Artists have long used animals for their artistic practices, from using cadavers for anatomy studies or animal body parts like bones, feathers and tusks to arranging dead butterflies in patterns and pictorially represent them in all sorts and forms.
In this article, Lula Criado and Meritxell Rosell (editors of CLOT Magazine) discuss the rise in the number of artists exploring a deeper interest in human-animal relationships.

- Lula Criado and Meritxell Rosell

- September 2017

- in Articles

- Leave a comment

On Interspecies Creativity
by Lula Criado and Meritxell Rosell

Artists have long used animals for their artistic practices, from using cadavers for anatomy studies or animal body parts like bones, feathers and tusks to arranging dead butterflies in patterns and pictorially represent them in all sorts and forms.
In recent years, though, there has been a rise in the number of **artists exploring a deeper interest in human-animal relationships**. Since the 1960's there have been several art shows addressing these issues. Jannis Kounellis brought birds and horses into galleries and Joseph Beuys co-lived with a coyote in a New York Gallery in 1974. Nevertheless, much of the artworks in these shows are conventional in their mode of production and they don't establish a clear position to the species hierarchies they often attempt to discuss, like the eco-worlds of Pierre Hugé, which seem to aim for reflection through an uncanny sense of indifference towards the animals.
During the last three decades, we also have seen profound changes in our society, not only in the political and economic sphere but also in the sociological and artistic. Artists using biology as a medium have catalyzed a rethinking of the ethical implications of the scientific research on one hand; and of the cognitive frames and concepts such as cognition, epistemology and biosemiotics on the other one [1]. In the last 10 years there has been a flourishing number of artists who use living organisms and biological systems as working material and philosophical model, establishing a particular creative relationship with them. The range of organisms is wide: from less complex life forms, such as bacteria and slime mould, to life forms with higher complexity, for example, worms, bees, ants, spiders, jellyfishes and even fishes and birds.

On the other hand, collaborative art is an aspect of contemporary art whose earliest manifestations can be located in the 1960's. Its origins are drawn in compromised political art proposals, together with the proliferation of 'performances', quite remarkable in Britain and the United States, in the late 60's and early 70's. The prospect of interspecies collaborations questions our scientific and artistic paradigms. It arises from a very basic question one faces when trying to establish an interspecies collaboration – the old philosophical argument of "the Problem of Other Minds,": How can we know how others think, feel and experience? How can we carry on artistic research in collaboration with someone whose experiences, sensations, and knowledge is difficult or impossible to understand, or can't communicate in the classic sense? These questions are also challenged by Descartian and Judeo-Christian ideas (such as only humans possess a soul or the blasphemy in attributing animal features to gods) that have been cemented in Western Cultures. Besides, do animals feel or experiment creativity? Maybe some of them. Even though it's mainly for reproductive purposes, birds, fishes, elephants, gorillas and other living organisms have been described to show a certain aesthetic sense.

As artist **Nurit Bar-Shai**, interdisciplinary artist and educator, who is the co-founder of Genspace, the community biology lab in Brooklyn, points out:

"*I'm often puzzled how we still think about nature from a very human centric point of view. Sorting and ranking the world's species by "higher" and "lower" organisms, we have removed ourselves from the food chain network, and placed humans as superior to all other species. We distinguish a bacteria cell very differently than a worm, a fly, a mouse, a dog or a chimpanzee. Moreover, different countries attribute different ethical hierarchies towards the living world rooted in cultural and belief systems. In some countries street dogs and birds are caught and eaten, while in other countries this would be considered as a barbaric act. Or take the cow for example, which is venerated for the Hindu religion, while it is a common ingredient for its meat, milk and skin in most other countries. In addition, we have been killing or keeping in captivity a great number of animals, grow them in designed habitats, breed and domesticate them, and most recently engineer them as well. Our relationship with the living world is complex. We exploit and abuse non-human species for food, products, clothing, medicine and labor, rituals or entertainment, scientific research or as companions. Over the years religion, philosophy, economy and politics have justified and confirmed these relationships on human's behalf, which saved and cared for some, while enabled horrific behavior towards others to a degree of great suffering or extinction of many species (accidental or deliberate). We have been overlooking (objective) ecological communities, while humanizing living systems by attributing human characteristics, feelings and emotions to them. Thus, concepts such as*

control, in regards to giving life or cutting-off life, as well as, the quality of life – the "freedom of choice" might seem meaningless in the eyes of the biosphere's nutrient cycle where the death of one is the nutrient of another. We always think we know what's best for the organism, either because we act out of guilt or rather motivated by power and progress, but in fact, we will never know that until we share a common communication system and perception. Inevitably, being part of those hierarchal systems, attributing ethical questions really depends on the organism you work with. Then you also have to think about the organism's needs and requirements for survival and its habitat, and in our case, a designed habitat – an in-vitro ecosystem. Only then we can start talking about relationships, collaborations, partnerships or authorships, unique for each and every biological system."

Going back to semiotics, the first step to reach interspecies collaboration is the establishment of communication. In so, *interspecies communication* would be defined as the interchange or transmission of thoughts, opinions, or information by speech, writing, or signs from members of one species to members of another species [2].

Mostly, we think of interspecies communication as only the one taking place between human beings and domestic animal species, such as dogs and cats. Scientific research also seems to point out that particular sea mammals (dolphins and whales) can communicate with humans through a certain speech or gestures. But interspecies communication is a more complex and subtle phenomena than this. Communication can spans across a vast range of physical media, environments, organisms, and degrees of consciousness: from bacteria and microscopic sea creatures emitting toxins and other substances when it's time to feed or infect a host, to quorum-sensing jellyfish signaling when it's time to rise to the surface to feed and procreate. In this sense *Dr Simon Park*, an artist (and microbiologist by training) working with bacteria, has quite a particular view on the issue:

"*Recent advances, in the study of the human microbiome, suggest that our bacterial microbiota is able to manipulate hormone production in our bodies, and through this, modulate our moods and mental health, so the microbiome, could be argued to be a co-author in every work of art ever produced by a human*." [3]

Beyond just communication, when working creatively with living matter, questions such as the implications of shared authorship, notions of non-human subjectivity, and issues of care and control are raised. What is the basis of interspecies co-creation? Can it constitute collaboration? What are the ethical implications? And what are the limits and fundamental considerations of the field? We have asked a group of practitioners engaged in creative practices with non-human life forms to explore issues connected with interspecies communication, co-creation and

collaboration, and the ethical and legal implications. We focused this exploration around the question on how these creatives would describe the relationship they have with the living systems they are working with and to consider the ethical and authorship considerations. We have found varied opinions, and they look to vary depending on the biological system we are talking about. Some we have questioned have practices that are not properly collaborative, such as **Eduardo Miranda,** a Brazilian composer and researcher with interest in the field of human-machine interfaces and biocomputing. Miranda uses slime mould for his project on biocomputing music:

"*We treat Physarum polycephalum with care and follow the guidelines. Although this organisms is very primitive, we follow the procedures and methods adopted by the scientific community and endorsed by the Biology department of our university. We noticed however that my team and I sometimes develop an emotional attachment to it. Ed Braund, my assistant, sometimes refers to the slime mould and the lab's pet. We keep a farm inside a large improvised sort of Petri dish in the lab and feed it with oat flakes every mornings: they have porridge for breakfast*".

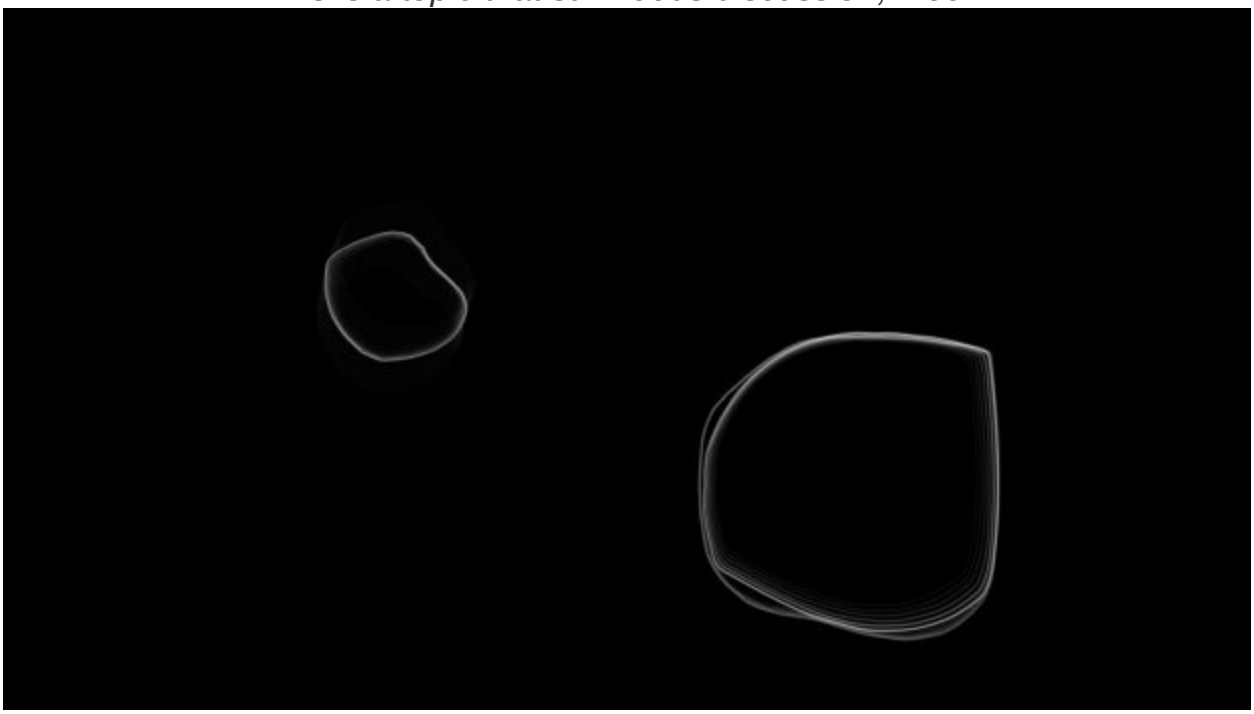
Or **Loren Kronemyer,** a transdisciplinary artist working with insects as a means to bridge the language gap between humans and other life forms:

"*My work has called for me to interact with varied and diverse living systems. With every interaction, I try to keep consent and compatibility as my top priorities. I try to work with creatures in a context that is compatible with their needs and lifestyle. I try to achieve the outcomes I want through listening and conversing with a species' behaviour, always remaining open to surprises. I avoid deprivation as a way to achieve results. I stay away from for the word collaboration unless a project is truly collaborative. Provoking insects in a box or manipulating cells or training plants isn't collaborative – those creatures aren't there by choice. It isn't a collaboration. As a human, I wouldn't consider being entrapped into a situation as collaborative. I try to keep these values in mind with the human systems I work with as well.*"

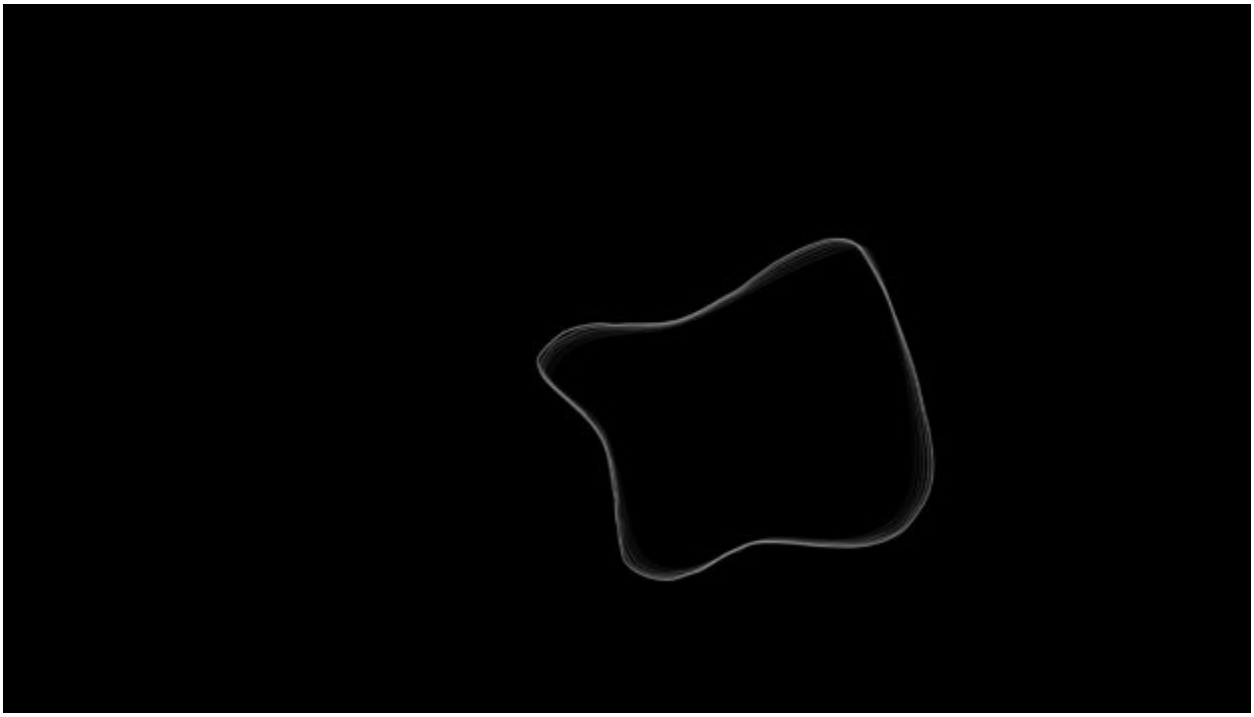
There are concerns on issues regarding the fine line regarding ethical issues, exploitation, and the inherent responsibility working with living systems conveys. **Theresa Schubert,** a post-media artist and researcher at the intersection of art, biology and technology, using generative systems from biological origin (slime mould) – shared with us:

"*In general I critique the traditional authorship role that pictures the artist as a genius. I don't see myself in this tradition as my work often involves profound research that draws on the knowledge of other experts and sometimes involves collaboration with people from other disciplines. Further as I am working with moist media (a term coined by Roy Ascott) such as slime moulds, fungi, moss or*

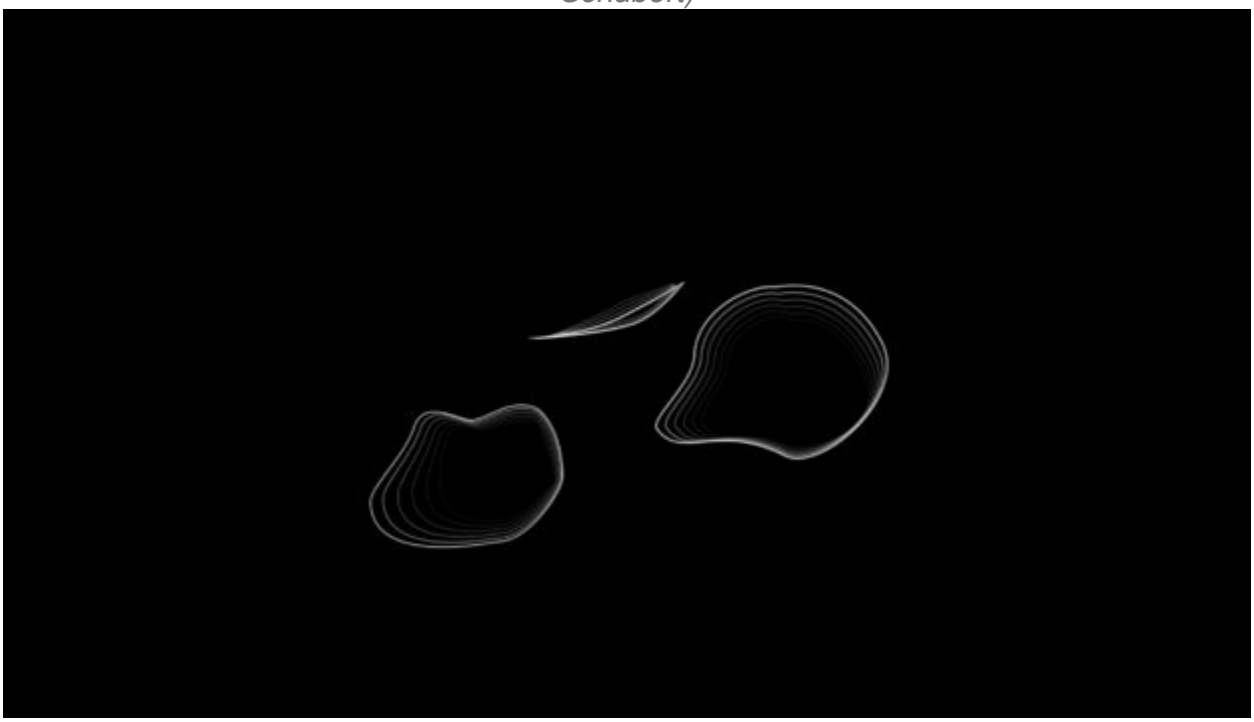
lichens, I like to think of me and the organisms as co-authors and collaborators. My aim is to create situation where interactions between us offer the possibility for co-creation and even contingencies of something unexpected. Rather than 'author' I am sympathizing with terms such as investigator ('Versuchsleiter' as described by Erika Fischer-Lichte in performative turn) and moderator between different human and non-human actors. Sometimes the artist can even be a disruptive factor in the meaning of what the physicists call the observer effect.I hold the highest respect for the organisms I work with and sympathize with them. When I started to work with slime moulds in 2010, they grew from a mere material, to a kind of pet for me that I would even take on holidays, finally to collaborators. Overall though, ethics (in the meaning of animal rights) do play a side role for me. As I work only with non-neural organisms such amoebae, fungi, plants, I hope the experiments I do, don't traumatize them too much. A topic that is more of a concern to me is that of exploitation. Since the rising popularity of animal art (making art with animals) in the last decade, I find it sometimes questionable whether the animals are just used as a fancy and fascinating feature or whether the animal's interests and needs are still properly addressed. This is a topic that still needs discussion, I feel."



Theresa Schubert: Morphological Twists. (Photo copyrighted and courtesy of Theresa Schubert)



Theresa Schubert: Morphological Twists. (Photo copyrighted and courtesy of Theresa Schubert)



Theresa Schubert: Morphological Twists. (Photo copyrighted and courtesy of Theresa Schubert)

Robertina Sebjanič is an intermedia artist blending art science and technology. Her work encompasses audiovisual installations and noise/sound performances that tackle philosophical questions of our modern society unfolding her passion

for understanding living systems and how they interact with the environment. She also thinks that "*working with living organisms is mostly a big responsibility and is needed to understand / to know the organism involved really good – to know how to work with them.*
Living systems are very complex to maintain in closed environments, it is important to understand how animals behave and talk to experts to establish a safe environment that enables these organisms to have the best possible experience in closed habitat. I see this as the main challenge when showing works involving living organisms. The Aurelia 1+Hz project is demanding, especially the maintenance of jellyfishes, so I really try to make sure that the moon jellyfish are not in a stressful environment during my exhibitions and performances,and that all what they need is provided for them. But have to also say that there is still really hard to lien one or other side, as there is a lot of pro and contra – why to bring animals to the gallery, but that was reason – that i have the aquariums that are used in frames of the project are developed by Cubic Aquarium Systems and are built in a way that enables these organisms to have the best possible experience in closed habitat. As well after the research phase of the project was done I'm mostly borrowing the jellyfish for the local aquariums or aquaristic shop or laboratories where they work with them and also after the performance / exhibition is done bringing them back to the place i borrowed them. Mostly I also work with organisms that they had been also well researched and used as a modular organism in the laboratories for jellyfish research, by this there is already a lot of data, and as well there are already protocols regarding the maintenance of animals and how also to behave with them during the research. with the project Aurelia 1+Hz / proto viva sonification – I try illuminate and talk about the understanding the animals – that are not typical companion species / domestic animals (like dogs, cats etc…) that we are used of them as pets and our companions and we have already developed some of emotional transfers – but i like to make an "emotional" imprint to people who come to see / experience my projects, with some animals that are unknown- alien to us humans to understand that there is a all possible different organisms with their own complexity – that is still unknown to us. And if is unknown – it does not means that is not having emotions, feelings, awareness of its existence and existence of others….etc… and that is the reason I chose the words of Paul Celan to be part of the description of the project: "There are still songs to sing beyond mankind". I understand this as – there is also culture that is unknown, and it has its own mathematical, poetical linguistic aural etc…. structure … and that could refer to the living organisms that are surround us – with some of them we manage to communicate – mostly we know how to make it inferior, so that we (humans) can dominate…."

Robertina Šebjanič: Aurelia 1+Hz (Photo: Miha Fras archive Gallery Kapelica)

For others there is a clear collaboration with the living creatures and organisms that enriches and it is central to their practices. For example, for **Simon Park** sees the bacteria strains he works with as co-creators: "*the microorganisms that I work with in my practice are independent and able to make their own decisions so I very much see them as co-authors in the work that I produce.*"

Or **Ren Ri** – a Beijing-based biomedia artist and beekeeper whose work investigates the relationship between humanity and nature: "*My art is to emphasize the personal experience, which needs people involve in the intervention directly. I refuse to hire beekeepers to work for me so that I have to be a real beekeeper and I have done beekeeping for 11 years. This is the core concept of my works. Thus I can get in touch with bees and study the bees' biological system deeply, which is very important to me, because I'm convinced bee society are the most high-level form in the future species which is far beyond that of human beings. And I truly wish I could be a member of bee society.The most direct experience in the beekeeping process is to adjust my physiological time and the natural time of bee society, to make the very different algorithmic time lines to converge on a joint, and to respect bees' natural biological time and space. In a sense, my works is a kind of by-product of the bees, the excess storage space after the flowering season. (I went to different parts of China*

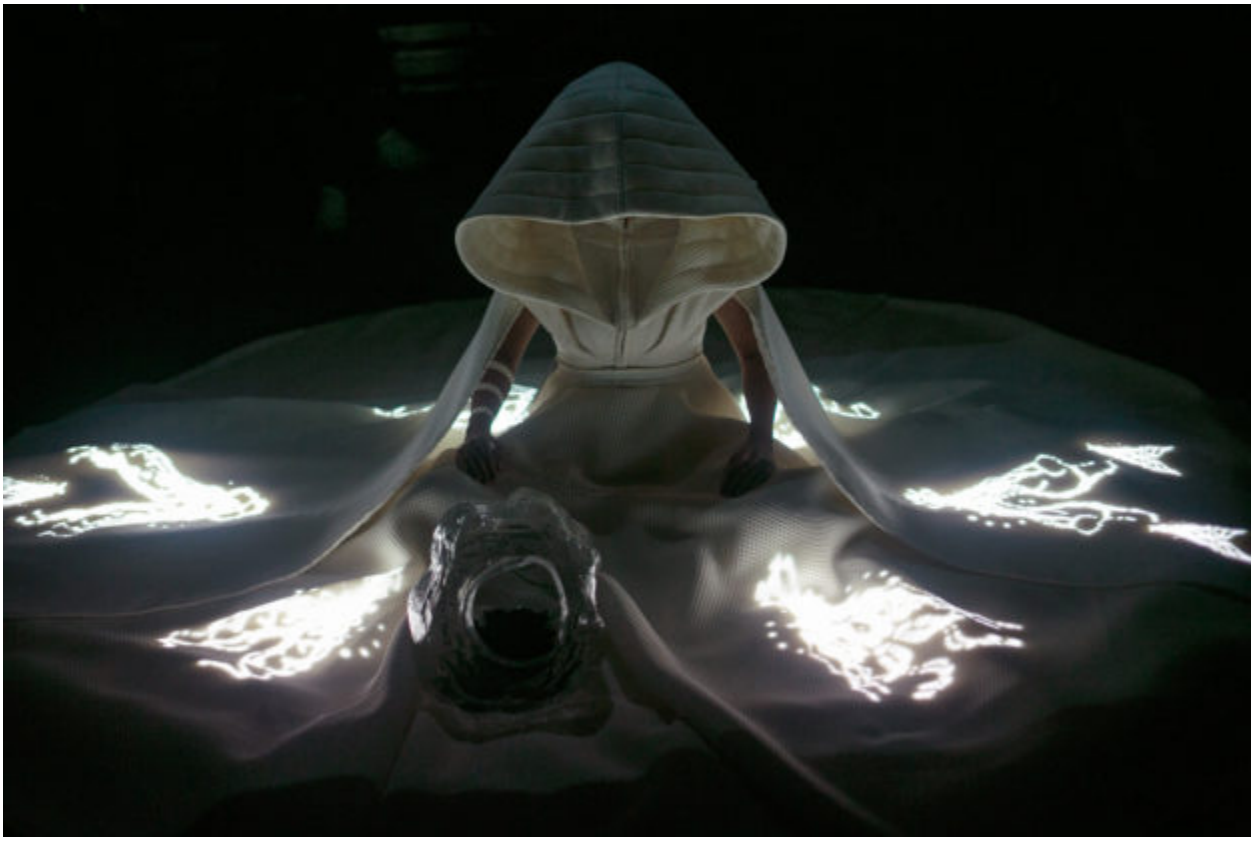
according to the flowering time in those places, so that bees will collect much more honey to build their honeycomb. My works is actually the bees' excess storage space out of my given structure). The generation of my work is just like to wait for the proper time to pick the ripen apples. And I believe it is the core point to the ethical problem. That is, in the intersection of different systems, humans could choose what kind of position they stand, and under this condition , ethic could be understood as a way of doing things according to the natural system. At its simplest, that right things to be done at the right time is morally correct, in which time is referring to the natural system. Specific to my works, it refers to the bees living system. The author of my works is bees together with me, that is we co-created the art. In my works, human consciousness combined with bees' consciousness is a key point. Of course, human consciousness is only the starting point of my works."

Ren Ri: Yuansu II left side (Photo copyrighted and courtesy of Ren Ri)

Nurit Bar-Shai also shared with us very profound reflections on the matter: " *In my practice I mostly work with in vitro micro-biological systems, which consist of single cells that grow and operate collectively as a multicellular colony (including bacteria, cell culture, slime mold, fungi, etc.). Each and every biological system I work with requires me to develop a deep understanding and skills specific to that organism; consequently, the relationship takes on new shapes and forms.*
There is something very interesting about working and actually collaborating with living organism. On one hand it requires proficiency in lab-work and with tools, and of course also requires learning a lot about the organism. Yet life is chaotic and not necessarily as planned and beautiful, and seemingly in total control as Art – a glimpse to life – disguised so well. Life is messier than any artistic vision or plan we make. Adding a living system, with its own necessities and desires, to the triangle art- artist-viewer, invites spontaneity and the lack of control over the final result. This place between complete control and guidance to arbitrary or even sometimes having to give up to chance all together, is a unique place to be at, especially for an artist. On one hand, it is a goldmine opportunity to explore new territory, and on the other, it is a very risky act. It's a place, which seems to be contradictory to the artistic act, since the artwork itself demands control and defined rules. While the need for acceptance of the unknown, of randomness, surprise or crisis is inherent in the process. In this type of relationship, once I define the framework of my artwork, the autonomous biological system takes over. These living systems contain time, motion and free will, which is external to mine. Thus every act on my behalf, in addition the environmental settings, directly reflects on this relationship and accordingly the final result of the artwork. Introducing new variables to a working system would in turn become part of my artistic vocabulary, which is integrated into the scientific one. These relationships between the behavior (decision making) and the structure (designed habitats) are greatly part of my research and artwork. Working closely with biological systems and adopting new vocabulary into my practice, I appreciate how biology as a medium holds within itself questions that no other medium does. In addition to ethical or philosophical inquiries, it offers to raise hard and difficult questions about life, death, decay, natural vs. artificial, control and authority, self-assembly, collective vs. individual, collaboration, altruism and social behavior. With that in mind, biological systems introduce to the Arts dilemmas in ways that no other media have done before. Artists who employ biological systems into their work unavoidably engage with ethical dilemmas and hold great responsibilities simply by practicing it. Scientists too, cannot perform research with certain animals without getting permission, which is often given under very strict conditions.
I'd like to believe that, just like in every other artistic practice, artists working with biological systems are highly critical and question both their own actions as well

as the systems that we live in and hold both accountable. In fact, I find it that often their work with biological systems raise awareness towards the ethical, moral, political practices of society just as much about exploring and sharing its wonder and aesthetics. Eventually if the practice by artists and citizen scientists inspire us to learn more about nature and be humble towards nature, while being critical about human interventions, or ask important questions about concepts and terms that are currently reshaping our beliefs and perceptions, such as How we will define life? What is a living system? What makes us human or non-human? What is Natural? than we have done a great deal. But yet to do more."
Lastly, **Saša Spačal –** a post-media artist, that sees her artworks as components of technological ecosystems that relate more with being human than with using old or new media- gives a beautiful holistic view, seeing all living forms interconnected, interacting and communicating:
"*My main fascination is the complexity of life forms and their interactions, connections that make up the environment. Time and time again when I look at my work I see one recurring theme: connections. I first realized this while I was writing an article about my work for the book Experiencing the Unconventional. Science in Art [4] and conceptualized the idea of connections continuum. In my view, all of this systems – biological, technological, social, artistic etc – are closely interconnected and co-dependently intertwined in the connections continuum. Everything emerges and resides in the connections continuum on different planes however connected to everything else in the network. Our artworks are like organisms that are part of technological ecosystems that humanity built and as such, they cannot be realized with specific media, that is why I see myself as a post-media artist. Since our artworks emerge as a materialization of certain concepts, especially with the use of biological material, they do not always have the same representation or media in every exhibition.*"

Saša Spačal: Touchscaping (2017). Saša Spačal and Slavko Glamočanin (Photo credit: Matic Zorman / Layerjeva House and Cona Institute photo archive.)



Saša Spačal: Touchscaping (2017). Saša Spačal and Slavko Glamočanin (Photo credit: Matic Zorman / Layerjeva House and Cona Institute photo archive.)

For us it is remarkable to finish with the impressions of a couple of artists (Saša Spačal and Nurit Bar-shai) that profoundly reflect on how important are the concerns towards the now-human collaborator, and purpose of an integrated and connected vision of their art in synchrony within the whole earth's ecosystem. It's even more remarkable, that three of the artists who think their practices entitle a proper collaboration or co-creation are artists working with simpler life forms, thereby challenging the preconception that we are only concerned about our relationships with more complex organisms. Maybe because of this reason they are even more aware of the ethical conundrums. Beyond the criticism or scrutiny these artists working with living organisms may have to endure, they work is crucial for reshaping our relationship with our damaged world.

…….

Notes and References:

[1] Biosemiotics is a bridge between biology and linguistics. According to the Oxford Dictionary of Biochemistry and Molecular Biology, Biosemiotics is "the study of signs, communication and information in living organisms.

[2] In this context, information is defined as knowledge sent or received concerning a particular fact, circumstance, or situation. Knowledge is an acquaintance with facts, truths, or principles, gained from study or investigation;

or it may be general erudition, conversance, acquaintance, or familiarity gained by sight, experience, report, or perception. At its most basic, knowledge may be simple conscious or unconscious awareness of sensory stimuli gained by an organism from a transmitter that is near or far away.

[3] https://exploringtheinvisible.com/2016/09/27/self-portraits-the-microbiotic-paintings/

[4] “Experiencing the Unconventional. Science in Art”, Theresa Schubert and Adam Adamatzky. World Scientific Ed., 2015.

……..

Lula Criado and **Meritxell Rosell** are two multidisciplinary editors, writers and curators.

Their work lays at the intersection of Art, Science and Technology, capturing the zeitgeist of the 21st century.

With academic scientific background (Molecular Biology and Genetics) – which they combine with Trend Analysis and Philosophy- they run CLOT Magazine, an online platform dedicated to Art explorations into Science and Technology.

Through **CLOT Magazine** they curate intellectual content, generate debate, research and decode trends in areas of: biomedia, body architectures and cyborgs, sound art, interfaces, artificial intelligence and virtual reality and generative art, among others.

They have covered festivals and events organised by renowned cultural references like Sónar Barcelona, Unsound Krakow, CTM Berlin and ICCMR Plymouth, curated panel discussions (LASER/Leonardo at Central Saint Martins) and given talks and lectures for the Bioarchitecture and Genetics MA (Barcelona, Spain) and School of Textile (Boras, Sweden).

www.clotmag.com

Art, Consciousness, Creativity, Nature, Science

ABOUT LULA CRIADO AND MERITXELL ROSELL

Lula Criado and Meritxell Rosell are two multidisciplinary editors, writers and curators. Their work lays at the intersection of Art, Science and Technology. With academic scientific background (Molecular Biology and Genetics) – which they combine with Trend Analysis and Philosophy- they run CLOT Magazine, an online platform dedicated to Art explorations into Science and Technology. Through CLOT Magazine they curate intellectual content, generate debate, research and decode trends in areas of: biomedia, body architectures and cyborgs, sound art, interfaces, artificial intelligence and virtual reality and generative art, among others. www.clotmag.com

View all posts with Lula Criado and Meritxell Rosell →