

Nora S. Vaage

When science and art worlds meet: reflections from a hybrid theorist's perspective

The talk will discuss the complexities of the idea of “artscience”, a concept that places the arts and sciences in contact, but also in stark opposition. I will address this question from my perspective as a theorist with a background in philosophy and art history, but with a tendency to study these phenomena ethnographically “in the field”, much like a social scientist and drawing on perspectives from Science and Technology Studies, and with a quite “hands-on” approach. In particular, I will share experiences from the development of NOBA – Norwegian Bioart Arena (see <https://noba.art/>), as well as MERIAN, the Maastricht Experimental Research In and for the Arts Network.

Dr. Nora S. Vaage is an art historian turned philosopher of art and culture, with a PhD in philosophy of science and ethics. From this interdisciplinary perspective she writes and teaches on a number of topics at the intersection between culture, society and technology. She does research on art that uses new technologies and has published on ethical challenges of using biotechnologies for artistic purposes, the difficult balance between autonomy and engagement, representations of science in art and what it means to produce knowledge within the arts. Nora is associate professor in art and media studies at Nord University in Norway, and lead researcher at NOBA – Norwegian Bioart Arena. She has previously worked at the University of Bergen, Norwegian University of Science and Technology and Maastricht University, the Netherlands.

Claudia Schnugg

The process and the outcome: A social scientific methods to understand artscience projects

Art-science or art-tech projects are more than one artistic piece that results from the process. Such projects are mostly embedded in a long process, artists are often engaging in a field or developing skills in the scientific or technological area over a long time. The realms of digital media art and bioart are a good example for that. Moreover, art-science and art-tech projects are transcending borders by bringing together disciplines that are not used to interact. Thus, these projects lead to collaborations between organizations or groups and individuals from the respective disciplines. Thereby, the process of this collaboration and joint engagement beyond disciplinary boundaries is an essential component that allows art-science and art-tech projects to produce successful outcomes and to lead into unforeseen directions. Theories and methodologies from social science and cultural science research help to better understand the dynamics of this process and thus to understand the value and see the impact of the projects beyond tangible artistic outcomes. This talk will elaborate on selected approaches from social science and cultural science research to do so, and provide a framework to apply this knowledge in practice.

Dr. Claudia Schnugg is an independent researcher and curator developing methodologies for innovation and meaningful interaction with the arts, science and technology. Her academic expertise builds on social and economic sciences as well as cultural sciences. As an advocate of artscience collaboration, she has been producer and curator of residency programs, and catalyst for numerous international artscience projects. Therefore, Claudia is working with leading scientific institutions, universities, tech corporations and cultural partners, such as Helmholtz Center Munich, Ars Electronica, Science Gallery, ESA ESTEC, Accenture and Pro Helvetia. In her academic career, Claudia has been Assistant Professor at Johannes Kepler University Linz, Visiting Scientist at Copenhagen Business School, the European Southern Observatory and the Art|Sci Center + Lab at UCLA. Her most recent book is “Creating ArtScience Collaboration” (Palgrave Macmillan, 2019).

Lioudmila Voropai

The Discourse on Interaction of Art and Science: Historical and Institutional Perspective

The paper analyses historical development of a discourse on interaction between art, science and technology and its representation by art and science institutions. It reviews the key concepts used for a theoretical and cultural legitimization of this “interaction” and implications of the “interaction”-discourse for a contemporary art practice. The “interaction”-paradigm had a pivotal role for a theoretical conceptualization of the New Media Art and brought into being a common in the late 80ies definition of the New Media Art as an “interdisciplinary synthesis of art, science and technology”.

This understanding has revived within the media art discourse an Ancient Greek conception of art as producing *téchne*, in which art was considered as a set of practical skills and ‘know-how’. Also other historical theoretical approaches and typological models were brought into discussion by art historians, curators and artists, such as the notions of “production art” and “artist-engineer” developed by Russian constructivists in the 1920ies (Alexander Rodchenko, Boris Avratov); an instrumental use of scientific methods for artistic purposes (Kandinsky, Bauhaus); the concept of “The Two Cultures” (C. P. Snow); the idea of an artist as “design scientist” (Gene Youngblood) etc. In particular the paper examines a paradigmatic shift from a modernist ideology of the art autonomy to the agenda of a practical use of art and artistic activity for scientific and industrial purposes within discourse on the interaction of arts and science.

Lioudmila Voropai is a philosopher, art critic, curator and artist. Currently she is a Professor for Aesthetics and Media Theory at the University for the Arts and Design Karlsruhe (HfG Karlsruhe, Germany). Her publications and research projects comprise critical theory, theory and history of contemporary art and new media art, institutional critique and sociology of art and digital culture. Her curatorial and artistic projects are mainly focused on artistic appropriation of various media formats and on artistic practice as a form of social and media criticism.

Ksenia Fedorova*Activating Meaning in Artistic Research*

The epistemic value of the projects in the field of art&science or technological art comes to a large degree from their methods: the tangible, metaphorical and often process-based ways to ask questions. The objects and interaction scenarios serve as entryways into certain story worlds and thus are supposed to speak for themselves. What is then the role of a meta-analysis of such pieces? How can theoretical framing activate and leverage the work produced by them? In this talk I take inspiration from philosophy and anthropology of science and focus on a verb-centered type of analysis. I will follow a question raised by Richard Serra in his project Verb List (1967-68) – literally a list of infinitives and states or conditions (of gravity, of nature): “How do you apply an activity or a process to a material and arrive at a form that refers back to its own making?”. The “material” in our case will be art installations, but also particular methods like diagramming, physical movement and mapping, which are used by artists and researchers. The meaning propositions can both stem from and reflect upon the works, thus contributing to understanding the dynamics between artistic creation and its context (be it an individual aesthetic experience, social and political situation, or scientific innovation).

Ksenia Fedorova is a media and media art researcher and curator, currently serving as Assistant Professor at Leiden University, NL. She holds a PhD in Cultural Studies (University of California Davis) and a PhD in Philosophy/Aesthetics (St.Petersburg State University, Ural Federal University). She is the author of *Tactics of Interfacing: Encoding Affect in Art and Technology* (MIT 2020) and the co-editor of *Media: Between Magic and Technology* (Armchair Scientist, 2014, in Russian), her other publications include articles in Leonardo Electronic Almanac, Media & Culture Journal, Acoustic Space, Dialog of Arts and other journals and edited volumes. In 2007-2011, she was the initiator and curator of the “Art. Science. Technology” program at the Ural branch of the National Center for Contemporary Arts (Ekaterinburg, RU). Ksenia’s research interests encompass media and media art theory and history, aesthetics, philosophy, techno-cultural and science and technology studies, with a specific focus on the effects of new technologies on human perception and interaction.

Galina Kondrateva*Essential Issues in Use of AI in Creation of Artworks*

Today, Artificial Intelligence is an emerging technology, mostly attractive because of its obvious benefits in economic activities: production, marketing, finances. It is associated with productivity, efficiency, and advancement.

Thanks to technological progress, the application of AI spread over the industries and processes, the so-called Digital Revolution. However, the concept appeared in the fifties with the Computing Machinery and Intelligence analysis concerning ‘Can machine think?’. The broad implementation of technology that users know as AI became possible with the rise of big data and the Internet. Nowadays, AI is used in healthcare, education, manufacturing,

retailing, and supply chain management. Governments support the adoption of AI as strategic technology.

Ethical issues of AI use in Arts were raised recently with renewed vigor. One of the biggest polemics started after the artist collective successfully sold for the first time in the auction the painting created by an artificial intelligence algorithm. The collective faced an authorship problem, as it has never been discussed before. There are polemics among philosophers, artists, art critics, collectors, curators, and academics on the ethical challenges of using this new technology in the process of creation.

This paper aims to study the use of AI in Arts by providing insights on the ethical issues from the point of view of artists, AI engineers, art critics in two cultural contexts: EU and Russia. In summary, the research questions address the use of technology in Arts, AI application in Arts, ethical issues, and the future of arts.

Galina Kondrateva has a Ph.D. in Business Management obtained at Paris-Saclay University. Today Dr. Kondrateva is an associate professor at EDC Paris Business School (France), a member of OCIRE (Observatory and Research Center on Entrepreneurship). Her research interests are in the marketing and the adoption of technologies, with a big part of cross-cultural comparison. Her research topics comprise analysis of users' behavior in the usage of mobile applications, telemedicine, blockchain, and Artificial Intelligence, including comparison across cultures. Before starting her academic career, she worked for ten years as an executive director in a marketing agency in Russia.

Kerstin Borchhardt

Between Science and Fiction: Experimental Ecologies in Contemporary Media Art

In the wake of the public awareness of ecological issues (Zapf, *Handbook of Ecocriticism*, 2016), the eco-fiction genre is flourishing in various media such as literature and films. Eco-fictions speculate on futuristic scenarios of post-natural networks between humans, non-human species and inorganic entities through the use of science and technology (Texler, *Anthropocene Fictions*, 2015). However, eco-fictional speculations are becoming increasingly important not only in popular culture, but in contemporary philosophy and art too (Haraway, *Staying with the Trouble*, 2016, Latour, *Facing Gaja*, 2017). Since the late 1990s, various international artists have combined aesthetic ambitions with an ecological agenda and technological experiments. In this process, the artists use technologies in unconventional ways in order to create modified bodies, landscapes, and ecosystems. Such works, called experimental ecologies, can be understood as laboratories to conduct some first steps transforming speculations about alternative, technologically inspired ecosystems into a medial and material reality. The presentation will discuss this thesis on two selected examples. The first is Maja Smrekar's Haraway-inspired K-9_Topology (2017), in which the artist created a complex network of humans, wolves and dogs by using transgenic fusions. The second is Pierre Huyghe's After ALife Ahead (2017) as a hybrid ecosystem of natural and artificial organisms. Particular attention will be paid to the analysis of the unconventional use of technology contextualized to the artist's philosophical backgrounds and staging strategies. These analyses will be combined with media-ecological methods (Stengers, *Cosmopolitics*, 2005) to examine the arts' role as a laboratory for new post-natural networks.

Dr. phil. Kerstin Borchhardt, art historian, since 2020 teacher at Siegen University (Germany). 2019 research stays in Mexico City and collaboration partner in several artistic and scientific projects. 2014–2019 research assistant at the Institute of Art History at Leipzig University. 2013–2014 teacher at Erfurt University. 2013 PhD at Friedrich-Schiller-University Jena.

Samuel Sadian

Art and unwitting agency: ‘Pig 05049’ and ‘Anatomy of an AI system’ as maps of the middle-class metabolism

Narrowly economicistic understandings of globalised capitalism often paint an overly flattened picture of what it entails. Attempts to overcome this go back to nineteenth century efforts by economists to chart the ‘world economic organism’ cartographically. In all cases there has been a basic assumption of globalisation as an intentional process, along with a focus on production and exchange. Even more formidable barriers arise when trying to apprehend the multitude of concrete relationships that swim into view today when looking also at: (1) everyday market action, as expressed in consumption; (2) the complex social relationships between unknown people underpinning this action, which are usually phenomenologically opaque to everyone involved; (3) how this complexity has continuously increased as a consequence of the technological mediation of both production and consumption; and (4) how, as with more conventional economic and sociological models, an optimal balance might be struck between intentionally omitting extraneous detail and concentrating otherwise difficult to access informational sources into a minimally intelligible representational whole. Here I turn to two recent art projects that demonstrate how these further barriers to understanding might be surmounted. One is PIG 05049 (2007) by Christien Meindertsma, and the other the other Anatomy of an AI System by Kate Crawford and Vladan Joler (2018). In the process of relating these works to the four complexities I list above, I suggest they function as powerful sociological and heterodox economic interventions as much as accomplished works of conceptual art.

Samuel Sadian studied modern literature and political philosophy before turning to sociology, with an MA on the linguistic and political philosophy of the Canadian philosopher Charles Taylor and a PhD in sociology on the modern social and political complexities of consumption in societies of the Global South. His PhD and more recent work, joining critical social theory with economic sociology and economic anthropology, has attempted to demonstrate the importance of interdisciplinary approaches to consumption and ‘consumer society’, with economic action more broadly being critically understood as deeply socially and politically embedded and disruptive. He has a particular interest in the manner in which economic understanding is conveyed and how economic reforms are legitimated both within and beyond academic institutions.

José-Carlos Mariátegui and Elisa Arca*Double-bind Information Systems in the Work of Teresa Burga*

This presentation looks at the work of Peruvian artist Teresa Burga (Iquitos, 1935 - Lima 2021), a pioneer in conceptual art who approached technology through the organization of information into complex mind maps and structures. Burga anticipated the massive use of information processing and analysis tools for studying personal and collective data. We argue that there are continuities that can be identified between, on the one hand, two of her major installation pieces --*Autorretrato. Estructura. Informe. 9.6.72.* (1972) and *Perfil de la Mujer peruana* (1980–1981)-- and on the other, her work as a civil servant at Peru's Customs Office. The installations were based on collected personal data (recognition systems) and collective data (census), respectively. The inscriptive forms critically depicted by Burga, as well as her reflection on information-gathering processes and methods, resonate with Peruvian Estate administration increasingly adopting computerized systems for information management. Burga's archive as well as interviews with the artist and her collaborators at the Customs Office have been crucial to understanding the possible connections between her artistic practice and her work as a civil servant.

José-Carlos Mariátegui is a writer and curator on art, culture, and technology. Studied Biology and received his BSc in Applied Mathematics, holds both Masters and Doctoral degrees in Information Systems and Innovation from the London School of Economics and Political Science - LSE (London). Dr. Mariátegui is the founder of Alta Tecnología Andina – ATA. Editorial Board member for Leonardo Books at MIT Press and Advisory Board member for AI & Society (UK). He co-edited the essay collection *The future was now: 21 years of video and electronic art in Peru*. Has published in journals such as Third Text, The Information Society, Telos and Leonardo and worked on projects on art, science and technology for more than two decades.

Elisa Arca Jarque is a PhD student in Communication and Culture at York University. She holds a Master's degree in New Media and Contemporary Art from Paris 8 University. She has worked as a project coordinator for ePPA Space/ Platform for Audiovisual preservation, a repository for Peruvian video art. At Alta Tecnología Andina (ATA), she conducted research in media arts with an emphasis on Latin America. She coordinated and contributed to the essay collection *The future was now: 21 years of video and electronic art in Peru*. She is the general coordinator of MUTA- Festival Internacional de Apropiación Audiovisual, a Lima-based found footage festival. Her current research interests include the use of audiovisual media in religious contexts and Latin American media history.

Liubov Iakovleva*The problem of uncertainty in architectural design: A media philosophical approach*

The presentation will provide an analysis of a number of architectural projects in the context of the problems of using digital technologies. Even though architecture is not a form

of technological art, it shares common features with technological art on the digital design level. In this respect, media philosophical discourse is of particular importance for analyzing the problems of using technologies in architecture. The media philosophical approach to the analysis of technologies in art allows us to get a deeper understanding of the very concept of media as a mediation of sensuality in architecture, to raise the question of conditions for producing uncertainty using algorithms in design.

In this presentation, we will consider the logic of an open algorithm using the example of ICD / ITKE (Institute for Computational Design Stuttgart) projects. As a theoretical basis for explaining this logic, we use the ideas of the media theoretician L. Parisi. Parisi's main thesis is that modern algorithms are not closed, mechanized systems, but contain elements of uncertainty and unpredictability. Therefore, uncertainty is not only a property of a human's affectivity, it's body and existence, but also of the algorithms themselves.

Thus, thanks to digital mediality with the logic of an open algorithm, the autonomy of the architectural process becomes more explicit. At the same time, technology becomes a kind of free action and ceases to be opposed to the freedom of human existence.

Liubov Iakovleva holds a PhD in Philosophy and currently works in the Center for Media Philosophy at Saint-Petersburg State University, Russia.