

Art|Science and the New European Bauhaus

The NEB presents an urgent call to action, rallying, finally, all of European societies and the growing European *polis*, to contribute actively to the greatest challenge humanity has faced in its entire existence. While so far the NEB has been primarily a topic of discussion in the design/architecture communities, we believe that it is only with the strong participation of artists and scientists, along with colleagues from design and engineering, that NEB can realize its vision for a more sustainable, beautiful and inclusive habitat for humanity. As practitioners of SciArt¹ we think that the NEB creates the opportunity to push these practices from niche to public field, thrusting SciArt beyond its conventional spaces (be it a lab, studio, exhibition or performance). It is a good moment to relate to the plurality of commons, communities, collectivities, regions, and countries with decades-long experience of bridging differences in praxis – finding similarities of method, combinations of disciplines allowing to carefully map interstices of knowledge and discover newness. SciArt practitioners have hands-on experience in implementing artistic projects within scientific set-ups and vice-versa, often relating to a diversity of stakeholders, provoking new perspectives on exploration, introspection and behaviour - fostering meaning, emotions and values -- both on an individual and societal scale.

Born amidst war and the death of civilisations, the historical Bauhaus displayed a strong idealistic tension in troubled times. We think that while current covid-times are dire, all the elements are present to take up the legacy of the Bauhaus as a new reflexive transdisciplinarity in what has been called by designer Neri Oxman *The Age of Entanglement*, to push decidedly into uncharted territories and start shaping an as yet unknown future. The SciArt movement has been showing this new direction, with growing strength, since the middle of the last century. Its legacy of method and invention constitutes a precious toolbox for the NEB, pointing ideally and conceptually to a reconversion of existing industries also with the contribution of artists, breaking the tired moulds of the past. Transcending traditional discipline boundaries, mustering blends of methodologies and tools from any given discipline, SciArt practitioners are ready to not only redesign buildings and urban spaces, but also to imagine and design possible futures and the processes needed to get us there. Coupled to a strong capacity of devising strategies for public engagement – of which Olafur Eliasson is but one example – SciArt can also help finding a balance in the NEB triad of sustainable, beautiful and inclusive. It can help the reflection as to how to put the Green Deal squarely in front of the European *polis*, contributing to its wider acceptance, also with a renewed pedagogy, one of the cardinal strengths of the historical Bauhaus. While the triad seems to us intriguing with great potential, we must make sure it is realised with core European values capable of addressing any threat of social disruption looming in the coming transformation, including anti-scientific populism or a public discourse not based on factfulness. As the philosopher Bruno Latour already eloquently stated, we as

¹ Many terms are being used with different connotations, such as SciArt, ArtScience, art-science, artsci or science-art, art and science collaborations. We will use them here as a general term indicating all research-based collaborations between the arts and the sciences.

a global civilization must bridge science with art, both with policy and society in the very short term, to heal a rift between human and nature that has already cost us and the planet dearly¹.

SciArt practices and communities provide a promising framework for the NEB: to understand how and where the know-how, processes, and added values developed by these specific transdisciplinary modes of engaging/creating can contribute to the development of a more inclusive, sustainable and beautiful Europe. With SciArt, museum visitors can become volunteers in a scientific experiment delivering data on pandemics²; the investigation into the blackest material of the universe by SciArtist Frederik De Wilde pushes to create a new procedure with nanoparticles that then can be applied to improve industrial metal coating³; lab-developed sensorial skins for beehives with bacteria lighting up when parasites invade the colony, as developed by bioartist Annemie Maes, can help the bees and their wardens in their struggle against these parasites⁴; while other bioartists are experimenting widely with new materials, from fungi to grasses and beyond⁵. Ten years before the first lab-grown hamburger, artists Oron Catts and Ionat Zurr proposed the same in 2003 with their *Disembodied Cuisine*⁶; Tomás Saraceno explores new ways of interacting with our co-citizens the spiders by having them collaborate with him⁷, while Neri Oxman announces a future in which silkworms engineer objects, while things decay and return organically to nature⁸. These research-based artists/designers/architects have a long track record of exploring improbable avenues that then become reality, of posing ethical questions long before society acknowledges them, or implicating large swathes of society into huge public manifestations (like Autogena and Portway with their *Foghorn Requiem*⁹ or Christo with his many land art happenings).

The original Bauhaus was also premised on a new pedagogy which brought different disciplines together around the exploration of different materials (wood, glass, metal, sound, colour etc, see original Bauhaus diagram), naturally bringing architecture, design, science, art, engineering into creative dialogue. In establishing the New European Bauhaus, we have the chance to avail of an extraordinary new palette of materials, from mycelium leather to algal facades, nanomaterials, intelligent fabrics etc., as well as a challenge to create new materials e.g., reinventing cement). If this is to have lasting consequences, we need to design a new transdisciplinary pedagogy around these new materials, and involve artists and scientists in this exploration alongside architects and engineers. Ideally this could be achieved through a series of partnerships between leading art/design schools and

¹ Bruno Latour, Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern, *Critical Inquiry* 30 (Winter 2004), 225-248.

² The *Infectious: Stay Away* Exhibition at Science Gallery in 2009.

³ Frederik De Wilde, *NanoBlck*, see <https://frederik-de-wilde.com/project/nanoblck-sqr1/>

⁴ Annemie Maes, *Sensorial Skin for the Guerrilla Beehive*, see <https://annemariemaes.net/works/bee-laboratory-works/sensorial-skin/>

⁵ William Myers, *Biodesign, Nature Science Creativity*, New York: The Museum of Modern Art, 2018.

⁶ See <https://www.symbiotica.uwa.edu.au/residents/catts> - for the *Disembodied Cuisine*, see <https://tcaproject.net/portfolio/the-remains-of-disembodied-cuisine/>.

⁷ See <https://studiotomassaraceno.org/hybrid-webs/>

⁸ See <https://www.media.mit.edu/people/neri/overview/> - for the exhibition of her work *Material Ecology* at MoMa with introduction by Laura Antonelli, see <https://www.moma.org/calendar/exhibitions/5090>.

⁹ See <https://www.autogena.org/work/foghorn-requiem>.

leading scientific/technical universities, along with key “interface” organizations, that involve and expose the public to the process. This combination would not only be virtual but would involve all the spontaneous and serendipitous connections and collaborations that we know happen in physical spaces, like we have seen in the past, from Bauhaus to Black Mountain College to the E.A.T (Experiments in Art and Engineering), which began at Bell Labs in 1964 initiated by engineers Billy Kluver and Fred Walhauer and artists Robert Rauschenberg and Robert Whitman, to the Ars Electronica Festival which began 1979.

As highlighted by these examples and by an ever-increasing number of reports and papers internationally¹, the competences and practices generated throughout art-science collaborations provide:

- i) Years of experience working at the interstices of knowledge, in-between cultures, trans-lingually, transdisciplinary, outside the habitual, and especially engaging with citizens to build communities;
- ii) Bridges over knowledge gaps (creating culture!) through intriguing works that can exemplify scientific principles, simple phenomena, or a startling recombination of science and art. While kindling curiosity, these works create novel forms of engagement and education as a potent tool against populism, harbingers of a totally different yet more vital pedagogy of the future;
- iii) Exemplars – that is potent local and international examples – of work carried out at the interface of ways of knowing/emotion/research/engagement/accessibility. At the crossroads of art, culture, social inclusion, science and technology, these works push the boundaries and explore new territory, always combining and recombining various disciplines/methodologies/practices. The novel ways of engaging with reality and with the public are the result of an (as yet uncharted) *methodology* capable of devising new means of engagement on the basis of the project itself.

¹ Geoffry Crossick & Patricia Kaszynska, *Understanding the Value of Art and Culture, The AHRC Cultural Value Project*, Arts and Humanities Research Council, 2016. See also James Leach, 'Being in Between': Art-Science Collaborations and a Technological Culture, *Social Analysis: The International Journal of Anthropology*, Vol. 49, No. 1 (Spring 2005), pp. 141-160; Gloria Benedikt, *Science and Art for Life's Sake: How partnerships between artists and scientists can support the transformation toward sustainability*, Report IIASA, 2020; Claudia Schnugg, *Creating ArtScience Collaboration, Bringing Value to Organizations*, Cham, Springer Nature Switzerland AG, 2019. Also important is a plethora of recent articles in various scientific journals, starting with *Nature* but also many other journals, see, e.g., in a random example of recent months: Shona K. Paterson, Martin Le Tissier, Hester Whyte, Lisa B. Robinson, Kristin Thielking, Mrill Ingram and John McCord, Examining the Potential of Art-Science Collaborations in the Anthropocene: A Case Study of Catching a Wave, *Front. Mar. Sci.*, 19 May 2020; [Editorial, Collaborations with artists go beyond communicating the science](#), *Nature*, 590, 528 (2021); Important is also Roger F. Malina, Intimate Science and Hard Humanities, *Leonardo*, Volume 42, Number 3, June 2009, p. 184; K. Hays et al., Creativity and Cognition in Extreme Environments, The Space Arts as a Case Study, in *Front Psychol.* 2020; Ingeborg Reichle, *Art in the Age of Technoscience: Genetic Engineering, Robotics, and Artificial Life in Contemporary Art*, Springer, Vienna, 2013. For new materialities, see e.g. <https://www.matters-of-activity.de/en/>.

- iv) Years of experience in integrating artists and creatives in scientific institutions, enterprises, and (more generally) integrating the artistic into the non-artistic worlds/structures. That is also: years of translation, of developing new languages, of exploring interstices, of defining new territories, of bridging estranged disciplines and creating improbable connections.
- v) Examples of projects that directly tackle societal issues (e.g. SDGs), in holistic and ablative ways¹, drawing on the engagement and knowledge of crowds. In these circumstances, the combination of science and art can become the midwife for public engagement.
- vi) Developing innovative solutions and products, ranging from an impressive variety of bioart experiments to a host of surprising illustrations of intertwined scientific/artistic/ societal realities.

Driving questions

What is the value of SciArt practices, research, and inquiry for society?

What are the positive externalities (to use a term from ecological economics) of the field? In what specific ways does SciArt provide meaning and culture, propagating a much-needed familiarity with transdisciplinary practices in the developmental trajectories of a community and its territory, including diverse outlooks on sustainability? In what way is it capable of kindling a sedated curiosity in researchers and of firing up a new purpose to art? It is our intention to contribute to these questions by word and action, continuing to create works and exhibitions (like the marvellous *Critical Zones* exhibition by Bruno Latour and Peter Weibel in the ZKM in Karlsruhe or the powerful crucible of science and imaginary that the shows of the Munich Biotopia museum draw on), but also by writing an article outlining a precise cartography of seven decades of SciArt experiments, including its potentialities for the NEB. We will propose a taxonomy of SciArt projects, and specific exemplars of SciArt that well adhere to the NEB spirit: projects developed by artists/scientists with an outlook to sustainability and bio-diversity. In the same manner, we are ready to collaborate in the creation of a number of “hubs” for the NEB, bringing together art/design schools, science/tech universities, and “interface organisations” to ventilate emerging concepts with the public, such as for example ZKM², Arts AT CERN³, Ars Electronica⁴, the Science Gallery Network⁵, S+T+ARTS⁶, Bozar⁷, Gluon⁸, Polar Aspect⁹, Invisible Dust¹⁰, etc.

¹ Designer Sean McDougall coined the term ‘ablative thinking’, as opposed to ‘dative thinking’. Going back to the Latin cases, dative refers to giving things to an audience – expertly created exhibitions, theatres, operas, plays. Ablative thinking refers to projects done *by* and *with* the community or that draw ideas *from* the public. See Michael John Gorman, *Idea Colliders, The Future of Science Museums*, the MIT Press, 2020, p. 108.

² <https://zkm.de/en>

³ <https://arts.cern/>

⁴ <https://ars.electronica.art/news/en/>

⁵ <https://sciencegallery.org/>

⁶ An initiative of DG CONNECT (<https://www.starts.eu/>)

⁷ <https://www.bozar.be/>

⁸ <https://gluon.be/>

⁹ <http://polaraspect.com/>

¹⁰ <https://invisibledust.com/about-us>

Since the early nineties, artists are closely engaged with scientists in the battle to contrast global warming, while applying a variety of means to push change. Through the NEB, the European Commission has the opportunity to further integrate this ceaseless, decade-long energy into the transformation heralded by the Green Deal. Much of this will pass through a revisitation of roles and responsibilities, from the merely evident (integrating artists as paid contributors to a variety of societal endeavours) to the imaginative (by creating opportunities for artists to invest and change public spaces or contribute to the re-engineering of [production] processes), with an outlook on informing policies and legal frameworks. We hope that in this manner, SciArt can support the NEB to meet the high expectations it has awoken in society.

Signed:

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Michael John Gorman	Founding Director Science Gallery Dublin & Science Gallery Network, Founding Director Biotopia, Munich
Ariane Koek	International Arts and Science Consultant, Producer, Curator, Writer, Founding Director of Arts at CERN
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Paul Dujardin	Senior Expert at the European Commission, Former CEO Bozar, Centre for Fine Arts, Brussels
Roger Malina	Arts science Researcher, Educator, Editor, Astrophysicist, Founder of the Leonardo, transdisciplinary journal
Teresa Retzer	Curator, ZKM, Karlsruhe
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Roberto Paci Dalò	Composer, Performer, Film-maker, Theatre Director, Visual and Sound Artist, Radio-maker and Author, professor for Exhibit and Interaction Design at UNIRSM (University of the Republic of San Marino)
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