

21<sup>st</sup> International Conference  
Consciousness Reframed 2019

SCHOOL OF ARTS

# Sentient States: Bio-mind and **Techno-nature**

## Program and Abstracts



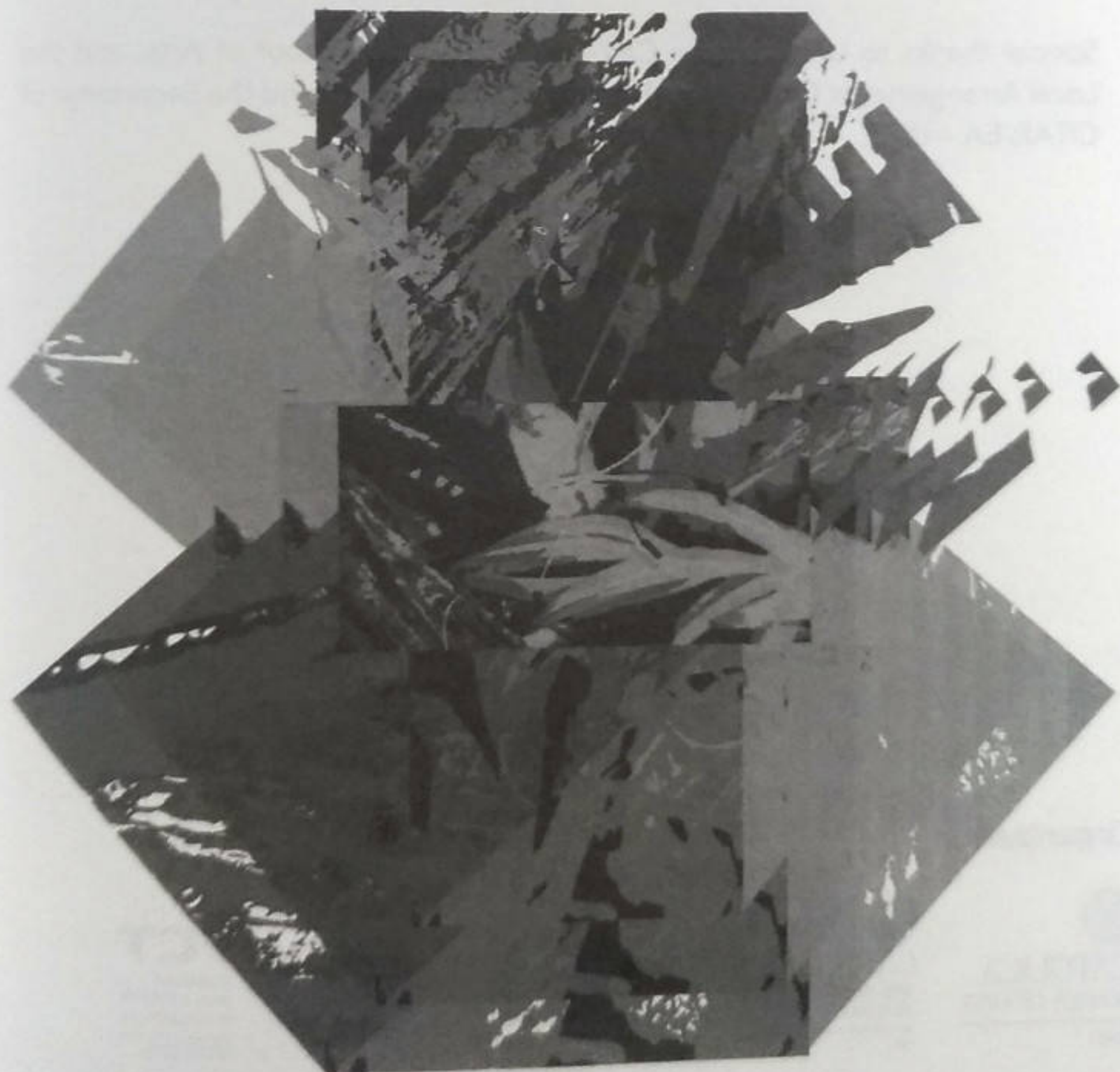
June 6<sup>th</sup> - 8<sup>th</sup>, 2019 Universidade Católica Portuguesa - Porto, Portugal

21<sup>st</sup> International Conference  
**Consciousness Reframed 2019**

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# **Sentient States: Bio-mind and Techno-nature**

## Program and Abstracts



**June 6<sup>th</sup> - 8<sup>th</sup>, 2019** Universidade Católica Portuguesa - Porto, Portugal

**Program and Abstracts** for the communications read at 21<sup>st</sup> International Conference *Consciousness Reframed 2019* "Sentient States: Bio-mind and Techno-nature" from June 6 to 8 2019 at Universidade Católica Portuguesa - Porto, Portugal

Edited by members of the Organizing Committee:

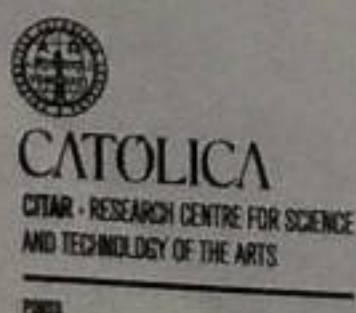
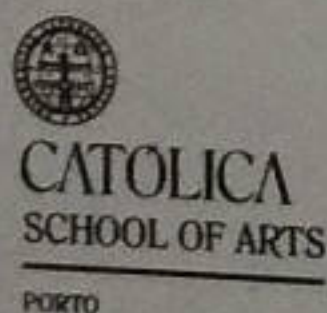
Roy ASCOTT (Director); Cristina SÁ (Chair); Rui TORRES (Chair); André SIER; André BALTAZAR; Diogo MARQUES (Exhibit Curator); José Vasco CARVALHO (Exhibit Curator)

Cover Image: André Sier

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EVENTOS Católica Porto; Secretariado CITAR/EA-UCP

## "Sentient States: Bio-mind and Techno-nature"

The conference will look at the nature of artificial thought, and forms of intelligence in nature - charted through aspects of transdisciplinary creative practice and theory in our planetary culture.

Just as new paradigms of feeling and communication are beginning to form around our interaction with life at all levels of our perception, from plants and trees to fungi and bacteria, we may see matter as inhabited mind, media as necessarily moist, and technology as a tool of the Tao.

Thought is spreading through all our systems, places and products. We need cities that are not only smart but sensitive: schools that think, roads that remember, buildings that feel. art that is as much extra-sensory as interpersonal.

Our consciousness is both reframing and reforming.

Roy Ascott

Welcome to CR2019 Conference.

The Research Center for Science and Technology of the Arts (CITAR) at the School of Arts, Universidade Católica Portuguesa, is proud to host the **21<sup>st</sup> Consciousness Reframed Conference: Sentient States: Bio-mind and Techno-nature**, and to collaborate with the Planetary Collegium in continuing these charismatic conferences.

We are hosting 62 talks, 11 artistic installations and 4 posters of participants from 22 countries. Therefore – together with each one of you and keeping the tradition of past editions - we created the conditions for this encounter to be a forum for trans-disciplinary inquiry into art, science, technology, and consciousness. You come from diverse fields of knowledge and have different careers: musicians, performers, intermedia artists, writers, architects, doctors in medicine, microbiologists, computer scientists, to mention but a few. Your inquiries are diverse too: artificial intelligence, machine learning, smart cities, gene transfer, interspecies communication (plants and animals), quantum computing, art and medicine, spirituality, as well as diverse interdisciplinary perspectives. Some outcomes are scientific papers, some are artworks, some are both, others are in between. All this richness is about to be unlocked and shared in the next few days. One can only imagine the fabulous interconnections that will emerge from it.

Besides thanking the authors for the high-quality submissions, we also want to acknowledge the careful reviewing process by our scientific committee, the enthusiasm of the session chairs and, of course, the generous contributions of the keynote speakers.

We wish you all an inspiring conference.

The organizing committee

## André SIER

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### Bio-electronic Aggregates on Neon-Paleolitikos Strata

Electronic machinic phenomena yield fascinating links with biological processes. Either in micro-structure of binary encoded information – bytes on media –, to the processual flow programs execute on hardware while operating it. Observing micro-electronic worlds as living entities, electronic voltages running throughout electronic architectures pipelining data to memory registers, operating systems executing programs on electronic substrates, data flows taking place in machines and in communications protocols within networks. Static art-sci constructs explore and visualize these observations as 2D drawings (Neon Paleolitikos Drawings, 2017) or 3D sculptures (Binary/Biological Sculpture Series, 2018), creatively exposing their inherent rhythmic organization of information, while dynamic installations propose immersive interference mechanisms which attempt user entanglement in non-human environments (Phoenix.Wolfanddotcom.info, Wolfanddotcom, Half-Plant, 2017). From a couple of videogames, set in a post-anthropocene epoch, where we fly-play phoenix embodiment simulator and hunt within bio-electronic wolf-packs building a network, using interactive immersive electronics as bridges towards non-human-otherness, animal-embodiment, cathartic gameplay. To an electronic-plant, broadcasting a wi-fi access point, operated by connected users smartphones, partly micro-electronic processes, partly micro-biological voltages, combined through DNA genetic algorithms and user interference, exposing its data as sound which is fed-back to the Half-Plant as stimulus. This research proposes a look at bio-electronic aggregates on Neon Paleolitikos strata. After the Anthropocene, Neon Paleolitikos is an imaginary epoch dating since the decline of mankind until the zenith of bio-electronic life-forms: operational symbioses combined amongst ruins of silica, transistors, algorithms, cells, plants, animals, electricity.

Keywords: Bio-electronics, cyber-environments, interactive electronic arts, non-human embodiment, human/non-human computer interfaces, neon-paleolitikos, mythology.

#### Biographical note



**André Sier** works artistically with code and interactive media at s373.net/x studios, where he combines videogames, installations, painting, sculpture, music, mathematics and computation into objects and experiences of electronic arts, merging mythology, interfaces, generative interactive space-time continuums, non-human human art-science constructs. Awarded artist at The New Art Fest (2017), three times at Lisbon Maker Faire (2014, 15, 16), Bienal de

Cerveira (2009) and Jovens Criadores (2006). In the past 22 years has produced objects and serial interactive work that playfully unravel time and space relations, synthesized on electronic substrates, shown at over 27 individual national and international exhibitions, over 100 collective events. André Sier is an electronic artist trained in sciences, arts, computing, with a degree in philosophy, lecturing in electronic arts at Uévorá and Fbaur, PhD candidate at Planetary Collegium.

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## Half-Plant (2017)



Half-Plant is a bio-electronic hybrid from the Neon Paleolitikos era within the series Wolfanddotcom. Partly micro-electronic processes, partly microbiological voltages, it is an interactive bio-electronic work collectively operated by smartphone which broadcasts a WiFi Access Point (NeonPaleolitikos network) that allows whomever connects and navigates to [half-plant.com](http://half-plant.com) (192.168.12.1:8000) to control an interface which allows to mix the different genetic processes which compose the hybrid: combinations of electronic and biological micro-fluctuations. The raw spectra from the electronic and biological processes is transformed in electronic and biological DNA, which on their turn are combined through genetic algorithms in order to make a bio-electronic being. By using the remote interface, the audience may operate as a dj, collectively and autonomously, controlling the volumes, the genetic algorithms, mutation percentages, the reading speeds of the DNA of each electronic, biological and bio-electronic components, exposing its data as sound which is fed-back to the Half-

Plant as stimulus.

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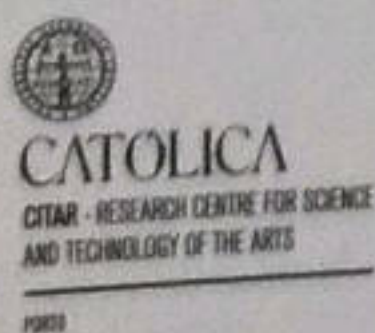
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