

Timescales ecologies. Balance-Unbalance and how to help change the cultural behaviour facing the environmental crisis through art-science.

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Abstract

It can be difficult to acknowledge our own fragility. The equilibrium between a healthy environment, the energy our society needs to maintain or improve its usual lifestyle, and the world's interconnected economies can pass more quickly than expected from a delicate balance to an entirely new reality where human beings would need to be more creative than ever before to survive. The frequency and severity of certain weather and climate-related events around us are increasing, and the ability of human beings to modify our adjacent surroundings has turned into a power capable of altering the planet. Do the electronic arts have a role in all this?

Keywords

Environment; climate change; biodiversity; Red Cross Climate Centre; art-science; art and environment; eco-action; ecology; transdisciplinarity; timescales.

While We Thought We Were in Balance

When it comes to thinking not only of us but of what some call the common good, questions arise about what it is, who defines it, how, and when, among other aspects.

It is challenging to recognize fragility. To think that for food to reach the supermarket, the necessary events are sometimes dependent on a complexity that is unthinkable for most consumers. To appreciate a piece of music that we can collectively perceive as being of quality, each instrument needs a history, its performer of years of intellectual and biomechanical training, and the work of a creative composer is of fundamental importance, of course, too. And that for having high-speed Internet at home, the chain of efficient pieces of technology that need to work is astonishing. The individual actions and the long series of events that eventually lead us to have systems that work to help us solve problems and live better often pose fundamental conceptual issues.

The humans' delicacy and the systems we have been building through millennia become clear when abruptly, the usual and traditional reality is transformed and collapses. Individual and collective consequences exist when the system we trust stops behaving as we wish. A health crisis on a planetary scale affected millions of human beings shortly before I wrote these lines. While many people wanted to return to the previous state, others saw what was happening as a

turning point that could substantially improve our lives. We can also consider that what was happening put us all in a unique social and citizen laboratory more than ever.

The human species faces multiple challenges, and global changes due to the effects of an increasingly complex environmental situation are among the major ones.

An idea to promote and develop activities to help us reflect and carry out actions focused on improving our relationship with the planet we inhabit was crystallized in 2010. When we need solutions, we look to engineers, doctors, lawyers, and physicists, not composers or sculptors. However, when we try to design a possible future, understanding our present better by studying the past, our ancestors' art and culture are what mostly remain to understand and learn from them.

The work between experts in different disciplines, with a broad criterion that would allow and facilitate the construction of a transdisciplinary research-creation culture, could be a peaceful and, at the same time, a revolutionary path of development, increasingly harmonious. Thus, the *Balance-Unbalance* (BunB) international project arises to encourage the encounter between scientists, artists, engineers, experts with varied experiences, and representatives of non-governmental organizations who look for new collaborations to reflect on the future. And we know those reflections need to lead to critical actions since the deadlines are shortening.

New Approaches to Face Growing Problems

We are living in a world reaching a critical point. The equilibrium between a healthy environment, the energy our society needs to maintain or improve its usual lifestyle, and the world's interconnected economies have recently passed from a delicate balance to a new reality, where unbalance seems to be the rule.

Traditional disaster management approaches are not enough to deal with the current problems and rising risks. New forms of collaboration are needed to inspire people and organizations to link knowledge with action.

Some ideas from Buckminster Fuller, such as "You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete," are clearly aligned with the proposals that form the backbone of the projects briefly outlined in this text.

Artists could inspire new explorations and contribute with innovative perspectives and critical thinking to actively

participate in solving some of our major challenges, such as the spiralling environmental crisis. We need to develop creative ways to facilitate a paradigm shift toward a sustainable tomorrow. Creative thinking, innovative tools, and transdisciplinary actions could produce perceptual, intellectual and pragmatic changes.

One of the initiatives that aim to use the media arts as a catalyst to generate a deeper awareness and create lasting intellectual working partnerships to face the many facets of the environmental crisis is: The *Balance-Unbalance* international project.

Balance-Unbalance. Art-Science/Environment

The international conference project *Balance-Unbalance* explores the intersections [art, science, and technology] between nature and society, and the symbiosis needed to study, understand, and act in the light of ecological threats.

The first conference was held in Buenos Aires, Argentina, in 2010 and was hosted by the National University of Tres de Febrero (UNTREF). Papers were delivered by artists, a representative of the National Secretary of Environment and Sustainable Development of Argentina, experts and graduate students from different universities with chemical, agricultural, and environmental engineering backgrounds (specialists in pollution, renewable energies and food technologies), a lawyer, a sociologist, and an astrophysicist, coming from Argentina, Brazil, Canada, and the US.

The second *Balance-Unbalance* was held in 2011 at Concordia University in Montreal, Canada. In 2013, the third edition of *Balance-Unbalance* showed the potential of the actions carried out. This time, the conference was held at the Noosa Biosphere, an ecological reserve recognized by UNESCO. This biosphere is a dynamic learning laboratory for sustainability in one of Australia's most pristine and diverse environments. An e-book with some of the papers presented at that conference was published and can be downloaded for free [1]. The conference theme: "Future Nature, Future Culture[s]," aimed to challenge our expectations of Earth, provoke our understanding of nature and inspire our actions for a sustainable future. *Balance-Unbalance* proposed that we ask ourselves: "What will we be calling 'nature' in 20, 50 or 100 years? How will we live in the future? How can creativity help us shape a society of understanding and interconnectedness? What role could transdisciplinary thought and action play in reimagining a sustainable future? Our limited knowledge of life can be expanded, but to do so, we need better ways to understand each other. This includes a deeper awareness of how different human societies can comprehend cultural differences and synergies" (quote from the *Balance-Unbalance* 2013 website). As in previous editions, [electronic] art was not only part of the papers presented in the form of theoretical analysis and proposals but also a substantial component of the event. Also, in the Noosa Regional Gallery, the Leweton Cultural Group performed traditional music and dance from Vanuatu's endangered islands. We were learning how *Balance-Unbalance* could help to give voice to some of the many underprivileged.

The MIT Press has published fifteen articles on research and creation projects presented during this edition on Leonardo, the Journal of the International Society for the Arts, Sciences and Technology, in a special section devoted to *Balance-Unbalance* [2].



Figure 1. Cover of the *Balance-Unbalance* 2013 e-book. The conference was held at Noosa Biosphere Reserve, Australia.

The fourth edition of the *Balance-Unbalance* conference was held in 2015 and hosted by Arizona State University. Its main focus was "Water, Climate and Place: Reimagining Environments." The subject reflected the particularly relevant circumstances, considering the conference's location was in the southwestern desert of the United States. In 2016, *Balance-Unbalance* was hosted by the University of Caldas in Manizales, Colombia. This city is part of the coffee-growing axis and is built in a mountainous region with seismic instability. A rich, changing and challenging environment, with a subtropical highland climate and an average of 1,500 mm of precipitation a year, allowed participants to have a contrasting experience considering the places where the previous conferences were held. The program included scientists, artists, designers, architects, leaders from the program Sonidos de la Tierra (Sounds of the Earth) mixing music education with entrepreneurship, the Land Art Generator

Initiative collective, and organizations such as the Red Cross/Red Crescent Climate Centre, among many others.

The 6th edition of the BunB conference was held in the UK and was hosted by Plymouth University in collaboration with North Devon's UNESCO Biosphere Reserve, Beaford Arts, the Eden Project, and Fulldome UK. A full visit to the Eden project, a complex dominated by two huge adjoining domes (one of them emulating a rainforest environment, and the other a Mediterranean one), offered an exceptional opportunity for the participants to exchange ideas, also helping to generate a growing sense of community [3].

Balance-Unbalance was held in The Netherlands in 2018 and focused on "New Value Systems - Sustainability and social impact as drivers for value creation." It was hosted by The Patching Zone with activities in V2_Lab and the Het Nieuwe Instituut of Rotterdam [4].

The Proceedings are available online for download from the conference's website [5].



Figure 2. Proceedings of *Balance-Unbalance* 2018. The event was held in Rotterdam, The Netherlands, and focused on “New Value Systems.”

In 2018, Leonardo journal published a selection of 27 papers from the 4th (2015, USA) and 5th (2016, Colombia) editions of the *Balance-Unbalance* Conference [6] [7].

Today’s complex and uncertain context has brought a different approach to producing new *Balance-Unbalance* actions, avoiding postponing a new opportunity to induce reflections and produce changes related to our decisions and possibilities regarding the natural environment. The conference was held in 2021 using a blended modality (papers, roundtables and workshops online, plus an in-person exhibition in Valencia), joining efforts with organizations and institutions from Spain and Brazil, among other countries. The same year, *Balance-Unbalance* also produced events during the CIMA Festival in Colombia and Ars Electronica, Austria.



Figure 3. Poster of one of the 8-session *Balance-Unbalance* series held online in early 2022 in collaboration with University Jorge Tadeo Lozano, Colombia.

In 2022, a series of 8 sessions were organized by *Balance-Unbalance* in collaboration with Jorge Tadeo Lozano University, creating a Chair in Art and Climate that brought together leading thinkers such as: Rasa Smite, Peter Stoett, Rejane Cantoni, Janot Mendler, Adam Hyde, Oonagh Fitzgerald, Denisa Kera, Pat Badani, Pasha Clothier, Suzanne Thorpe, Omar Dario Cardona, Nina Czegledy, Karla Brunet, Danielle Siembeda, Andrea Polli, Andres Franco Herrera, Michael McDonald, Olga Mink, Desna Whaanga-Schollum, Linda Carroli, and Luiz Alberto Oliveira, among others.

Also, some regular classes on Art and Climate started at the same university in Colombia, where students from multiple programs (e.g., Arts, Design, Marketing, Photography) had the opportunity to learn from scientists, artists and engineers while creating works related to their research on climate change and connected problems.

In 2023, among other activities, *Balance-Unbalance* presented "Balance-Unbalance ...and the magic lamp!", a round

table focused on "How do we improve our immediate future?" joining UN award-winning engineer and disaster risk assessment expert Omar Dario Cardona, chemical engineer Alis Pataquiva, astrophysicist Roger Malina, and artist Christa Sommerer. The event was held as part of the International Image Festival in Bogota.

Even if humanity can overcome pandemics and wars, other significant challenges are coming fast (such as climate change), and we need to be informed, reflect, and act soon.

As a result of *Balance-Unbalance*, other projects emerged, such as: 'art ∞ climate,' a global contest for the creation of sound art miniatures carried out in collaboration with the Red Cross/Red Crescent Climate Center (RCCC) and the Center for Research and Experimentation in Electronic Arts (CEIARTE) of the National University of Tres de Febrero, in Argentina. Every edition of the contest has focused on different matters related to the environmental crisis, always following the guidelines proposed by the RCCC. Some topics addressed in the 'art ∞ climate' contests have been: Mosquitoes; Sea Level Rise; Thresholds (on Forecast-Based Financing); Zero Poverty - Zero Emissions; and Timescales, among others.

All works selected through these contests are available online through SoundCloud, free for use under a Creative Commons license.

EChO is another project that originated from Balance-Unbalance. This research project seeks to help catalogue and analyze efforts by media artists to represent the causes, nature, extent, and possible solutions to environmental problems ranging from climate change-related issues to hazardous waste disposal, habitat destruction, the introduction of invasive species, and many others. The resulting database will: create links between artists' projects and actions, and between artists and possible partners, such as research groups, humanitarian organizations, policymakers, artists' associations, opinion formers, technology innovators, etc. The outcomes of this research have the potential to convert limited-reach projects with significant potential into something that could influence an international community and eventually develop and increase its original scope.

Conclusions

In this context of global threats, the [media] arts and artists can help. Everyone has a role in the construction of the future, and artists, too. We must search, investigate, reflect, and act. We can create and invite others to analyze, engage, envision, and produce changes. It is not possible to wait longer or to delegate personal responsibilities.

A large part of the population lives in uncertainty [regarding their basic needs], and many people barely survive. When *Balance-Unbalance* started years ago, it probably appeared to be a naive, good-will-based, utopian initiative trying to join knowledge and forces from various fields by using e-art as a catalyst to face a problem we all share: the environmental crisis. However, by bringing people from very different sectors of our society to think together and facilitate multi, inter, and transdisciplinary collaborative

project developments, *Balance-Unbalance* and its associated initiatives ('art ∞ climate' and EChO) are turning feasible to connect artistic creation and tangible tools for change. *Balance-Unbalance* has been contributing to making social transformation happen.

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Author Biography

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