This book is a record of the research processes and practices carried out at the intersection of art, science and technology, and of the artistic and design activities of the last few years, which have been described and analyzed in a few dozen original texts. Considered as whole, this book demonstrates the great potential of conducting inter- and transdisciplinary research, which is the methodological and contextual basis for many of the texts presented here, which address issues associated with post-technological experiences. A huge civilizational leap has been made in the last 60 years. In terms of research, it can be said that we have moved from the definition of technological society (including Jacques Ellul's conception from the 1950s) in which technology was perceived as 'something external' to culture, to the technological systems focused on in post-technological approaches, in which ways of acquiring and processing data turn out to be an integral part of social, political and economic processes.

While exploring post-technological issues in 2015, Agnieszka Jelewska and I began our research as part of the grant entitled *Art as Laboratory of New Society. The cultural consequences of post-technological turn*[1]. The research included a series of trips in 2015-2018, as well as consultations with Jill Scott (ZHdK, Zurich University of Arts), Peter Weibel (ZKM, Center for Art and Media, Karlruhe) and Roy Ascott (University of Plymouth, De Tao Masters Academy, Shanghai). These meetings provided a unique opportunity to discuss many aspects of modern science, academic practice, research, and the creation of curatorial and artistic projects within what we call the post-technological dynamic state of culture and society. Peter Weibel gave expression to this outlook in 2011, referring to Frank Lloyd Wright's equation from 1930:

> "Machinery, materials, and men" which was valid for the nineteenth and twentieth century, must be reformulated for the twenty-first century, into the equation "Media, data, and men". Since the replacement of the alphabetical code by the numeric code, algorithms – from stock exchange to airport – have become a fundamental element of our social order. Today, people live in a globally interconnected society, in which biosphere and infosphere are interpenetrating and interdependent.[2]

This understanding of post-technology as processes based on data, algorithms and coding systems is present in many of the texts gathered together in this book, and is an important indication of social, political and aesthetic transformations.

The book opens with a text by Roy Ascott, which is a kind of manifesto on post-technological experiences. The text was first published in 1991, in a volume of *Elektronische Akademie - Kunst & Elektronische Medien / Elektronische Medien &*

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[1] This text is the result of research conducted under the auspices of a grant from the Polish National Science Centre, entitled: *Art as the Laboratory of New Society. The cultural consequences of post-technological turn* (no: UMO- 2014/13/B/HS2/00508).

[2] Peter Weibel, *Infosphere: The Transformation of Things into Data*, www.zkm.de/en/peter-weibel-preface (accessed 15 December 2018).

Kunsthochschulen, and in a sense marks the beginning of the post-technological era, as it anticipates and makes necessary changes to the cognitive and affective paradigms of the new society. What Ascott pointed out in the 1990s – and this is still an important challenge for reflection and application in social communication – was above all the networking and exchange of knowledge between researchers in order to create transdisciplinary speculative-cognitive models. The point is not so much to cross the borders of disciplines as the knowledge systems that determine them. Announcing the reality of "New Trinity: Artificial Intelligence, Artificial Life, Interactive Arts –the three fields form a Boolean overlap" [3], Ascott rightly points out that the 21st century is the time of:

> the door opening onto a world which is ours for the making through connectivity, interaction, participation and negotiation in that dataspace which now mediates our actions and sensibility.[4]

The texts in *Post-technological Experiences* have been organized into parts. However, the texts are not divided as to whether they are 'scientific' or 'artistic', since this would not be at all helpful and would introduce an erroneous logic – because many of the texts gathered here are simply inter- or transdisciplinary in nature, in addition to crossing the boundaries between artistic practice and scientific theoretical discourse.

The book consists of five parts. Part I: **Laboratory as Cultural Procedure** discusses the phenomenon of the laboratory in cultural and scientific terms, from various scientific and artistic perspectives. In her chapter, ***Spaceship Earth and the Beginnings of New Environmentalism***, Agnieszka Jelewska traces the development of the term 'environment' and its techno-cultural determinants from the 1960s onwards, and the consequences of conquering space, to the groundbreaking concepts of the 'second Copernican revolution' from the turn of the 20th and 21st centuries, thus revealing new forms of producing episteme within the framework of data-based structures in contemporary environmental sciences. The next text, ***The Coastline Paradox: Measuring a Nameless Island*** by Elizabeth McTernan is an auto-ethnographic record of an artistic project combining cartography, mathematics and physics, which juxtaposes theoretical scientific discourse with practice and artistic experience, indicating limitations encountered in attempting to make a full description of reality by means of the languages and tools from both disciplines. In ***Creative Incubators for a Common Culture: Art and Science***, Jill Scott describes, on the basis of her own practice in the field of art and science, the institutional problems of transdisciplinary research incubators, embedding them in the perspective of the development of science in the 20th century, the corporate laboratory indus-

[3] Roy Ascott, *The Academy: Receding or Re-Seeding? Notes Towards an Electronic-Nanonic Discourse*, in this book, pp. 16-24.

[4] Ibidem, p. 24.

try and social change. The text by Joanna Jeśman, ***What can we learn from art and science collaborations? On the multidimensional educational implications of Bioart,*** focuses on bioart practices, highlighting their significance for contemporary post-humanistic and transhumanistic research, but also the medical humanities and transplantology, and in particular the social understanding of the progress that has been made in medical science. In the next text, ***Molecular Approach: Metamorphosis of Image / Metamorphosis of Imagination / Metamorphosis of Gaze***, Joanna Hoffmann-Dietrich shows the relationship between the development of laboratory research apparatus and cultural understanding of matter. Here, new ways of imaging matter in the pure sciences are juxtaposed with individual artistic practice located in the current of molecular aesthetics. In ***Nonsense Technologies***, Przemysław Jasielski employs the term "technopoly" (N. Postman), treating it as a contemporary condition in which he realizes his speculative artistic projects. In the text which rounds off this part, ***Transforming the Whole World into a Laboratory. Cultural and Artistic Practices in the Post-technological Times***, I describe the extended category of 'laboratory', which became the foundation for new practices in the field of art and science and their social and political impact.

Part II: **New Media Art and After** is devoted to new artistic genres, aesthetic categories, new ontologies and educational practices in the field of new media. In ***Hybrid Art – A New Category of Cyberart***, Piotr Zawojski traces the emergence of a new category/genre of art at the Ars Electronica Festival, where various hybrid, transgressive and typological practices and works of art can be identified. Hybridization also has a deeper meaning here, as it is becoming a category of contemporary technoculture. In the next chapter, ***Will Art be the Next Theology?***, Paweł Janicki analyses, with reference to his own artistic practice, the possibilities of defining programming and software not only as media of a new art, but also as a descriptive language for the post-digital world and contemporary epistemology. Programming issues are also present in Jakub Alejski's chapter, entitled ***Illusory Intelligence in Video Games***, which reveals the use of AI in games to be a simulation of intelligent behaviour, rather than actual intelligence. This part of the book ends with a text by Jan Słyk, ***From Transdisciplinary Communication to Digital Education. Music–Architecture Interactions and the Substance of Design***, which presents the possible use of digital tools and the methodological relations between architecture and music education. The case studies discussed in the text are related to the author's architectural and educational practice.

Part III: **Post-phenomenological Perception** gathers together texts that analyze contemporary forms of mediated perception in different ways. The opening text is Bronka Nowicka's ***The Exchange of a Body for an Image. An Attempt to Capture the Way of a Thing from Matter to Memory***. Taking the form of a media essay, the text is coupled with visual documents, with both layers co-creating a personal narrative on the subject of the mediatized forms of post-memory. In the next chapter, ***SnorriCam - A New Look at the Face***, Rafał Syska describes the 'snorri' effect used

in the film industry as a category that creates new sensory forms of sensory experiences. Part III ends with two theoretical texts, the first one by Natalia Juchniewicz, ***A Postphenomenological Approach in the Studies on Human-Technology Relations***. ***The Philosophy of Don Ihde***, the second being ***The Post-technological Experience or the Doppler Effect*** by Jacek Wachowski. The authors track how the category of philosophical description of experience has been transformed by the influence of technological development.

Part IV: **Technology and Embodiment** contains texts that analyze the relation between the human body and contemporary technologies in the context of the performing arts. Gaja Karolczak describes new forms of embodiment resulting from the practice of experimental dance forms in ***Virtual Corporeality and the Phantomic Understanding of the Body***, on the basis of her art-based research using phantomology. In ***Is the Spectator Supposed to Spectate? Triggering the Dance Audience***, Magdalena Zamorska attempts to redefine the spectator-dancer relationship and the experience of perception in post-technological culture. In her text ***A New Concept of the Performer in the Context of Current Developments in Science and Technology***, Małgorzata Dancewicz describes new categories in contemporary art, such as, for example: robotic performer, double performer, semi-living performer, interactive performer, kinetic performer, etc.

Part V, **Sound and Materiality,** is entirely devoted to sound studies, sound design and new phenomena in sound art that have emerged in recent years. In ***Soft Machine – Somainstrument***, Justyna Stasiowska describes the phenomenon of techno-somatic interactions in music using measuring and monitoring equipment (e.g. EEG, biofeedback, EMG), indicating Alvin Lucier as a pioneer with such experiments. Tomasz Misiak devotes his text, ***Viral Inflammation of Sound Art. Based on MP3 Deviation by Yasunao Tone***, to the work of one artist. Misiak precisely describes Tone's data manipulations and their interferences with musical structures. At the same time, Misiak situates Tone's work in technological, laboratory, social, cultural and political contexts. The text ***Beyond the Now: Reframing Listenership in the Pre-Recorded Universe*** is Jeff Gburek's recording of an improvised talk. This text is close to the idea of performative writing, during which the successive stages of memories and ideas are extracted from memory by evoking the experience of hearing and listening in real time to previously recorded sound walks and field recordings of audio materials. The last text is Rafał Zapała's article, ***Integral Artistic, Technological and Social Strategies in the Sound Installation "Sensorium"***, in which the author discusses theoretical, technical and artistic foundations on the basis of practice and research conducted during the creation of his work Sensorium, which is monumental both in terms of the architectural scale and the impression it creates. Zapała redefines classical compositional technique and describes the use of biomedical technologies (EEG, GSR) in a work of art that has an anti-mass character, and which is a kind of one-person experience for networked post-technological culture.

The texts gathered together in this volume therefore present post-technology as a new category of culture connected with the spread of laboratory procedures, scientific knowledge systems and research practices at the end of the 20th century and the beginning of the 21st. Post-technological experience primarily has a molecular dimension; it is associated with new forms of experiencing and defining time, space, matter, object, the body and sound through media that are no longer treated as external to the body, or as extensions of the body, but as sensors of the body enabling a perceptually deeper participation in reality. The post-technology is the functioning of data collection and processing, and information exchange procedures, in systems which cease to have an abstract dimension and become tangible values with physical properties that can be translated and hybridized. Post-technological culture has made the latest art an experimental and speculative research practice. And it is this art – with its undetermined procedures – that becomes in this reality a tool for prototyping new forms of society, and for generating discussions about important ethical, ontological, scientific and technological layers of the contemporary world.

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