly, while Kruger refers to herself as part of the movement, highlighted by the use of personal pronoun "We" in the title, Smrekar's position is more focused on the individual and personal experience, emphasised by the use of "I" in the title.

Further references can be found in the "Performance text" (Smrekar 2014b) accompanying the artwork itself. In 1975, Joseph Beuys, a fierce advocate of the essentiality of individual (artist)'s commitment to shaping the social structure, drew *The Woman with the Dog* (1975). Almost four decades later, Smrekar referenced Beuys and Oleg Kulik, another renowned performance artist active in the second half of the twentieth century, in the text accompanying the second part of the *K-9\_topology* (2014b). While Kulik started his artistic career as a sculptor of enormous animal statues, he soon adopted his signature dog persona in 1994. With the self-explanatory title *Mad Dog*, the performance featured Kulik stripped out of his clothes and on a heavy chain, acting as an angry dog, jumping on a car, trying to pull the chain while barking on visitors of the Marat Guelman Gallery in Moscow. Both Beuys as well as Kulik have been known for their attempts to explore the relationship between human and animal, particularly canine. Smrekar's artistic practice draws allusion to one of Beuys' most renowned as well as controversial works *Coyote: I Like America and America likes Me* (1974), during which he spent three days sharing a closed gallery space with a coyote, establishing connections and trust. Like Smrekar's, Beuys' work is built on a series of juxtapositions: "coyote/human, East/West, old world/new world, materialist/idealist, etc." (Williams 2007, 100).

Kulik, on the other hand, is most known for examining animal behaviour from the opposite side, by adopting the alter ego identity of a canine. In his performance *I Bite America and America Bites Me* (1997), Kulik created an *hommage* to Beuys' work. Staying in a gallery cage for two weeks while sinking in his dog persona, he was drinking water from a bowl and snarling at the gallery visitors. Smrekar's *I Hunt Nature And Culture Hunts Me* positions itself as a conceptual continuation of *Coyote: I Like America and America likes Me* and subsequent *I Bite America and America Bites Me*. Coyote, a species of canine native to North America, is a representative of the untamed, the wild and unpredictable. While Beuys' performance was alluding to the origin of modern-day America, founded at the expense of Native Americans (Williams 2007, 99), on a purely formal level the performance consisted of an attempt to create a connection with an animal that is not prone to domestication. In a similar manner, Smrekar further extended the limit to which humans on a societal level connect with the canine world. During the preparatory process, she, with the help of ethologists on site, established a connection with various Czechoslovakian Wolfdogs, which enabled her to lie still on the stage during the performance (2014b). Kulik's work, on the other hand, emerged from an important distinction in perspective. Like Beuys and Smrekar's, his performances present nuanced dissections of contemporary society offered in a primal sensory form. However, while both artists investigate possibilities of a symbiotic relationship with a canine, Kulik in his early career in the 1990s adopted a dog persona himself.

Nevertheless, his approach soon expanded. In 1997, he created a photographic series *Family of the future*, featuring moments testifying of building a bond between him and a canine. A parallel can be drawn between the series and Smrekar's durational performance titled *Hybrid Family* (2016), which featured artist and a puppy named Ada. During a three-month-long seclusion with her dogs, the artist has undergone a regular preparatory routine of breast-pumping and adjusted diet, which enabled her to stage a symbolic act of breastfeeding during a public performance with Ada. In the text accompanying the artwork, Smrekar made a reference to Haraway's examination of "decolonial reproductive freedom in a dangerously troubled multispecies world" (Haraway 2016, 6, as cited in Smrekar 2016). In 2019, the artist continued the project with her *extended Hybrid Family* project, in which Smrekar and Ada have jointly took care of two puppies. The previously already discussed aspect of care in bio-art as highlighted by Legassie (2018, 82), here becomes vital in examining the artwork.

*ARTE\_mis* (2017), the fourth and final part of the *K-9\_topology*, was conducted in BioTehna, a laboratory dedicated to artistic research of living systems. In the process, the artist's reproductive cell was first emptied by using UVC light, and later on filled with a

somatic cell, isolated from Ada's saliva. The cell was later preserved frozen in liquid nitrogen, serving as a symbol of blurring the border between the human and nonhuman. In interview with Régine Debatty, Smrekar later elaborated on the feminist element in her work, particularly visible in the *Hybrid Family* as well as *ARTE\_mis* which emphasise questioning of the traditional gender roles (2018). Therefore, while the *Hybrid Family* and *extended Hybrid Family* on the one hand continue Kulik's legacy of exploring the connection between the human and nonhuman, their intrinsic feminist element on the other hand expands the initial conceptual space opened by Kulik's *Family of the future*.

To better understand the theoretical and practical implications of *ARTE\_mis*, we now turn to comparison with the work of previously already discussed TC&A. Despite the controversial and shocking nature of Catts and Zurr's work, the pioneers of bio-art faced the most real barriers for their artistic practice when trying to use human tissue in the process. When they intended to collaborate with performance artist Stelarc for an installation *Extra Ear 1/4 Scale* (2003), the National gallery of Victoria approximately two weeks before the opening cancelled the installation. This was due to the fact that the artists were planning to use human tissue, despite the already previously obtained ethical, health, and safety approvals from the University of Western Australia. The gallery later approved the installation only under the condition that the artists substitute their use of the human tissue for an animal one (Catts and Zurr, as cited in Senior 2014, 183). While working with animal tissue in scientific and by extension, bio-art processes, is certainly seen as controversial by many, the resistance towards working with human tissue is even stronger. Furthermore, Senior points out: "While questions of the ethics of bioart (or the ethics of artists who create it) are undoubtedly significant, the part that the spectator plays in the construction of the ethical relation is equally important" (2014, 204). While isolating a single cell and preserving it in liquid nitrogen may at first not seem nearly as ground-breaking as growing a human ear, by trying to equalise the relationship of human and nonhuman within the artistic process, dedicated to disintegration of the idea that using animal tissue is less controversial than using a voluntarily obtained human one, *ARTE\_mis* symbolically points towards new ways of human-nonhuman relationship.

## Conclusion

From using organic matter as a starting point to appropriating basic scientific processes within the laboratory context, Maja Smrekar's *K-9\_topology* builds on the essential characteristics of bio-art. In comparison to some seminal works of bio-art such as TC&A's *Disembodied cuisine* (2001-2003) or *Extra Ear ¼ Scale* (2003), Smrekar's work at first seems significantly less radical. However, in line with Rosi Braidotti and Donna Haraway's propositions of blurring the boundaries between human and nonhuman in order to engage with our current technologically affected reality while opening new possibilities of reshaping gender roles within society, the novel quality of the *K-9\_topology* is embodied in dedication to joining the human and nonhuman component within all four parts of the artistic investigation.

While bio-art often relies on the use of nonhuman tissue in the process, *K-9\_topology* aims to symbolically equalise the contribution of the artist and the animal. In the context of continuous navigation of the balance between the human and nonhuman, the medium therefore becomes key to unfolding the message. An artwork created on the basis of a nonhuman element presents a different material position as the one that takes a step forward by featuring both human as well as nonhuman component. By subjugating herself to circumstances that emphasise the convivial element of the connection between the human and nonhuman, Smrekar symbolically proposes new possibilities of rethinking and reshaping that same relationship in the future. Situating herself next to nonhuman as an equal element within the artwork, the artist on the one hand highlights questioning of the existing gender norms as well as our own relationship with the nonhuman.

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