

# EUPhilBio\_2024

Sustainability, Philosophy & Biology

Budapest, 7-8 June

[EUPhilBio 2024 nemzetközi konferencia](#)

*Budapest Metropolitan University, InfoPark campus*



## **Address**

Gábor Dénes Street 4 Infopark building D, 1117 Budapest

[Click here to find the Infopark Campus on Google maps.](#)



## **Organizer**

Eörs Szathmáry, Professor of Biology

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## KEYNOTE SPEAKERS

### Ferenc Jordán

*Man and the Biosphere: a systems perspective*



Ferenc Jordán is Hungarian biologist doing research focusing on biological networks. From food web stability to habitat connectivity and from leadership in animal social networks to preserving critical infrastructures, a number of problems are essentially about the relationship among parts and the whole. With Phd in genetics from Eötvös University, Budapest (1999), he was Branco Weiss Fellow at Collegium Budapest IAS, Principal Investigator at The Microsoft Research - COSBI in Trento and Fellow at Wissenschaftskolleg zu Berlin. Presently he is Researcher at the University of Parma and Associate Researcher at Stazione Zoologica in Naples. He is being increasingly involved in doing socio-ecological research and science communication.

### Gábor Földvári

*Emerging infectious diseases: how to win an ecological hide and seek?*



Gábor Földvári is a research associate professor at Institute of Evolution, Centre for Ecological Research, Budapest. His research focuses on ecology of emerging infectious diseases. He graduated as a biologist in Szeged, Hungary in 2001 with main topics microbiology and ecology. He obtained his PhD and habilitated in veterinary parasitology at the University of Veterinary Medicine, Budapest. He has teaching experience in various university courses in zoology, parasitology and parasite ecology in English, German and Hungarian languages. He had several months-long research visits in Complutense University of Madrid, Konrad Lorenz Institute, Vienna and the Natural History Museum, London. He was guest lecturer in veterinary universities of Madrid, Brno and Vienna. His research area is parasitology, disease ecology, more specifically eco-epidemiology of ticks and tick-borne pathogens and the effect of climate change and biodiversity loss on emerging infectious diseases. He currently leads the Emerging Pathogen Ecology Research Group in the Institute of Evolution, Centre for Ecological Research, Budapest.

## Seán Cleary

*Ontology, political philosophy and sustainability; human and societal shortfalls in practice*



Seán Cleary is Executive Vice-Chair of the FutureWorld Foundation, an Advisory Council member of Club de Madrid, EIT Climate-KIC, Carnegie Artificial Intelligence and Equality Initiative; Senior Advisor and Senior Fellow (and former Board Member) of the Salzburg Global Seminar; Fellow and Special Adviser of the Global Solutions Initiative, and Diplomacy Moderator of the Geneva Science and Diplomacy Anticipator. Between 1970 and 1985, he was in diplomatic service in Iran, the USA and Namibia, in the last of which he facilitated all-party negotiations *leading* to Namibia's independence and introduced a justiciable Bill of Rights. He later helped craft South Africa's *National Peace Accord en route* to its democratic transition. Seán has served on corporate boards and those of many non-profit organizations, and as a Strategic Adviser to the World Economic Forum. He has received public service awards, co-authored two books and published scores of articles on conflict, development, and international policy, most recently, *The Failure of Constructive Collective Action When We Need It Most* (Global Perspectives).

## Timothy Waring

*Completing dual inheritance theory: human evolution in broad perspective*



Dr. Tim Waring is an associate professor of applied cultural evolution at the University of Maine. He studies how culture and cooperation determine human social and environmental outcomes and drive human evolution. Waring's work spans from theory development and empirical research to applied science, covering all scales and time periods from single organizations to the planetary longevity of *homo sapiens*. Waring builds evolutionary models of social and cultural change to learn how beneficial behaviors and institutions arise and persist, and tests theoretical predictions of human behavior with behavioral and social learning experiments. His evolutionary theory of the environmental sustainability of human systems has been applied to case studies around the world. Dr. Waring also has been a pioneer in the development of an applied science of cultural evolution for sustainability and beneficial social change, and leads a global applied research network on the topic. Current projects include the patterns and processes of long-term human evolution, the role of group-level cultural evolution in social-ecological change, the evolution of co-operative organizations, and cultural adaptation to climate change. Dr Waring is on a research sabbatical in 2023-2024, during which he has focused on developing a global applied research agenda on long-term human evolution and global sustainability.

## CONTRIBUTED TALKS

**Miklós ANTAL (Institute of Empirical Studies, Faculty of Social Sciences, Eötvös University, Budapest):**

*Why is it easier to imagine the end of the world than the end of capitalism?*

One of the main features of capitalism is continuously rising production and consumption, expressed in monetary terms by GDP growth. Despite clear evidence that GDP cannot serve as an indicator of societal well-being, it is a main target of most governments worldwide. This is a problem because continued global growth in production and consumption is very likely to be unsustainable, exacerbating the planetary ecological crisis and increasing risks of societal collapse. Here we show why there is so little willingness to give up on the goal of GDP growth. Eight reasons are listed for which specific groups in society support further growth: profit expectations, increasing the taxbase, the instability of the economic system, unemployment in the absence of growth, consumer culture, the misuse of progress indicators, the conservatism of elites, and rivalry between countries. It is pointed out that perceptions of key actors drive decisions that sustain the growth paradigm. The difficulty of change stems from the parallel impacts of post-growth strategies. For instance, the reduction of working hours may keep unemployment low when GDP does not grow, but it creates several other problems (e.g. reduces the tax base). This hinders the implementation of individual post-growth strategies, calling for a more comprehensive post-growth agenda consisting of a set of policies to address the eight concerns. We acknowledge that the political risks of supporting such a radical agenda are very large.

**András GELENCSÉR (Research Institute of Biomolecular and Chemical Engineering, University of Pannonia):**

*Green dreams fading away...—rock-hard limits to 'sustainable development'*

In a style barely heard elsewhere this talk unveils the topic of global sustainability which has shockingly become a smoking gun for humanity. Being a natural scientist with background in engineering the speaker busts each communication buzzword of global sustainability that only serves the short-term interests of the global elite. The speaker, who, unlike many others, does not feed on fairy tales, is deeply concerned about the future of humanity, and wants to wake up others to find real-life solutions instead of blowing balloons of green illusions. After all, humanity's existence is at stake", and there is no Planet B, or another chip to start over. This talk is for those who are brave enough to venture out of the lukewarm grazing pasture of 'alternative reality' masterminded by the global elite and the media.

**Eörs SZATHMÁRY (Institute of Evolution, HUN-REN Centre for Ecological Research):**

*Evolvable AI as major threat to humanity*

I have come to realize that the threat that AI will become evolvable, and will in fact evolve, is a most threatening scenario. I shall explain in the Commentary that this possibility is imminent, although not yet appreciated. Programs can self-replicate in cyberspace and AI agents are programs. Parasitic programs can, in the future, also exploit complex AI platforms. Some computer viruses can be AI agents. One or more products of this potential "digital evolution" is likely to "escape from the lab". Just as SARS-CoV2 caused a great deal of harm without the slightest grain of consciousness, evolvable AI programs can do the same. No AI consciousness is required! When entities qualify as units of evolution, self-interest automatically arises. This may be more or less aligned with human interests, or entirely orthogonal to the latter. Mutualistic symbiosis is certainly possible, but competition and evolutionary arms races are more likely. As a blogger wrote last spring: "A self-replicating computer program that knows we want to erase it and benefits from proliferation should genuinely scare us all."

*Toward taming capitalism: the sub-exponential monetary growth order*

Our ability to successfully fight major challenges of climate change is diminished by rising social and economic inequality. One important source of inequality can be identified in the formula of compound interest which describes unlimited growth of monetary assets and debts based on the law of exponential growth. The talk revisits a novel way to calculate compound interest in times of crisis based on a mechanism that could mitigate the effects of economic competition and help achieve sustainable life on our planet.

**István ZACHÁR and Szabolcs SZÁMADÓ (Institute of Evolution, HUN-REN Centre for Ecological Research and HUN-REN Centre for Social Sciences, Computational Social Science Research Group)**

*A Darwinian model of cultural replication: A resolution of the duality of cultural inheritance*

Universal Darwinism argues that entities capable of multiplication, variation and inheritance evolve by natural selection. Besides genetic reproduction implementing Weismannian inheritance, other adaptive systems were proposed to support Darwinian evolution, most notably culture, assuming autonomous cultural replicators akin to genes. While culture lacks direct template copying and inherits acquired changes, its overall behaviour is Darwinian as languages attest. The duality of cultural evolution is that the former suggests a Lamarckian, the latter a Weismannian interpretation. We provide a solution to the problem of duality via a mathematical model of cultural information replication. We model the inheritance of information, cultural or genetic, as a successive set of template-based transformations of information between generations. We demonstrate that Lamarckian and Weismannian inheritance form a continuum and that both can reconstruct information stably for an indefinite time under sufficient conditions. Our formalism naturally unifies Lamarckian and Weismannian inheritance, proving that cultural replication, in theory, can approximate the fidelity of genetic replication. Accordingly, Lamarckian inheritance may be an adequate low-level model of culture and can support population-level Darwinian evolution.

**Gyula ZILAHY (Department of Environmental Economics and Sustainability, Budapest University of Technology and Economics):**

*Potentials and Limitations of the Circular Economy*

The Circular Economy is a promising solution to a number of urging local, regional and global problems including the scarcity of resources, climate change and the collapse of ecosystems. While the idea of closing the material loops is not new (see e.g. the notion of industrial ecology), it has only recently gained the attention of policymakers and businesses. The Circular Economy promises a number of environmental, social and economic benefits, including but not limited to the mitigation of pollutants, easier access to products and services for low income social groups and lower production costs for businesses. However, the potential of the Circular Economy is limited by a number of factors, such as the inaccurate interpretation of its goals and tools, a reluctance of market players to take action and a number of rebound effects, which may reduce its overall positive effects. The presentation aims to highlight these limiting factors and to provide ideas to overcome them.

# PROGRAMME

## Friday, June 7

- 10:00 – 10:10 WELCOME ADDRESS: Áron BERECHKY, Vice Rector for Innovation of the Metropolitan University
- 10:10 – 10:20 INTRODUCTORY REMARKS: Eörs SZATHMÁRY, Chairman of the Presidential Committee for Sustainable Development of the Hungarian Academy of Sciences
- 10:20 – 11:20 Ferenc JORDÁN: *Man and the Biosphere: a systems perspective*
- 11:20 – 11:50 Gyula ZILAHY: *Potentials and Limitations of the Circular Economy*
- 12:10 – 13:00 András GELENCSÉR: *Green dreams fading away... – rock-hard limits to sustainable development'*
- 13:00 – 14:00 LIGHT LUNCH
- 14:00 – 15:00 Timothy WARING: *Completing dual inheritance theory: human evolution in perspective*
- 15:00 – 15:40 István ZACHÁR, Szabolcs SZÁMADÓ: *A Darwinian model of cultural replication: A resolution of the duality of cultural inheritance*
- 16:00 – 17:00 Gábor FÖLDVÁRI: *Emerging infectious diseases: how to win an ecological hide and seek?*
- 17:00 MOVIE: *The Legend of the Gold Train* (40 min)
- 19:00 MEETING DINNER at the Academy for speakers

**Saturday, June 8**

10:00 – 11:00	Sean CLEARY: <i>Ontology, political philosophy and sustainability; human and societal shortfalls in practice</i>
11:00 – 11:40	Miklós ANTAL: <i>Why is it easier to imagine the end of the world than the end of capitalism?</i>
12:00 – 12:30	Eörs SZATHMÁRY: <i>Toward taming capitalism: the sub-exponential monetary growth order</i>
13:00 – 14:30	LIGHT LUNCH
14:30 – 15:10	Eörs SZATHMÁRY: <i>Evolvable AI as major threat to humanity</i>
15:10 – 16:30	GENERAL DISCUSSION
16:40	CONCLUDING REMARKS: Petar MITRIKESKI, Faculty of Philosophy and Religious Studies, University of Zagreb