

EDITORIAL: XCOAX 2020

 **ANDRÉ RANGEL**

Universidade Católica Portuguesa,
School of Arts,
Research Center for the Science and
Technology of the Arts
armacedo@porto.ucp.pt

 **LUÍSA RIBAS**

Universidade de Lisboa,
Faculdade de Belas-Artes,
Centro de Investigação e de Estudos em
Belas-Artes
l.ribas@belasartes.ulisboa.pt
<https://orcid.org/0000-0002-5492-807X>

 **MARIO VERDICCHIO**

University of Bergamo,
Department of Management, Information
and Production Engineering
mario.verdicchio@unibg.it

 **MIGUEL CARVALHAIS**

University of Porto,
Faculty of Fine Arts,
INESC TEC / i2ADS
miguel@carvalhais.org

Welcome to this special issue of the *Journal of Science and Technology of the Arts*, inspired by the Eighth Conference on Computation, Communication, Aesthetics & X, also known as xCoAx 2020, which was supposed to take place in Graz, Austria, but was moved online because of the COVID-19 pandemic.

During these last few weeks of the year, it is impossible to take a look back at 2020 without seeing the immense toll that the disease took on the whole world. However, one of the strongest rays of hope that feeds into our resilience is given by the joint efforts of researchers all over the world who are working at unprecedented speed towards effective cures and vaccines that might help us leave all this behind in the near future. A key factor in this planetary effort is technology: data sharing over digital networks has been crucial for the rapid dissemination of experiment results and discoveries. There is hope that technology will speed up our successful response to this health crisis, but from a cultural perspective the impact is already there.

The question on how digital technologies is intertwined with the arts and culture is not at all new. However, the lockdowns, the travel bans and the work from home imposed by the circumstances have certainly put all creative endeavours (including our own conference) to the test and gave us many new occasions for reflection on technology as an opportunity on the one side (in terms of computation, speed, connectivity) and as a limitation on the other (in terms of quality, practice, sociality).

All the articles in this special issue are contributions to this debate. Sage Jenson and Kit Kuksenok show how to create speculative complex biological systems by means of computer simulation and propose this technique as a new kind of composition and performance. Birgit Bachler extends the use of computational devices to the surroundings and proposes an Internet-of-Things that includes freshwater environments to support the ecosystem and local communities. When computational systems creep into the environment, they naturally end up meeting the humans in that environment. Antonio Pošćić and Gordan Kreković analyse that encounter from the perspective of creativity in music by means of generative live coding. Dejan Grba, in turn, goes into the depths of what makes a system generative, and explores how the combinatorial nature of computers can interact with human cognitive aspects to produce culture. Such interaction is not at all a smooth blending: Caterina Moruzzi shows us that there can be significant resistance in the public perception of the use of AI technology for creative purposes. Finally, Rodrigo Hernández-Ramírez warns us about the possible negative side effects of automation in creative endeavours, in terms of deskilling in the small, and inequalities and exploitation in the large.

This issue certainly will not end the debate on the pros and the cons of technology in the arts, but we hope that, especially in these extremely trying circumstances, it will contribute to shine more light on the importance of more inclusive efforts towards a general well-being, not only in terms of health but also in terms of arts and culture.