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Hybrids, Chimeras, Aberrant Nuptials:
New Modes of Cohabitation in Bioart

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ABSTRACT
The essay examines different cases of bioart, which, by combining biological materials and technological processes, present new forms of biological assemblages. For example, such collectives as *Tissue Culture and Art Project* and *Art Orienté Objet*, artists Eduardo Kac, ORLAN, Maja Smrekar and Robertina Šebjanič invent new forms of hybridization and symbiotic forms of cohabitation. The essay will question what is so specific in bioart and in what respect does it differ from scientific research conducted in laboratories, or from some biological phenomena found in the natural world. My hypothesis is that bioart introduces a specific mode of bio-performativity and creates a unique moment of bio-presence: it does not represent but presents and produces new material bodies, which are living and decaying in our presence. The essay will seek to discuss the specific time in which these Semi-Living objects perform their existence: this time, which is "the time of the now", can be called (in Giorgio Agamben's terms) *kairos* and contrasted with our habitual chronological time. *Kairos* is a messianic time, a contraction of time (similar to time in specific laboratory conditions), which helps to imagine new ways of organizing living materials. In this sense, bio-presence and bio-performativity can be seen as a resistance to the habitual arrangement of space and time and its biopolitical implications

KEYWORDS
Bioart, symbiosis, sympoiesis, hybrid, chimera, bio-performativity.

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Hybrids, Chimeras, Aberrant Nuptials:
New Modes of Cohabitation in Bioart[1]

In this essay, I will focus on three specific cases of bioart: the project "May the Horse Live in Me" by *Art Orienté Objet* (Marion Laval-Jeantet and Benoît Mangin), performed in 2011, the project "K-9_topology" by Maja Smrekar, carried out between 2014 and 2017, and the project "Aurelia 1+Hz / proto viva sonification" by Robertina Šebjanič, carried out between 2014 and 2016. All projects involve a human artist and her collaboration with non-human animals, which is based on scientific research and mediated by technological manipulations. In different ways, each project questions the limits between the human and non-human, blurs the distinction between species and contests the notion of the biological individual. The project "May the Horse Live in Me" by *Art Orienté Objet* (Marion Laval-Jeantet and Benoît Mangin) presents an extreme case of medical self-experiment during which animal blood plasma, containing the entire spectrum of immunoglobulins, was injected into a human body. The intention of this project was that animal immunoglobulins would by-pass the defensive mechanisms of the human immune system and would eventually bond with human proteins, thus creating a certain communication between animal and human immune systems.[2] The project by Maja Smrekar, "K-9_topology", interrogates the co-evolution between humans and dogs. The project questions human exceptionalism and superiority and creates specific conditions for interspecies contiguity.[3] The project by Robertina Šebjanič, "Aurelia 1+Hz / proto viva sonification", investigates the sound produced by marine animals – moon jellyfish.[4] The sound was recorded during the "Deep

1 This research was funded by a grant (No. S-MIP-17-32) from the Research Council of Lithuania.
2 Art Orienté Objet (Marion Laval-Jeantet and Benoît Mangin). 2011. "May the Horse Live in Me". http://www.biofaction.com/synth-ethic/#art-oriente-objet Accessed 2 May 2018
3 Maja Smrekar. 2014–2017. "K-9_topology". The artwork "K-9_topology" which emerged between 2014 and 2017 is comprised of four individual art projects: "ECCE CANIS" (2014, spatial installation); "I Hunt Nature, Culture Hunts Me" (2014, performance); "HYBRID FAMILY" (2015–2016, studio visit); "ARTE_mis" (2016–2017, project in a biotechnological laboratory). http://kersnikova.org/kapelica_gallery_public_release/ Accessed 8 December 2017
4 Robertina Šebjanič. 2014–2016. "Aurelia 1+Hz / proto viva sonification". http://robertina.net/aurelia-1hz-proto-viva-sonification/ Accessed 8 December 2017

Blue" project enacted at the Institute of Marine Science and Technologies in Izmir, Turkey in 2014. The pre-recorded sound is navigated by the artist who attempts to harmonize her melody with the sounds of marine animals.

All these artworks create types of "unnatural participations" or "aberrant nuptials", similar to those described in Deleuze and Guattari's work *A Thousand Plateaus* (2004). In this work the philosophers seek to subvert the structural divisions between species, to question human exceptionalism and anthropocentrism, and deconstruct the notion of human and biological individuality. To achieve this, Deleuze and Guattari contrast what they call the "plane of organization" (the plane of structural or genetic development) with the "plane of consistency" or composition. The plane of organization establishes distinctions and hierarchies, whereas the plane of consistency or composition creates new heterogeneous assemblages. As Deleuze and Guattari point out, "these combinations are neither genetic nor structural; they are interkingdoms, unnatural participations."[5] The essay will focus on these "unnatural participations" and will try to examine the difference between symbiotic and symbiogenetic relationships found in the biological world and the sympoietic assemblages created in bioart. I will argue that to achieve this mode of cohabitation, bioart has to create a new mode of experimental presence which may be named bio-presence. This bio-presence, created in laboratory conditions, is "the time of the now", or biological *kairos*. The essay will question what is this extension of time: is it a space-time where ethical decisions cease to be valid, or is it messianic time calling for a new ethics?

Symbiosis, symbiogenesis, sympoiesis

Besides Deleuze and Guattari's notions of "aberrant nuptials" or "unnatural participations", these artistic examples can be conceptualized in Donna Haraway's term of sympoiesis, which refers to "making-with", or "becoming-with", to create symbiotic assemblages with other species for interactive collaboration or cooperation.[6] Haraway refers to biologist and evolutionary theorist Lynn Margulis and her notion of autopoiesis, which defines the organism as a self-organising, "self-making" system. However, as Haraway points out, organisms are never quite autonomous, and neither biology, nor philosophy supports the hypothesis of an individual organism. Instead, she says, we have intra-active complex systems of relations, where the elements of the system do not pre-exist the relations but are created precisely by them. In other words, the notion of autopoiesis, as Haraway suggests, should be replaced by M. Beth Dempster's term of sympoiesis, which means "collectively producing systems that do not have self-defined spatial or temporal boundaries."[7] Autopoietic systems are self-producing, autonomous and homeostatic, with defined spatial and temporal boundaries, whereas sympoietic systems overcome these boundaries by creating dynamic complex systems. We can argue that autopoiesis explains the functioning of bounded

5 Deleuze, Guattari 2004, 267.
6 Haraway 2016, 58-61; Haraway 2017, 25-27.
7 Haraway 2016: 61.

units or individuals, whereas sympoiesis is a term to explain the collaborative assemblages between different units which can do without the notion of the individual.

In a famous article, "A Symbiotic View of Life: We Have Never Been Individuals", Scott Gilbert, Jan Sapp, and Alfred Tauber (2012) argue that biological individuals are always inhabited by other forms of life, such as viruses or bacteria. After examining a biological individual according to anatomical, developmental, physiological, genetic, and immunological criteria, the authors come to the conclusion that all organisms are related to each other in an all-pervading symbiosis. Following from this, they argue that there is no such thing as a biological individual. In a more recent article Gilbert argues that this statement concerns not only other biological species but also human bodies: "Only about half the cells in our bodies contain a 'human genome'. The other cells include about 160 different bacterial genomes. We have about 160 major species of bacteria in our bodies, and they all form complex ecosystems.[8] After discussing the criteria defining anatomical, developmental, physiological, genetic, and immune individuality, Gilbert argues that none of these criteria defines humans as individuals. Most of our cells are microbial, therefore we are not individuals but holobionts – organisms persistently cooperating with communities of symbionts.

A good example of this conceptual shift in the consideration of identity could be the notion of immunity. In its early development, the notion of immunity was based on the self/not-self distinction: immunity was imagined as a fortress to protect us against other organisms. At the same time, the notion of immunity reflects the old philosophical distinctions between the Same and the Other, self-identical and different, friendly and deadly contagious. However, recent research in immunology destroys these binary models and proves that the immune system allows countless microbes to become parts of our bodies. As Gilbert points out, "even the immune system itself is built by microbes. Without the proper microbial symbionts, important subsets of immune cells fail to form."[9] In other words, recent immunology reveals that there is no such thing as the individual "self" because our bodies can survive only by hosting microbial organisms. "The immune system, rather than being imagined as a force of protective soldiers made by the host, can be thought of as a group of passport control agents and bouncers. (…) The immune system is a composite product of the holobiont, and it is not simply fighting anything that is 'not-self'. Rather, it knows that there are some bacteria that are supposed to be welcomed into our bodies because (…) the bacteria are needed for completing our development and for our physiological functioning."[10] In other words, if symbiosis is the inevitable mode of life, if "we are all holobionts by birth", as Gilbert[11] points out, our vital interest is to find out who is this other or many others which are the composites of symbiosis. What do these modes of

8 Gilbert 2017, 75.
9 Gilbert 2017, 82.
10 Gilbert 2017, 81-82.
11 Gilbert 2017, 84.

symbiosis and co-habitation mean for us and for other species?

Even if biology and immunology take the notions of symbiosis and symbiogenesis for granted, and completely withdraw from the notion of the biological individual, in the Arts and Humanities these notions are progressing differently. As Rosi Braidotti (2013) pointed out, the Humanities are based on the notions of humanism and anthropocentrism, which are so fundamentally situated that it is difficult to question them. Nevertheless, new trends in contemporary theory, such as new materialism, vibrant materialism, or agential realism, together with new insights in biology, evolutionary theory, and immunology, have resulted in a new field of knowledge, which Braidotti names as posthuman Humanities studies.[12] Haraway is even more radical, rejecting not only the Humanities for humusities, but also giving up Homo for humus.[13] As Haraway points out, "we are compost, not posthuman, we inhabit the humusities, not humanities. Philosophically and materially, I am a compostist, not a posthumanist. Critters – human and not – become-with each other, compose and decompose each other, in every scale and register of time and stuff in sympoietic tangling, in ecological evolutionary developmental earthly worlding and unworlding".[14] Thus, sympoiesis is not something found or given, but something that can be artificially created in the Arts and Humanities.

To achieve this possible change would imply two important shifts. First, we have to realize that the relationship between humans and other species is not a relationship between pre-existing, bounded, and finished individuals, but a permanent "becoming-with", where every member of the relationship is created by and with another member. Both humans and non-humans are holobionts, in other words, organisms collaborating with other symbionts. Every member of this collaboration gets its "individuality" only within this collaboration and is defined by its intra-relationships. Second, to explain these relationships we have to borrow terms from biology, as Deleuze, Guattari, and Haraway did. In other words, to describe these posthuman or non-human modes of biological existence, which prevail not only in biological reality but also in bioart, we need a new conceptual vocabulary and a new perspective. The discursive models of signification and interpretation are not adequate to describe this biological reality: holobionts and symbionts evolve, develop, and collaborate rather than signify. In this respect we have to focus on the corporeal modes of sympoietic collaboration rather than on the effects of discursive interpretation.

Hybrids and Chimeras

These questions are at the heart of bioart, which still has to invent new forms of expression to present these modes of sympoiesis and co-habitation. Bioart has thus to invent and produce those forms of co-habitation which are already taken for granted in biology. Even if biologists and immunologists have enough proof that human beings are never self-identical, and that half of our cells are of

12 Braidotti 2013, 157.
13 Haraway 2016, 32; 55.
14 Haraway 2016, 97.

microbial origin, this knowledge does not change our common sense and our relationships with others. In this respect, bioart, by creating and constructing sympoietic modes of existence, such as hybridization, microchimerism, or co-habitation, opens new fields of knowledge. By examining various artworks, we can distinguish between different forms of sympoietic existence: for example, hybridization, which rests on the binary logic of two individuals, which merge together, or microchimerism, which works on the molecular level and dissolves the remnants of bounded individuality. For example, Vinciane Despret distinguishes between hybrids and chimeras, or between what she calls "combinations" and "compositions": "Hybridization remains a matter of a 'combination', thus of the reproduction of certain characteristics of the two 'parent' species. Thinking in terms of hybridization forces the rest to give and to impose a binary system… Metamorphoses, conversely, retranslate 'combinations' into a system of 'compositions', a system that remains open to surprise and to the event: 'other things' can arise that profoundly modify beings and their relations."[15]

In other words, hybrids have two identifiable "parent" species. For example, in Eduardo Kac's work "GFP Bunny" (2000) we have the DNA of a jellyfish combined with the DNA of a rabbit, and similarly, in Kac's "Natural History of the Enigma" (2003–2008) we have Kac's own DNA combined with the DNA of a petunia flower.[16] More challenging and complicated is the attempt to turn "combinations" into "compositions" and to create aberrant chimeras, which do not have official parents and a clearly defined line of descent. Despret describes these new forms of "compositions" as "co-optation, contagion, infections, incorporations, digestions, reciprocal inductions, becoming-with"; following Haraway, she says that "the nature of human being (…) is at its most profound, at its most concrete, at its most biological, an interspecific relation – a process of co-opting strangers".[17] A process of becoming-other, which is also at the centre of Deleuze and Guattari's project, escapes the defined lines of evolution, or structures of genetic development, and liberates particles and parts of anonymous matter. Such becoming, functioning at a molecular level, resists any signification and interpretation, and avoids the logic of scientific classification. A good example of such a multiple becoming could be ORLAN's project "Harlequin Coat" (2008), produced in the Symbiotica lab.[18] The artwork consists of a bioreactor, shaped as a geometrical structure, which is populated with various cells from different species and ethnic origins, including the cells of ORLAN herself and of other mammalian species. Being placed in a bioreactor under specific conditions, these cells grow and intermingle with each other. As such, the artwork denies any biological or genetic development and replaces it with unpredictable, chimeric molecular multiplicity.

15 Despret 2016, 190.
16 Eduardo Kac. 2000. "GFP Bunny"; Eduardo Kac. 2003-2008. "Natural History of the Enigma". http://www.ekac.org/transgenicindex.html Accessed 21 December 2017
17 Despret, 2016, 191.
18 ORLAN. 2008. "Harlequin Coat". https://www.fact.co.uk/projects/sk-interfaces/orlan-harlequin-coat.aspx Accessed 21 December 2017

Having these differences in mind, we can discuss our specific examples. As was mentioned before, the project "May the Horse Live in Me", by Marion Laval-Jeantet and Benoît Mangin, started as a biomedical self-experiment, which consisted of several procedures. Over the course of several months the artist Marion Laval-Jeantet allowed herself to be injected with horse immunoglobulins and thus progressively developed a tolerance to this foreign animal body.[19] To achieve this, they had to exclude some elements that are fatal to humans, such as red blood cells, white blood cells, macrophages, etc.; what remained after this removal was the blood plasma, containing hormones, lipids, and several kinds of proteins (immunoglobulins, cytokines, etc.), which transfer information within the body.[20] After having built up her tolerance, the artist Marion Laval-Jeantet was able to be injected with horse blood plasma during a ritualized performance at Galerija Kapelica in Ljubljana on February 2011. The intention of this performance was that the horse immunoglobulins would by-pass the defensive mechanisms of the human immune system, enter the artist's blood stream, and interact with it. In this respect, the performed horse blood plasma transfusion became the place of negotiations with otherness: on the one hand, the injected blood plasma was recognized by the artist's immune system; on the other hand, some new reactions and affections emerged in the artist's body. As the artist herself points out, the first response to the transfusion was fever, which was going up and down, then sleep disorder, a very strong appetite, and panic attacks.[21] After the transfusion, the artist performed a communication ritual with a horse, walking beside the horse with leg extending stilts. Afterwards her blood sample was extracted, which became completely clotted in ten minutes, thus showing a symptom of strong inflammation. The blood sample, which was freeze-dried, can be seen as a synecdoche part of the performance, as a document of a new form of "becoming-with", or the becoming-horse of the performer.

Maja Smrekar's project, "K-9_topology", in different forms and in different time periods, examines the potential co-evolution and co-habitation between

19 Art Orienté Objet (Marion Laval-Jeantet and Benoît Mangin). 2011. "May the Horse Live in Me". http://www.biofaction.com/synth-ethic/#art-oriente-objet Accessed 2 May 2018

20 As the artist points out in her conversation with Aleksandra Hirszfeld, "we need to remember that when we talk about horse blood transfusion it was not transfusion of all its components. For example, we excluded some most cytotoxic red blood cells, as well as lymphocytes and macrophages. We have however saved for transfusion all other cells, including immunoglobulin, which transfers information within the body, between the body's organs. The transferred information is not only immunological but also about the needs of the body. Preparing for the performance I had to test every immunoglobulin on myself in order to avoid anaphylactic shock during the transfusion. By recognising strange cells my body could get rid of unbearable excess. However, the huge amount of injected cells helped over half of them to bypass the defensive mechanism of my body and forced my organs to response directly."
Aleksandra Hirszfeld. 2016. "May the Horse Live in Me (interview with *Art Orienté Objet*)". http://artandsciencemeeting.pl/teksty/may_the_horse_live_in_me_interview_with_art_oriente_objet-13/
Accessed 8 December 2017

21 Ibid.

humans and dogs. The first part of the project, the exhibition "ECCE CANIS" (2014), reproduced the smell of hormone serotonin, which was biotechnologically extracted from the blood of the artist and her dog. This hormone defines reciprocal tolerance between humans and wolves, which were domesticated as dogs. In this respect the smell of serotonin not only created the molecular environment for interspecies cohabitation, but also incited the spectator to become part of this process. Another attempt to create a symbiosis between the two species was the performance "HYBRID FAMILY" (2015– 2016), which took place in Freies Museum in Berlin. During this performance, the artist, using a certain diet and mechanical stimulation of her breasts, produced a certain amount of colostrum, which was used to feed a puppy. In this respect the performance questions the normative status of the heterosexual family and invites us to imagine "unnatural" or "aberrant" familial ties with other species. The project "ARTE_mis" (2016–2017) pushed these interspecies relationships even further by attempting to create a hybrid at a cellular level: after conducting research at the laboratory, the artist and her co-workers managed to perform in vitro "fertilization" of the artist's egg cell with her dog's somatic cell, taken from its saliva.[22] The merged cell was maintained alive for two days; when the nutrition was stopped, it remained frozen as a molecular sculpture. Although the merged cell had no chance to develop because of large biological disparities between the two species, this frozen molecule can be seen as a virtual form of a wolf-man or wolf-woman, which potentially may become real in the future, when (and if) the artists can legally use dog's reproductive cells (instead of somatic cells). In this sense, both projects by Marion Laval-Jeantet and Benoît Mangin and by Maja Smrekar create hybrid entities at a sub-cellular level and question the boundaries of individual organism and the divisions between species.

Similarly, Robertina Šebjanič in her work "Aurelia 1+Hz / proto viva sonification" examines the co-evolution and interspecies communication between humans and jellyfishes. The jellyfish *Aurelia Aurita* is one of the ancient species that has been around for more than 500 million years. Even if the environment of the oceans and seas is rapidly changing, it seems that it does not disturb the jellyfish. The *Aurelia Aurita* has some rudimentary sensory nerves which allow it to perceive light, smell, and orientation. Its

22 "A reproductive cell has been in vitro enucleated in a laboratory with micromanipulators. Then it was left under a UVC light for 30 minutes, so as to achieve decomposition of all DNA in the cell. The leftover membrane of enucleated reproductive cell was fused with a dog's somatic cell, isolated out of her saliva, through the process of electroporation. Since a reproductive cell "programmes" the nucleus to divide, after 7 divisions, the aggregate of 128 cells, on the 6th day, a blastocyst occures. ARTE_mis has been left to divide just up to the stage before the formation of a blastocyst. It was then frozen to a – 198 degrees Celzius, after a 3rd day of growth. It gets reanimated for the exhibition, with the nutrition and hormone feeding stopped, so that the cell stays frozen in time." http://majasmrekar.org/ARTE_mis Accessed 2 May 2018
However, in her earlier interview, the artist expressed an intention to use not a dog's somatic cell but sperm: "in my fourth project within the K-9_topology series, I am suggesting to inoculate in-vitro my eggs with dog sperm in order to eventually make a new species which would have better chances to survive in the very unpredictable nature of the future." See: Régine Debatty. 2016. "Post-anthropocentric art. An interview with Maja Smrekar". http://we-make-money-not-art.com/post-anthropocentric-art-an-interview-with-maja-smrekar/ Accessed 8 December 2017

gravity receptors, containing calcium crystals, are similar to our Vestibular system. Having these similarities in mind, the artist investigated the possible cohabitation and communication between humans and jellyfishes. She recorded the sound of jellyfish in their natural environment and then navigated this sound archive with the help of a special program which translates the movements of jellyfish into specific sound found in the archive.[23] This sonic and visual experience creates the feeling that the observer is immersed in the milieu of a living organism and takes part in its creation and development. Here, the performer, who navigates the sound and the recording of previous experiments, acts as another organism, trying to harmonize her melody with the host organism. In this respect, the performance by Robertina Šebjanič, similar to the performances discussed earlier, changes the anthropocentric perspective and attempts to create an affective relationship with a non-human other. In contrast to scientific research, which examines different forms of symbiosis which are already found in the natural world, bioart invents and produces new forms of hybridization, molecular becoming, and co-habitation.

At this point, we can argue that the symbiosis and symbiogenesis found in the natural world follow a certain pattern of genetic organization or evolutionary development, whereas molecular assemblages, created in bioart, are heterogeneous, erratic, and contingent. Similarly, Deleuze and Guattari distinguish between two principles, or two planes: one is the plane of organization or development, "it is structural or genetic, and both at once, (…) the genetic plan(e) of evolutionary developments with their organizations"[24]; and there is a different plane, a plane of consistency or composition: "there is no structure, any more than there is genesis... (…) It is thus a plane of proliferation, peopling, contagion; but this proliferation of material has nothing to do with an evolution, the development of a form or the filiation of forms."[25] Whereas the plane of organization belongs to the kingdom of nature, the plane of consistency or composition breaks any distinction between the natural and the artificial. The plane of consistency or composition is the plane of art, which, through artificial means, creates new compositions and becoming. Although described as two opposing principles, these two planes always need each other. This is obvious in the case of bioart, which combines natural biological materials and processes with artistic compositions.

Bio-presence and bio-performativity

The question that we have to ask now is what makes these hybrid entities or co-habitations a sym*poiesis*; in other words, what makes it not only a form of biological symbiosis but also *poiesis*, a form of art. As we can see, the works of bioart are very often conducted in laboratories with the help of researchers, and the result of this research usually has nothing artistic in itself. Sometimes the boundary between the mere scientific research and the work of art is

23 For more detailed information see: "Aurelia 1+Hz / proto viva sonification" (2016) by Robertina Šebjanič. http://robertina.net/aurelia-1hz-proto-viva-sonification/ Accessed 8 December 2017

24 Deleuze, Guattari 2004, 292-3.

25 Deleuze, Guattari 2004, 293-4.

almost inconceivable. As Daniela Silvestrin observes in her conversation with Jens Hauser, Kac's "GFP Bunny" seems to be "art" just because it was created by an artist.[26] However, something more is involved: bioart is a specific form of art which has the power to confront the spectator with biological or organic presence. This organic presence residing at the heart of an artwork is something completely different from the conventional forms of representation. As Jens Hauser points out, "this art uses a priori nonimage-producing bio-technological processes, and turns the representation of physicality into its originally constructed and staged presence."[27] In other words, bioart is a form of art, which does not represent biological reality but produces and presents it. This staging of a new biological reality, besides its technological mediation, is a performative act, inventing and, at the same time, asserting a new reality. It is important to note that new biological reality asserts its existence not by the hermeneutical circle of signification and interpretation, but by direct bio-mediality, which attracts the spectator with its affective corporeality. For example, the smell of human and non-human molecules of serotonin, the transfusion of horse blood plasma to the artist's body, or the artist feeding a puppy, – all these staged presences create a strong feeling of physical proximity and affective response, and, in terms of Neal White, can be named as invasive aesthetics.[28] The molecules of smell and the flow of blood or milk directly connect human and animal bodies, performatively relating them into a new hybrid co-corporeality. The physical presence of live animals, related to human bodies via biological substances (milk, blood), create strong evidence of "becoming-with" and sympoiesis.

However, it seems that artists are not fully satisfied with these practices of bio-presence and bio-performativity. Therefore, besides presenting the real biological processes, they also use more conventional forms of simulation and visual representation. For example, during the performance "May the Horse Live in Me", the artist conducted a symbolic ritual to get into a relationship with the live horse in a gallery space and visually imitated the horse by using leg extending stilts and by her horse-like appearance. Similarly, in the "K-9_ topology" project, the artist simulates a visual resemblance to wolves, as if trying to recreate mythopoetic images of a wolf-man or a wolf-woman. In a different part of this project, in the performance "I Hunt Nature and Culture Hunts Me" (2014), the artist developed a situational communication with wolves and, with the help of ethologists, tried to establish her animal position in a wolf pack. In this respect both artists withdrew from the domain of bio-presence to the more conventional domain of signification, visual representation, and simulation. However, this "compromise" makes their performances very close to performance art or live art, and potentially affects the audience with their

26 Daniela Silvestrin. 2012. "Dialogues on "Bioart": A Conversation with Jens Hauser". http://digicult.it/news/dialogues-on-bioart-1-a-conversation-with-jens-hauser/ Accessed 21 December 2017

27 Hauser 2010, 89.

28 Jussi Parikka. 2016. "The Office Experiment: An Interview with Neal White". https://jussiparikka.net/?s=invasive+aesthetics Accessed 21 December 2017

animal theatricality. As Jens Hauser points out, this shifting between different modes of expression is what defines bioart: "Bioart shares with live art the dialectical relationship between real presence and representation. (…) What this gives rise to for the spectator is a realm of emotional tension and interplay between the two possible modes of perceiving the action. Likewise, the viewer who is experiencing bioart may switch back and forth between the symbolic realm of art and the 'real life' of the processes that are being put on display and are being suggested by organic presence."[29] In other words, it seems that bioart cannot quite communicate its bio-performativity without the help of conventional theatricality.

Oron Catts and Ionat Zurr, artists working at *Tissue Culture and Art Project*, point out that "the tissue itself did not effectively communicate its aliveness".[30] Therefore, the artists, while presenting their works "Disembodied Cuisine" (2003) and "Victimless Leather" (2004)[31] in the gallery, had to invent some special "feeding rituals" and "killing rituals" to interact with the audience. In this respect we can argue that conventional theatricality helps bio-performativity to gain its affective force and visibility. The same problem occurs in the performances discussed earlier, which result in new forms of life, frozen in a state of molecular sculpture (the blood sample of the Centaur or the egg cell, "fertilized" with a dog's somatic cell). It seems that these new presences cannot communicate their cutting-edge novelty without the help of real animals, which are brought on stage as performance actors. The presence of an animal affects the audience with the feeling of co-corporeality and helps, at least for a moment, to arrest the all-pervading assumption of anthropocentric superiority. As Marion Laval-Jeantet points out, she always felt frustrated because of her inability to put herself in place of an animal and because this place is systematically set from man's perspective.[32] Maja Smrekar, as was mentioned earlier, also tried to establish her animal position in a wolf pack in her project "I Hunt Nature and Culture Hunts Me" (2014). Her performance clearly refers to earlier performances with real animals, such as Joseph Beuys' "I Like America, America Like Me" (1974), or Kira O'Reilly's "Falling Asleep with a Pig" (2009)[33]. It seems that the real biological presence of the animal body has the power to affect the spectator's bodily condition and to enhance his or her animality.

A slightly different strategy is used in Robertina Šebjanič's work "Aurelia 1+Hz / proto viva sonification", which also contains an interactive installation "Aurelia 1+Hz / proto viva generator" (2014). The generator consists of real jellyfish contained in an aquarium and a robotic machine, which is animated

29 Hauser 2010, 91.

30 Catts, Zurr 2016, 144.

31 The *Tissue Culture and Art Projec*t (Oron Catts and Ionat Zurr). 2003. "Disembodied Cuisine"; 2004. "Victimless Leather". http://lab.anhb.uwa.edu.au/tca/ Accessed 21 December 2017

32 Aleksandra Hirszfeld. 2016. "May the Horse Live in Me (interview with *Art Orienté Objet*)". http://artandsciencemeeting.pl/teksty/may_the_horse_live_in_me_interview_with_art_oriente_objet-13/ Accessed 21 December 2017

33 Bryndís Snæbjörnsdóttir and Mark Wilson, 2010.

not by using artificial intelligence but the live organism of a jellyfish. In this respect, the installation blurs the difference between a natural organism and a machine and asserts the creative nature of any assemblage. Another part of the project, which includes the artist herself, explores the sonic assemblage consisting of natural sound performed by jellyfish and the recorded sound navigated by an artist. The performer, who navigates the sound and the recordings of previous experiments, here, acts as a different organism, which is grafted into the first, and has to harmonize her melody with the host organism. In other words, the rhythmic sonification acts as a medium of becoming, which merges the becoming-animal of the performer and the becoming-music of an animal. Instead of using simulation or imitation, the performance is involved in experimentation and contingent becoming.

To summarize, all of the discussed artworks oscillate between the plane of organization and the plane of consistency and composition. On the one hand, by using living organisms and tissues, they follow the patterns of biological development and organization; on the other hand, by creating new heterogeneous and contingent assemblages, they work on the plane of composition. These artworks simultaneously represent natural order and present new biological hybrid assemblages. On the one hand, these artworks recreate conventional forms of representation, such as rituals and theatricality; on the other hand, they invent new forms of bio-presence and bio-performativity, which affect the spectator directly. They combine conventional forms of signification and interpretation with contingent experimentation and unpredictable becoming. Working simultaneously in two different regimes, these artworks also involve different modalities of time and duration.

Biological *Kairos*

How can we define these strange biological entities, which are created in laboratories using artificial conditions and which express the mode of sympoiesis or becoming-with? Oron Catts and Ionat Zurr, working with tissue culture, invent the term Semi-Living being. The term refers to fragments or parts of organisms which are taken from their original context, then grown, mixed, and kept alive with the support of artificial conditions and biotechnologies.[34] In this sense, the Semi-Living being lacks a cultural context to be inserted in: as Catts and Zurr point out, “Semi-Livings are lab-grown and lab-modified entities which sit uncomfortably within new biological and cultural taxonomies. They problematize notions of body, agency, species, gender, race, class, or life itself. However, as they literally are potentially dying, they require our attention: physical, technological, and conceptual.”[35] Lab-grown Semi-Living beings, potentially living and dying at the same time, can be treated as “bare life” in Agamben’s terms. In this sense, Semi-Living beings are the object of manipulation and control, which can prolong or terminate their aliveness. This potential death, as well as the potential or future life, belongs to a specific modality of time – the messianic *kairos*.

34 Catts, Zurr 2016, 135.
35 Catts, Zurr 2016, 137.

In *The Time That Remains* (2005), Agamben refers to different modalities of time – secular chronological time, eschatological time, and messianic time. Eschatological time reflects the eschaton – the end of time, the instant, when the time ends. By contrast, "the messianic is not the end of time, but the *time of the end* (…). What interests the apostle is not the last day, it is not the instant in which time ends, but the time that contracts itself and begins to end (…), or if you prefer, the time that remains between time and its end."[36] The apostle Paul refers to secular time as *chronos*, or chronological time, which lasts from the creation of the world to the messianic event. Here, time contracts itself and begins to end. This contracted time is *ho nyn kairos*, "the time of the now". However, this contraction of time does not coincide with eschatological time, which marks the coming of the Messiah and the new world, and which ends the time and enters into atemporal eternity. As Agamben points out, messianic time is neither chronological time, nor eschatological time: "it is a remnant, the time that remains between these two times, when the division of time is itself divided…"[37] For Agamben, messianic time has the transformative power to end secular chronological time and to convert it into eschatological time of eternity. In this sense, messianic time "is a caesura which, in its dividing the division between two times, introduces a remainder [resto] into it that exceeds the division."[38] It is time in-between, which undergoes an entirely transformative contraction.

As such, messianic time is not external to chronological time, but is internal to it. It is a contraction of chronological time which comes to an end. "This contraction of time, Agamben suggests, is rather like the muscular contraction of an animal before it leaps – an image that beautifully highlights the fullness and power of messianic time. While not the leap itself, messianic time is akin to that contraction that makes the leap possible; it is the time 'left to us' before the end and which brings about the end."[39] Agamben takes the notion of time that contracts itself from the linguist Gustave Guillaume. Guillaume defines "operational time" as a time that the human mind needs to construct an image of time. In this sense, Guillaume defines time as a three-dimensional formation: we can grasp time in its pure potentiality, in its very process of formation, and, finally, in the state of having been constructed.[40] In other words, we can realize time as having been constructed and represented, but also we can grasp time in the moment of its formation or emergence – this is *kairos* or operational time. The time, which is alive as the muscular contraction of an animal, can be imagined as the time of life itself.

The notion of operational time can be useful to describe the moment of experiment taking place in bioart. What is the time of the Semi-Living lab-grown entity? To which modality of time does it belong? Obviously, it is not a chronological time, representing what is already given. It's time in-between, a time full of possibilities for entities which are potentially alive (being supported

36 Agamben 2005, 62.
37 Ibid.
38 Agamben 2005, 64.
39 Mills 2011, 132.
40 Agamben 2005, 66.

by biotechnological means), and potentially decaying and dying. Furthermore, it is an operational time, a small moment of time given to understand the image of life, to comprehend life in its full potentiality. How can we classify such entities as a blood sample, containing the molecules of horse and human blood, or a frozen fertilized cell, containing human and dog cells? This is biological *kairos*, the decisive moment when something new that is not yet present may come to life or it may die or disappear. In this sense, the biological *kairos* carries in itself some messianic promise of a different biological future. Donna Haraway also noticed this messianic dimension of experimentation when describing the special case of the oncomouse, a genetically modified mouse, which carries an activated oncogene and which was created to research breast cancer. In Haraway's interpretation, the oncomouse is both a scapegoat and a secular Christian figure which will be sacrificed to find a cure for breast cancer and possibly save many woman – other mammalian beings.[41] In this respect the time of an experiment is the moment of *kairos*, the contracted time, where the moment of the animal's death contains a promise of a different future for humans. Biological *kairos* is this impossible, unthinkable moment, where life and death, animal life, and human life can be replaced interchangeably. Bioart explores precisely this interchangeability by making the artist's body become the time and space of an experiment. In this sense, the artistic experiments invent, in Levinasian terms, an ethics of substitution, when the artist literally becomes the host and the hostage of the other and thus creates a singular act of ethical responsibility.

Biological *kairos* is also a critical, decisive moment, which can involve danger for an artist, the danger of anaphylactic shock, the danger of animal aggression or of deadly contact. It is the artist who has to attune her immune system to accept the horse blood, to reconnect with dogs using the hormone of serotonin, the colostrum, or a reproductive cell, or to synchronize her performance with the melody of jellyfish. In this sense, the discussed examples of bioart, which imply both a promise of a different future but also the reality of contagious connection, stand in contrast to Haraway's quest for sympoiesis which does not demand any real changes for the theorist. Sympoiesis still belongs to chronological time, to the plane of organization, where things connect and reconnect without breaking natural patterns. By contrast, bioart belongs to a different paradigm, to the plane of consistency or composition, where things emerge not by filiation or heredity, but by contagion and artificial interventions, forming new heterogeneous assemblages. These new assemblages, being temporary, erratic and fragile, take place in a leap of time: they may look like a messianic promise of a different biological future, but they may also contain real danger both for human or non-human agents involved in this assemblage. These new forms of assemblage-like cohabitations demand a different kind of ethics, which, in the Levinasian sense, is unpredictable, incalculable, and asymmetrical.

41 Haraway 1997, 79.

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