

Editorial

Digital Humanism: How to Shape Digitalisation in the Age of Global Challenges? †

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Abstract: Digital Humanism, formulated in 2019, is an explicit demand for the development and application of human-centred technology, that is, for “pulling” a humanised and humane digitalisation instead of “pushing” it for merely economic reasons. Under the title above, the scientific encounter of inter- and transdisciplinary perspectives has aimed at presenting and questioning the conception of that trend. Special emphasis has been placed on the link between digital technology and the urgent societal goals of mitigating, if not resolving, the existential multi-crisis humanity faces today.

Keywords: digital humanism; technology and society



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1. Introduction

The term ‘Digital Humanism’ seems to have first been coined in a Gartner Special Report entitled *Digital Business: Digital Humanisms Makes People Better, Not Technology Better* [1] in 2015. Unfortunately, it did not refer to humanism as a philosophical issue. Rather it defined: ‘Digital Humanism is the recognition that digital business revolves around people, not technology. CIOs and business leaders who recognise that digital business revolves around people’s value will see employee capabilities translate into product, service and market gains.’ It was German philosopher Julian Nida-Rümelin who used the term in lectures and published a book under this title in German—*Digitaler Humanismus*—in 2018, together with Nathalie Weidenfeld [2]. This term was adopted by then-Dean of the Faculty of Informatics at the TU Wien, Hannes Werthner, and translated into English. He convened a workshop in 2019, which gave birth to The Vienna Manifesto of Digital Humanism:

‘This manifesto is a call to deliberate and to act on current and future technological development. We encourage our academic communities, as well as industrial leaders, politicians, policy makers, and professional societies all around the globe, to actively participate in policy formation. Our demands are the result of an emerging process that unites scientists and practitioners across fields and topics, brought together by concerns and hopes for the future. We are aware of our joint responsibility for the current situation and the future—both as professionals and citizens.’

The demand is as follows: ‘We must shape technologies in accordance with human values and needs, instead of allowing technologies to shape humans. Our task is not only to rein in the downsides of information and communication technologies, but to encourage human-centred innovation. We call for a Digital Humanism that describes, analyses, and, most importantly, influences the complex interplay of technology and humankind, for a

better society and life, fully respecting universal human rights.’ [3] The Manifesto proclaims 11 core principles (see also [4]). The City of Vienna has since been active in promoting Digital Humanism by providing funds.

Now that certain advancements in AI and its related fields have evoked a worldwide debate on whether the boundaries of the human and the artificial are blurring, it seems apt to clarify Digital Humanism. ‘Is humanism outdated and can it be renounced? Or does it only need an update? And if so, an update in which direction?’ [5] (see also the edited volume of Hofkirchner and Kreowski on trans- and posthumanism [6] and Hofkirchner’s essay on the philosophical foundations of Digital Humanism [5]).

However, as humanity continues to face global challenges that threaten the continuation of civilisation on Earth and that can be mitigated, if not resolved, only by a concerted action of humanity itself, two further questions are implied: (1) how can humanism respond to the existential risks for humanity and (2) can digital humanism provide technological and social innovations to combat the existential risks for humanity?

The workshop *Digital Humanism: How to shape digitalisation in the age of global challenges?* addressed these questions by focusing on (i) the foundations of Digital Humanism, as well as (ii) the steps towards its implementation—from the design to the use of information and communication technologies (ICTs) for a techno-eco-social transformation that is urgently required to cope with the global challenges.

As an inter- and transdisciplinary attempt, contributions have been accepted that can bridge a variety of disciplines,

- from social and human sciences (including philosophy, cultural sciences, political science, economics, or arts) on the one hand,
- to fields of informatics (including, in particular, AI, robotics, cyber-physical systems, human–machine interaction, or data science) on the other.

The workshop was organised by the IS4SI Special Interest Group (SIG) on *Emergent Systems, Information and Society* and the *Forum Computer Professionals for Peace and Social Responsibility*. The programme committee was composed of international experts from both organisations: Kirsten Bock, Yagmur Denizhan, Helena Knyazeva, Mina Koukou, Robert K. Logan, Yurii Mielkov, José María Díaz Nafría, Rainer Rehak, Britta Schinzel, Tomáš Sigmund and Modestos Stavrakis (Canada, Czech Republic, France, Germany, Greece, Turkey, Russia, Spain, Ukraine). They were in charge of reviews and sessions. Wolfgang Hofkirchner and Hans-Jörg Kreowski were the workshop chairs.

Besides the organisational support of the IS4SI, the workshop was technically supported by the *Bremen Research Cluster for Dynamics in Logistics*.

2. The Framing of the Topic

The discussion was initiated by keynote speeches of two philosophers, Julian Nida-Rümelin and Rainer E. Zimmermann. A subsequent panel discussion presented arguments in the context of the existential risks that threaten the humanity, and attempted to substantiate the demand for shaping technology.

2.1. Humanism

The first keynote speaker was **Julian Nida-Rümelin** from Ludwig Maximilian University Munich, and Vice-Chair of the German Ethics Council. He presented his philosophy of *Digital Humanism*. His core concept is the notion of ‘authorship’, which substantiates the responsible status of the human individual. Other animals, as well as the so-called autonomous e-persons, lack the capacity of authorship. Simulating human behaviour is not the same as authoring a behaviour. Nida-Rümelin’s Digital Humanism rejects the trans-humanistic perspective and the animistic perspective alike. He dismisses the idea of homo deus, the human god that creates e-persons as friends, and even eventual enemies. Hans Jonas’ [7] precautionary principle has to be applied in order to avoid the potential dangers that may be lurking in the AI technologies. (Nida-Rümelin’s talk is not available, but the abstract can be found at [8].)

The second keynote speaker was **Rainer E. Zimmermann** from the University of Applied Sciences Munich and Clare Hall, UK. He is also a member of SIG Emergent Systems. In his historical overview of *Humanism revisited* he pointed out that classical humanism was confined to the elites who possessed sufficient autonomy and was not applicable to all humankind. He has emphasised that digitalisation still lacks an underlying ethics. (See the abstract [9], his talk will be published as full paper in the journal *New Explorations*.)

2.2. Humanism and Actual Challenges

Wolfgang Hofkirchner moderated a free discussion alongside **Kirsten Bock** (Unabhängiges Landeszentrum für Datenschutz Schleswig-Holstein, Kiel, Germany), **Yagmur Denizhan** (Bogazici University, Istanbul, Turkey), **José María Díaz Nafría** (Madrid Open University, Spain) and **Rainer Rehak** (Weizenbaum Institute Berlin, Germany) on the general theme of the workshop—*Digital Humanism: How to shape digitalism in the age of global challenges?* The first round considered the question as to whether an “update” of humanism is needed, while the second round was devoted to specific issues related to the design and usage of digital technologies that would support a techno-eco-social transformation of societies. (A record of the session might be publicised.)

3. Concretisation of the Topic

Twenty-four submissions were accepted for presentation, with authors from fifteen countries and five continents. One presentation had to be cancelled. Ten presenters have subsequently submitted their contributions which have been accepted for the proceedings after being peer-reviewed. They are summarised below. All eight sessions have been recorded (the videos can be watched at the Vimeo channel “The Great Bifurcation” [10]). All abstracts are available in [11].

3.1. Futures of Science and Technology

The first session was devoted to three subjects: AI, drones and digital games.

3.1.1. A World Worth Living—Can Artificial Intelligence Help to Reach the Goal?

Hans-Jörg Kreowski discusses the question: “Can AI help to make the world worth living?” He shows that the answer depends on the circumstances. He states that Hans Jonas’ imperative of responsibility must be observed by world leaders, as well as scientists and engineers: “Act so that the effects of your action are compatible with the permanence of genuine human life” [7].

3.1.2. Digital Games—Virtual Worlds—Real Impact

Sabine Thürmel from Technische Universität München suggests the use of gamification for exploring future sociotechnical imaginaries. Alternative futures can be visualised that are better tailored to meet the needs of users and stakeholders, in particular, with regard to so-called Smart City environments. (Her video is not available.)

3.2. Education and Development

The second session comprised presentations on the problems encountered in the German higher education system with regard to the study of “Informatics and Society”, on the prospects for sustainable development of science and education, and on the potential of ICTs for development on the basis of a case-study related to the empowering of women in Ethiopia.

Informatics and Society in German Computer Science Bachelor Courses

Henning Lübbecke lays emphasis on the fact that Informatics-and-Society courses are absent in the curricula of more than half of German universities and universities of applied science that offer courses in computer science, although the German Informatics Society recommends the inclusion of courses on the elicitation, analysis, and evaluation of conflicts in human values and needs [12].

3.3. Global Strategies

Discussions in the third session included social resilience and intergenerational learning, the quest for intergenerational media of understanding in the context of the Chinese Belt and Road Initiative and a social EU, and education and digitalisation from a Global South perspective.

3.4. Evolution of Technology

The fourth session explored theoretical foundations of technology in the context of self-organised systems and emergent information, even tracing it back to the origin of symbiosis within the world of bacteria.

3.4.1. Hybrid Information Systems: Who Is in Control?

For **Daniel Boyd**, it is inappropriate to consider technologies and their users as two separate entities. Instead, together, they form an integrated sociotechnical system. Thus, informational systems can combine emergent natural/social systems with designed technological components [13]. He discusses the question of control in such systems.

3.4.2. Info-Autopoiesis and Digitalisation

Jaime F. Cárdenas-García, from the University of Maryland—Baltimore County, begins by discussing Bateson's notion of "difference that makes a difference" in the context of living beings and concludes by exploring how digitalisation creates a challenge in our societies with regard to keeping the proliferation and adverse impacts of technology under control, comparing them to the challenges created by nuclear power or fossil fuels.

3.5. Values for Design

The fifth session explored the philosophical foundation of value-based engineering (the recent IEEE Standard 7000), for which the metaphor of gardening seems apt, with a tool to bridge emotional user experience with a technological assessment that is value-based, and with a transcultural perspective on AI that promotes a virtue approach for ethical design.

3.6. Design

The sixth session delved into the issue of design in the context of ICT.

3.6.1. Sustainable Interactions as Design Objects That Promote Digital Humanism

Katerina Malisova and **Modestos Stavrakis** introduce an advancement of Interaction Design [14] towards Sustainable Interaction Design. The latter implies ethical values associated with sustainability and can assist users in feeling part of the solution in humanitarian and ecological crises and empower them to induce changes.

3.6.2. Does System-of-Systems Thinking Work for Self-Governance of Digitally Transforming Systems?

Christian Stary is convinced that cyber-physical systems will become the core of the sociotechnical systems. Since sociotechnical systems are under steady transformation, the task is to keep humans in—or put them back into—the loop such that they can articulate their interests. For this reason, Stary advocates the development of live copies of physical systems—of digital twins [15].

3.6.3. Resuming Experiences in Human-Centred Design of Computer-Assisted Knowledge Work Processes

After four decades of human-centred design of software artefacts and computer-assisted work processes, the development of adaptive systems and multi-agent-systems has become more and more non-transparent—what is typical of what Heinz von Förster has called "non-trivial machines" because humans cannot predict or explain their behaviour.

Thus, they cause stress in their human operators, argues **Peter Brödner**, who is a long-standing expert in the field [16].

3.7. Concepts of Digitalisation

The seventh session collected diverse critical views of digitalisation. One presentation laid emphasis on the development of mathematics, a second one on the global phenomenon of Narcissus Narcosis in a fake news galaxy, and a third one on its relation to the commons.

Digital Transformation as a Reconstruction of Knowledge

Rafal Maciag from the Jagiellonian University, Krakow, Poland, holds that we owe the origins of digital transformation to an epistemological change in geometry and mathematics in the 19th century, which provided new ways of ontologising the world—computability—and of reasoning, with new impacts on social reality.

3.8. Humanism in the Anthropocene

The last session has provided a wider perspective on the fate of science and democracy, on the temporal experience according to Bernard Stiegler's "epiphylogenesis", and on the state of humanity at the new stage of Anthropocene, which Robert K. Logan considers as a multi-stage process.

Humanism in the Digital Age: Risks and Opportunities for Science and Democracy

Yurii Mielkov from the Institute of Higher Education of the National Academy of Educational Sciences of Ukraine, analyses the potential of digitalisation with regard to humanisation and de-humanisation.

4. Conclusions

The inter- and transdisciplinary perspective of the workshop was partially accomplished by allowing for the expression of a rich variety of perspectives on the potential opportunities and challenges of digitalisation, although we are still far from reaching a unified agenda on how to steer the development of digital technologies towards the benefits of humanity in general.

The journal *New Explorations* will publish a Special Issue with the full papers.

Conflicts of Interest: The authors declare no conflict of interest.

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