



Illustration credit: Interspecies Money Group

15 May 2023

Lecture

The age of the Interspecies – Some new ways to think about and protect nonhuman life on Earth

Speaker: **Jonathan Ledgard**
(Czech Technical University AI Group, EPFL, Interspecies Money
Group)

Memo by Anca Radu
(Researcher, Law Department)

*This event has been organised by the
Technological Change and Society Interdisciplinary Research Cluster*

Jonathan Ledgard is a Shetland Islands born technologist, novelist, and foreign correspondent. He heads up the Interspecies Money Group which seeks to make nonhuman life better known computationally. As a director of future Africa at the Swiss Federal Institute of Technology in Lausanne (EPFL) he helped invent drone delivery for blood and medicine and led the idea of drone ports and electric charging stations across Africa and other emerging economies. Previously, for two decades, he was an award-winning foreign and war correspondent for *The Economist*, reporting lead stories from 60 countries and many wars. Separately, as **J.M. Ledgard**, he is a bestselling novelist. His last novel, *Submergence*, was adapted for Hollywood by Wim Wenders. In addition to EPFL, he is a visiting professor in an AI group at the Czech Technical University in Prague. He lives in Kenya.

Ledgard began his talk by reassuring us that, despite introducing a new topic – Interspecies Money, which is technically feasible. Also, he clarified that the notion of *equity across the species* should not be confused as damaging to humans. Next, he presented us with some elementary aspects. First, in terms of diverse life forms, these can be found towards the equatorial belts, which is also where the population growth is most dynamic. Second, just as we take the AI's evolution for granted, the same could be said also for Africa being the front and centre of our politics and economics in the next decades. Third, he mentioned the competition between humans (more precisely, he talked about smallholder farms) and non-humans, as becoming problematic in the future, unless at least small amounts of money will be invested as incentive structures.

He further gave us Ethiopia as an example, where there is a war for three years now, and due to a lack of foreign correspondents, there is no real data on the number of deaths (i.e., 200,000 or 600,000). He then mentioned that Ethiopia has 120 million people, 1,000 lions and 1,000 giraffes, and most of the megafauna, fauna, trees, and insect species have been destroyed. Despite this rather pessimist statement of facts, **Ledgard** declares himself as a natural optimist and looks at this situation as being ready for *regeneration*. That is, an opportunity to reintroduce species. Evidently, the question that arises is how this should or could be done.

In a nutshell, the talk focused on the following aspects:

- The urgency of exploring the introduction of Interspecies Money
- How will computing represent nonhumans?
- What does it actually mean to see another life form?

Introducing the notion of an *umbrella species*, **Ledgard** defined it as an ecosystem comprising the variety of existing species (including large and small animals, such as termites and bats). The manner in which this could further help us is by identifying what he called a 'rare umbrella species' by pointing out any problem it might have. Then, it should be given an identity and allow it to hold some value. Therefore, using Interspecies Money approaches, the goal is to double the umbrella species in the next decades.

To achieve said goal, thinking in terms of financial mechanisms capable of being pushed across the species divide and then pushed back to the very poor communities is a must in **Ledgard**'s view. Related, Professor **Ledgard** stressed the urgency of the matter at hand. And to prove this, he challenged us to identify a rare evolutionary species called Sirenian. Finding out that the last scientific work done on this species, in the African context, was in 1976, together with the idea that out of the 8 million species on the planet most of them will go extinct, motivated him to start working on Interspecies Money.

How will computing represent nonhumans?

This is the first question this talk addressed, and to answer it, Professor **Ledgard** recalled the existential risk of developing, by 2040 – when the African population will have doubled –, narrow AIs that will not be trained on the natural world. Thus, the issue is how will another form of life (e.g., animal, tree) be able to represent itself to these computational systems. Provided that this is not possible, there is an evident risk that the collective AIs won't weigh their interests at all.

Going to the basics, **Ledgard** defined the notion of *Interspecies*, and gave us the definition of James Bridle from his book entitled *Ways of Being. Animals, Plants, Machines: The Search for a Planetary Intelligence*. It refers to the new connections made possible by technology between humans and nonhumans, regardless of whether it is a simple video showing squirrels

in the park. What Interspecies Money can do is, first, catalogue life on Earth and digitise it, and second, comprehend other species.

What does it actually mean to see another life form?

During the first step of cataloguing life on Earth, Interspecies Money comprises both to have a dynamic digital twin representing the physical animal, and an additional account which will hold some financial value. This value would be distributed based on being observed and providing simple services. To give an example, let us assume that a giraffe or a herd of giraffes receives a stable digital identity, which allows humans to take pictures of the giraffe/s and then be rewarded for those images. Another example referred to straw-coloured fruit bats, which have a collective intelligence, they are capable of flying 50-80 kilometres and they drop their seeds in their droppings of the fruits they have already eaten. The relevance of this is that one can say that the entire Congolese rainforests are seeded by them, thus Professor **Ledgard** emphasised just how important they actually are. But a key question is how to attract money, at significant scale, into this direction.

Moving on, **Ledgard** presented to us the structure of the Interspecies Money Group. It includes different working groups on computer science and conservation, while others will be developed (including law and economics). The end goal or question is whether it would be feasible to create a central bank and digital currency – a Bank for Other Species. So, in proving that other species also hold value, they could gain a distinct digital currency.

Questions and answers

A Ph.D. researcher referred to the motivations that drive individual actions for a common goal – egoism, altruism, collectivism and principlism – and asked whether Professor **Ledgard** recognized egoism to be more effective in solving collective actions, particularly when and where states failed. Instead of assuming that this would be the most likely scenario, **Ledgard** stressed that he believes that other species will, in some way, represent their interests, basically they will be dispersing something of value in return for their representation of interests.

An EUI Professor asked whether this is capitalist or post-capitalist. **Ledgard** thinks that by including nonhumans in the human economy, what happens is corrupting extreme capitalism. These new forms of agency won't be interested in buying properties, but they will hold money and spend it on basic existence values.

An EUI Professor asked about how this will be put in place, for instance, will gorillas get all the money because they are gorillas, whereas termites won't. Professor **Ledgard** admitted that this might be the initial mindset, but it will quickly change once we will understand that, to take the example of the termites, they are at the very base of the ecosystem, meaning that they actually provide most of the services. And the reasoning couldn't be simpler, as the money would be coming from institutional finance, which wants to become more regenerative, thus they will invest more money into smaller species.

A Ph.D. researcher asked for some more clarifications about the politics proposed in the talk. She referred to the pool of money that comes from agreements and then the money would somehow be distributed among other species. She then asked how this Bank of Other Species would work, given that Professor **Ledgard** has previously in his work compared it to the Bank for International Settlements, thus won't it also imply a risk of winners forcing losers. Her next questions referred to the infrastructure, how and who would decide which species gets money and how much. **Ledgard** said that there will be a disruption in the way we currently think about communities. Right now, most communities do not receive any value or agency, thus we need to think in terms of an open system, and it remains to be seen to what extent a digital layer

can be applied in order to bring humans and nonhumans. As regards the second question, indeed it is quite complicated to determine the infrastructure. Then, he suggested looking at the 700 out of the 2700 species on the IUCN Red List of Threatened Species, where there is at this moment no work done at all.

Another EUI Professor suggested to attribute the money based on the species' contribution to human welfare, and to understand each species' contribution one could compare, returning to the bats example, how bad would it be without their contribution in the Congolese rainforests. He asked whether the Professor would rather be in favour of meritocracy or rather needs, or any other characteristic. Professor **Ledgard** reiterated that interspecies reveal profound new relationships, developed as a result of the recent discoveries. And while we believe we have discovered a lot in the last decades, **Ledgard** assures us that we will discover a lot more in the next ones. As regards meritocracy, he believes that Interspecies Money will flow towards the smaller life forms, thus the problem of meritocracy is slightly resolved.

A Ph.D. researcher asked whether Interspecies Money could contribute to the human rights debate, particularly referring to the intergenerational principle established in environmental law – which states that we hold the Earth together with past and future generations, as well as puts an obligation on our generation to not leave the Earth worse than we have found it. Professor **Ledgard** took a more optimistic stance and believed that we can observe this from another angle. Indeed, from one point of view, the next generations – he referred particularly to the poorer communities – will likely be unemployed. But this creates the opportunity for more people to become concerned and to actively contribute to the regeneration of nature and the recovery of species.

A Ph.D. researcher asked whether the proposal put forward in this talk is dependent on these communities being poor, in the sense of people will be interested to contribute or to be part of the Interspecies Money only if not given the opportunity to have a different, maybe better activity. **Ledgard** does not believe that the entire community would need to be involved in the task making, but we should keep in mind that his proposal refers to a distributed system, with large blocks of money and divided into millions of tasks.

An EUI professor raised the question of unintended consequences, by creating a regenerative system, there will also be new opportunities for blackmailing for example. Thus, is there really a need to create a new digital currency? Professor **Ledgard's** answer referred to it being more cost-effective to have a new digital currency, considering the desire to distribute very large amounts of money, billions of dollars a year for several decades.