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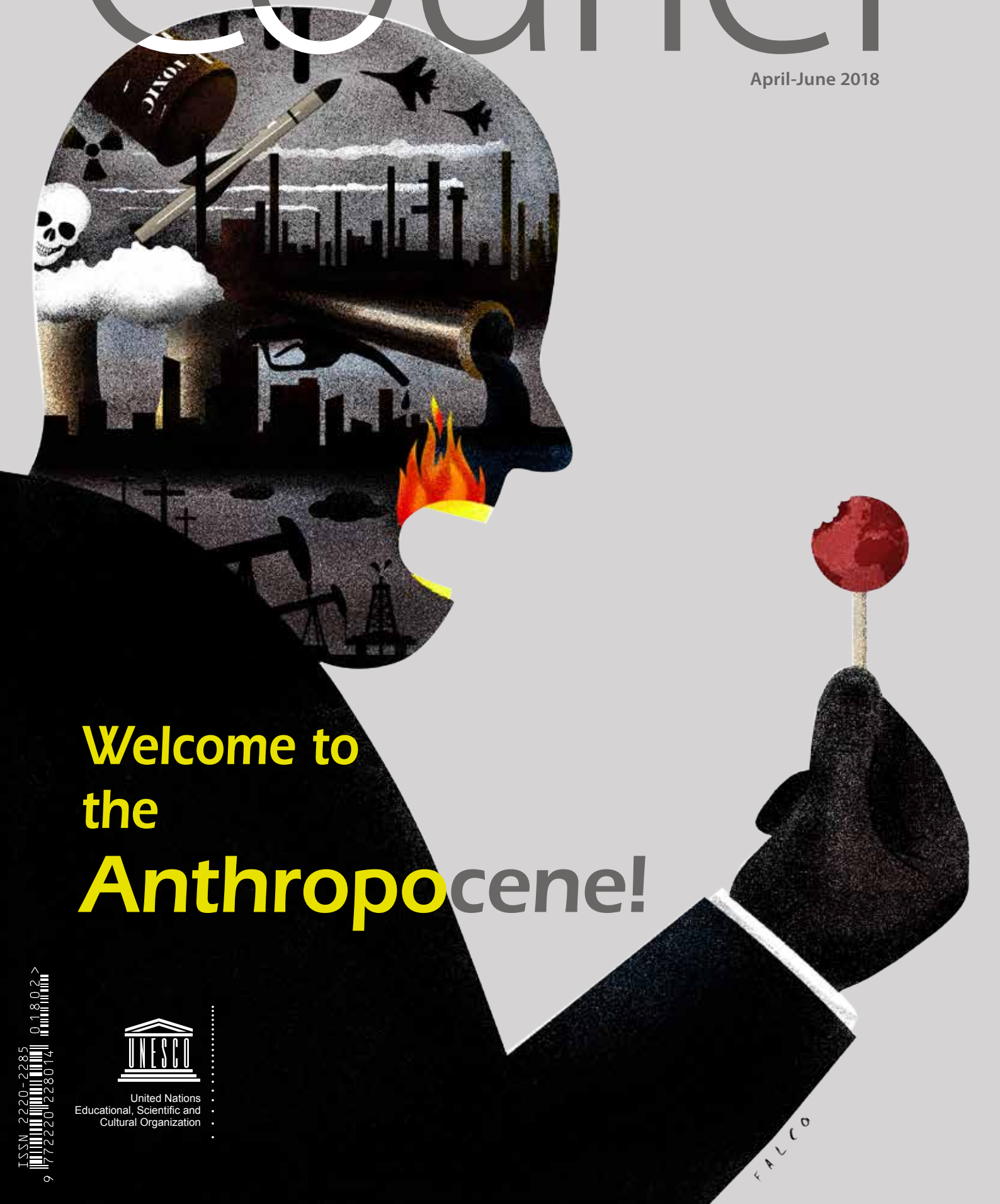
April-June 2018



Welcome to the Anthropocene!

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THE UNESCO Courier

Waiting for the heroes to come

Marine debris football, part of the PENALTY series by British artist Mandy Barker.

As you begin reading this April-June 2018 issue of the *Courier*, you are living in the Phanerozoic eon, the Cainozoic era, the Quaternary period and the Holocene epoch. These are all subdivisions of our planet's geological timescale, to which a new bar will probably soon be added – the Anthropocene.

The Earth entered the Holocene (from the Greek "entirely" and "recent") more than 10,000 years ago. But human activities have had such a significant and generalized impact on the planetary system that, for the past few decades, scientists have been wondering whether we should be speaking of a new epoch. To describe this new epoch, the American biologist Eugene F. Stoermer initially coined the term Anthropocene (from the Greek "human being" and "recent"), popularized in the early 2000s by the Dutch atmospheric scientist and Nobel laureate in chemistry, Paul Crutzen. Since then, it has stirred up endless debates in the scientific community and caused a great deal of angst among those who have heard about it.

It is now up to the international community of palaeontologists, geologists and stratigraphists – in particular, the International Commission on Stratigraphy and the International Union of Geological Sciences (IUGS) – to determine whether there is indeed a new geological epoch or whether the Anthropocene will go down in future encyclopaedias as a philosophical construct aimed at alerting humans living in the twentieth and twenty-first centuries of the threats their activities posed to the planet.

While awaiting this verdict, the scientists continue to argue, plead and quarrel. How should we date the beginning of this hypothetical new epoch? In other words, how long have we supposedly been responsible for a process that could prove fatal for our planet? For some, the Anthropocene is just another name for the epoch that we call the Holocene.

After all, humans began to exert pressure on the environment over 10,000 years ago – since their sedentarization and the invention of agriculture. For others, the Anthropocene started with the industrial revolution, in the eighteenth century. Still others view the beginning of the Anthropocene as coinciding with the release of the first atomic bomb in 1945.

In spite of these disagreements, all but a very few acknowledge that in the last half-century, the state of the planet has deteriorated more rapidly and more dramatically than ever before. There are gigantic amounts of plastic on beaches and in the seas; an unprecedented development of new substances that are covering the Earth's surface and which are rarely recycled; soils that are overflowing with fertilizers; increasing acidity of the oceans; unprecedented levels of pollution; the erosion of tropical forests; the disruption of ecosystems; the massive extinction of species and a drastic loss of biodiversity, and global warming at an alarming rate – the list goes on.

Who is to blame for all this? "Humans!" is the resounding reply of most scientists. It remains to be determined whether we – the world's rich and poor – should all bear the same burden of responsibility. There are some who blame, above all, the capitalist system created by the West, and speak of the Capitalocene or Occidentalocene. Are we all heading for a catastrophe? The voices of doom are prophesying the end of the world! Concepts like Chthulucene and Thanatocene are being put forward to warn us that there is a monster on the loose, that death is stalking us. Some more moderate experts are just as concerned about the indecision, and therefore, inaction, of our decision-makers. "It seems as though humanity is being lethargic – waiting for the end of the film, when the heroes arrive to sort everything out, and we can all live happily ever after," as one of the articles in this issue concludes.

Meanwhile, the debate rages on, the solutions are slow to come. The *Courier* takes stock of the situation.

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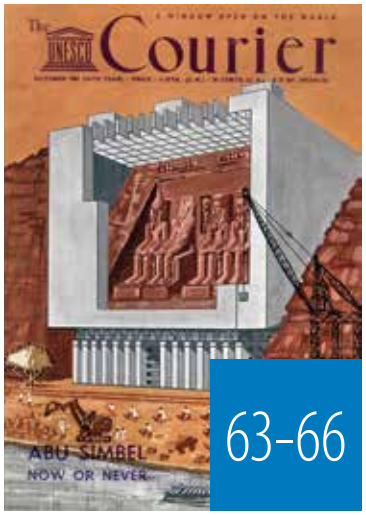

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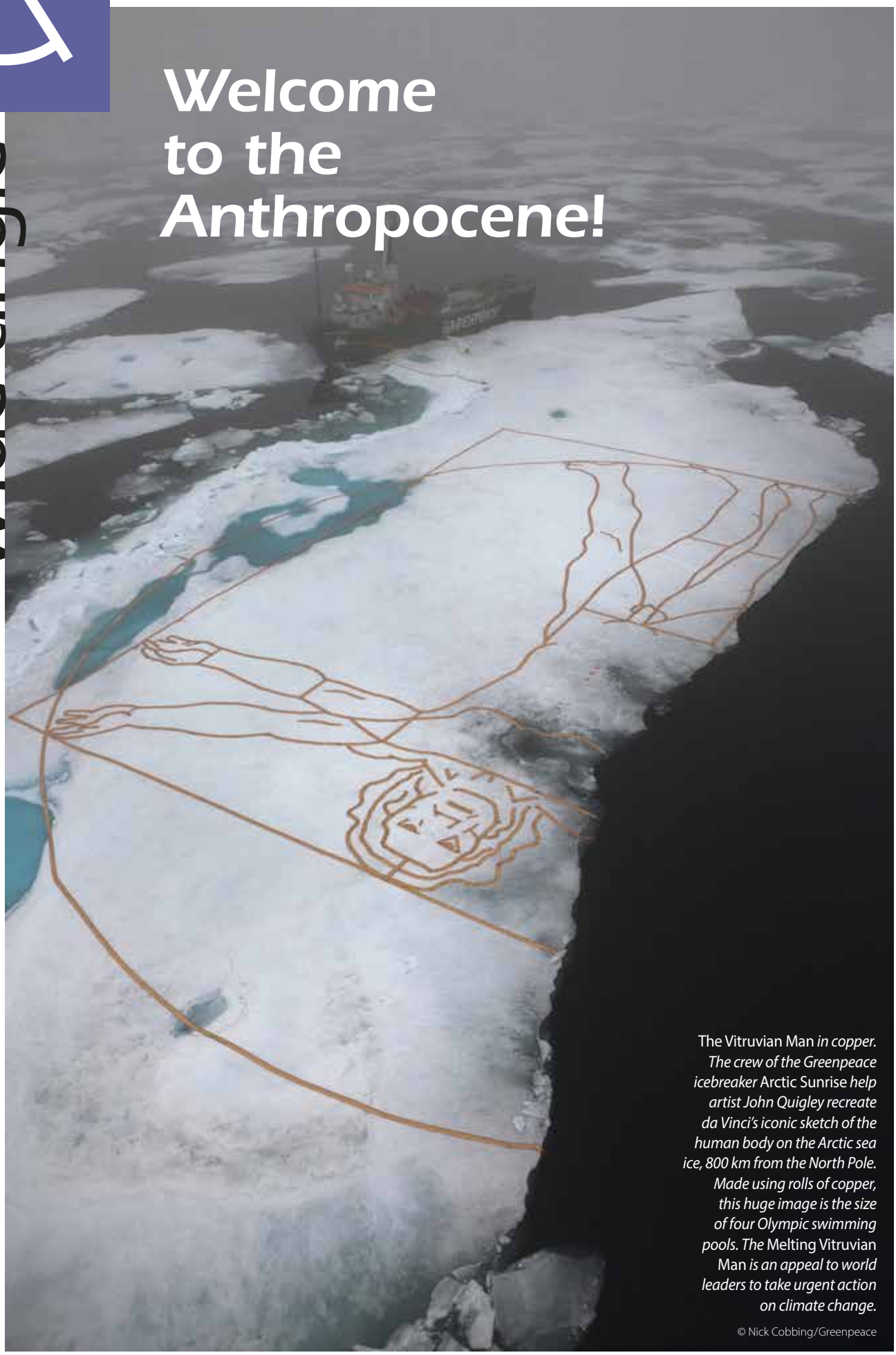
Welcome to the Anthropocene!



The Vitruvian Man *in copper. The crew of the Greenpeace icebreaker* Arctic Sunrise *help artist John Quigley recreate da Vinci's iconic sketch of the human body on the Arctic sea ice, 800 km from the North Pole. Made using rolls of copper, this huge image is the size of four Olympic swimming pools. The* Melting Vitruvian Man *is an appeal to world leaders to take urgent action on climate change.*

Anthropocene:

the vital challenges of a scientific debate

Liz-Rejane Issberner and Philippe Léna

The term Anthropocene was coined to take into account the impact of the accelerated accumulation of greenhouse gases on climate and biodiversity, and also the irreversible damage caused by the over-consumption of natural resources. But do we need to turn this into a new geological epoch? While the debate continues among scientists, solutions have yet to be found. We are, in effect, witnessing a collective form of denial – the result of a naive faith in progress, consumerist ideology and powerful economic lobbies.

The term Anthropocene appears in the titles of hundreds of books and scientific articles and in thousands of citations. Its use in the media also continues to grow. Defining Earth's most recent geological epoch in which human actions have started to provoke biophysical changes on a planetary scale, the word was coined in the 1980s by American biologist Eugene F. Stoermer and popularized in the early 2000s by Paul Crutzen, the Dutch atmospheric scientist and winner of the Nobel Prize in Chemistry 1995. The scientists noticed that these changes were leading the Earth system away from the relative equilibrium it had known since the beginning of the Holocene, 11,700 years ago.

© Daniel Beltrá/Greenpeace

Aerial photograph documenting deforestation in the northern area of Pará State, Brazil (2013). According to the French newspaper Le Monde, *Brazil reduced deforestation by 84 per cent between 2004 and 2012 before it started to increase again.*

They proposed that the beginning of this new epoch should be symbolically set at 1784, the year in which Scottish inventor James Watt substantially improved upon the steam engine with new inventions – it also corresponded to the beginning of the Industrial Revolution and the use of fossil fuels.

From 1987 to 2015, a vast, multidisciplinary research project, the International Geosphere-Biosphere Programme (IGBP), collected a mass of data on anthropogenic changes to the Earth system.

Other research, started in the 1950s and based on samples of ancient ice from the Antarctic and the present composition of the atmosphere – analysed at the Mauna Loa observatory in Hawaii, United States – have revealed an accelerated build-up of greenhouse gases (GHG), essentially carbon dioxide (CO_2). In 1987, the Intergovernmental Panel on Climate Change (IPCC) was set up to evaluate the impact of these phenomena on climate.

The Great Acceleration

By pooling this data, in 2009 and again in 2015, environmental scientists Johan Rockström (Sweden), Will Steffen (US) and their colleagues at the Stockholm Resilience Centre drew up a list of the nine planetary boundaries that it would be dangerous to cross.

Four of these boundaries have already been crossed – climate change, vegetation cover, biodiversity loss and extinctions (the Sixth Extinction) and biogeochemical flows – with phosphorus and nitrogen cycles playing a particularly crucial role. They also showed that all available indicators on the consumption of primary resources, energy use, population growth, economic activity and biosphere degradation, skyrocketed after the Second World War. This period was dubbed the Great Acceleration. Other observers have even spoken, since the 1970s, of a period of hyper-acceleration. These trends are believed to be unsustainable.

Metaphor or real geological epoch?

There seems to be a consensus that several parameters of the Earth system have recently started to develop beyond the spectrum of the natural variability of the Holocene – it is now more or less accepted that the term Anthropocene be used, to specify changes that are of human origin. A handful of scientists have nevertheless decided to go beyond using the term metaphorically or as a practical, interdisciplinary reference tool. They have proposed that the Anthropocene, just like the Holocene and the Pleistocene, should be elevated officially to the rank of geological epoch.

An Anthropocene Working Group (AWG) has been set up to present this proposal to the International Union of Geological Sciences (IUGS). But for a new epoch to be named by stratigraphers, there has to be an observable and universal rift between the sedimentary layers of two epochs. Although the presence of anthropogenic carbon has been noted in sediments since the 1850s, this is not considered to be sufficient.

© Guillaume Bression - Carlos Ayesta (www.fukushima-nogozone.com)

Bad Dreams, *part of a series by photographers Guillaume Bression and Carlos Ayesta in the no-go zone around Japan's Fukushima nuclear power plant, in 2013. The artists, from France and Venezuela, chose to use transparent plastic to depict radiation, which is both invisible and odourless.*

The AWG is therefore suggesting that the change of epoch should be in 1950, the year in which various chemical constituents and plastic particles of anthropogenic origin began to appear in sediments. This is also the beginning of the Great Acceleration. In any event, a possible failure to recognize the Anthropocene as a geological epoch would in no way invalidate the scientific use of the term as it stands today.

The concept of the Anthropocene has sparked several controversies in spite of its brief existence – the term itself has been queried. Historians and anthropologists have questioned the reference to *anthropos*, the generic human being.

After all, who's responsible for crossing the biogeophysical boundaries if not Western humans and a particular socio-economic system? This has led to several alternative proposals – Occidentalocene, etc. Others, such as specialists in global or environmental history, feel that there is no ontological discontinuity and that the exceptional nature of Western growth (the Great Divergence) will have to be repositioned in the longer term.

According to them, humans have always – or at least for the last 40,000 years – had an increasing impact on their surroundings. They have contributed, for example, to the disappearance of American and Australian megafauna. Some researchers are thus arguing for a long Anthropocene, with sub-periods, such as capitalist industrialization (1850-1950) and the Great Acceleration. Most, though, recognize the need to abandon a linear and deterministic vision of historical time.

Since the end of the Second World War, several scientists have warned of the non-generalizable and unsustainable character of the Western economic model. No boundary had yet been crossed, and humankind had consumed less than one planet. But the process had been set in motion. In the early 1970s, the situation worsened, the warnings multiplied, and the scientific data accumulated. On both these occasions, a historical change of course would have been possible. It has become more difficult today.

Collective denial

Why are we refusing to see this? There could be a number of reasons: a blind faith in progress and development – in other words, in a system which increases available wealth indefinitely – and a belief in the capacity of science and technology to solve all problems and negative externalities (like pollution, for example); powerful interests that benefit from this process and carry out intense lobbying; the media takeover of the minds of consumers, creating a hunger for individual consumption, as much for comfort as to set oneself apart and be recognized.

It is surprising that the human and social sciences have avoided this issue for so long, given that it will determine the future of humanity. Besides being anthropocentric by definition, these disciplines believe that the field belongs to the natural sciences, par excellence.

The emergence of the concept of the Anthropocene confers upon them the responsibility of explaining how human societies have been able to provoke changes of such magnitude to the modus operandi of the planet, and what differentiated impacts they will have on the world map. The social sciences and humanities should be developing and acquiring new subjects and knowledge to respond to the questions raised by this new epoch – including natural disasters, renewable energy, the depletion of natural resources, desertification, ecocide, widespread pollution, migration, social and environmental injustice.

The slow and feeble reactions of politicians – and of societies in general – to climate change, is also astounding. A mathematical analysis of networks of citations has shown that in scientific articles on the subject, there has been a consensus, since the early 1990s, that climate change exists. Given that the crisis is worsening, it is hard to understand why efforts to reduce GHGs have been so half-hearted. What obstacles are preventing international negotiations from being more effective? Besides the intentionality of these so-called obstacles, there is no doubt that communications between science and society are sluggish, at least when it comes to the climate question. To address this, the IPCC has adopted a new approach for its Sixth Assessment Report (AR6), designed to raise awareness among the general public, not just decision-makers.

Overcoming deadlocks

One of the stumbling blocks of the Anthropocene is that to tackle it, the delicate subject of environmental justice has to be addressed. Climate change will amplify the existing risks, and create new ones, for natural and human systems. Yet these risks are not distributed equally, generally affecting disadvantaged individuals and groups the most. But it is not easy to find a satisfactory solution to this problem, given the heterogeneity of countries in terms of their level of development, size, population, and natural resources, etc.

© Mandy Barker/Greenpeace

WHERE? – No one wears a watch, *a visual interpretation of the journeys plastics make, the time it takes for them to degrade, and their impact on the environment. It features plastic items collected from islands off the west coast of Scotland (United Kingdom).*

What's more, the human ecological footprint has already overtaken, by fifty per cent, the planet's capacity for regeneration and absorption, and eighty per cent of its population lives in countries whose biocapacity is already smaller than its ecological footprint. A country like Brazil (and other countries on the American continent) still possesses a large biocapacity surplus, even though it consumes 1.8 planets. But twenty-six per cent of its GHG emissions are due to deforestation. A significant part of its ecological footprint comes from exporting primary products, which is the reason for a large proportion of this deforestation. The competitive globalized system tries to find supplies at the least cost, encouraging extractivism in many countries, and land-grabbing in others.

Even if it were possible to suppress all carbon dioxide emissions in high-revenue countries right now, it would still not be enough to reduce the global carbon footprint and meet the limits imposed for the biosphere until 2050. In other words, in spite of the considerable differences in the size of their economies and their reserves of natural resources, all countries need to try to remedy the most pressing problem of the Anthropocene – by drastically reducing their GHG emissions.

This is exactly what leads us to the deadlocks that usually arise in international negotiations – the search for culprits that then dissuades countries from making commitments, for fear of compromising their economic growth and their jobs, or antagonizing powerful interests. The solution that was reached in the Paris Agreement, signed on 22 April 2016, was to ask countries to make voluntary commitments, rather than impose criteria established on a planetary scale. This means each country commits to meet targets for reducing its emissions in line with what it considers to be viable.

This approach has helped to overcome deadlocks and to make action possible. But it has also created a tangle of assessment criteria that complicates comparisons between national efforts. Also, in spite of its universal character, the Paris Agreement does not provide for sanctions against countries that default on their commitments. This is a sign of the weak governance of the climate question which, in the absence of an institution mandated to carry it out, is incapable of prevailing over the economic interests of countries and enterprises.

Submerged under contradictions, dilemmas and ignorance, the extremely serious environmental issues of the Anthropocene are not getting the required level of priority on national and social agendas.

It seems as though humanity is being lethargic – waiting for the end of the film, when the heroes arrive to sort everything out, and we can all live happily ever after.

Liz-Rejane Issberner (Brazil) is an economist and senior researcher at the Brazilian Institute of Information in Science and Technology (IBICT) and professor at the Postgraduate Programme in Information Science (IBICT with the Federal University of Rio de Janeiro). **Philippe Léna** (France), is a geographer and sociologist, and emeritus researcher at the French National Research Institute for Sustainable Development (IRD) and the National Museum of Natural History (MNHN), Paris.

Humans are a geological force

© Gideon Mendel (gideonmendel.com/submerged-portraits)

Francisca Chagas dos Santos in Rio Branco, Brazil, March 2015. Photo from the Submerged Portraits *series, one of four parallel elements of the Drowning World project started in 2007 by South African photographer, Gideon Mendel, which highlights our vulnerability to global warming, through the personal stories of victims.*

Dipesh Chakrabarty, interviewed by Shiraz Sidhva

While modern technological advances have allowed us to flourish as a species, we may have catapulted ourselves out of the Darwinian evolutionary scene. Human beings have acquired the role of a geological force, capable of stalling an Ice Age – and possibly driving another Great Extinction of life in the next 300 to 600 years. It may not be easy, but, argues historian Dipesh Chakrabarty, it is not too late to change course.

You have said that anthropogenic explanations of climate change spell the collapse of the age-old humanistic distinction between human history and natural history. Could you elaborate?

Until recently, we have thought of human history purely in terms of recorded history, which goes back a few thousand years. A pre-history adds a few more thousand years. But climate change science has required us to think about the place of humans in the history of the planet since they appeared. Because you had to understand what the planetary processes were and how the planet has managed to keep in place, not just the climate, which is friendly to us, but also oxygen at twenty-one per cent of the atmosphere for almost six hundred million years.

The more I read into climate change science and eventually, into geology and biology, the more I realized that how late we have come in the history of evolution. And that, not accidentally, because complex creatures like humans can only come very late in the story of evolution. The planet developed life and its conditions changed to eventually help sustain complex multicellular forms of life. This realization jolted me out of my habit as a modern historian – mainly of modern South Asia and the colonial period. Normally I used to deal with a world that was not more than 500 years old – the news of climate change altered that.

Like many historians, I used to think of the natural world as a backdrop, where the main actors were human. The assumption within which many of us worked – that what matters in human history is what humans do to one another – didn't seem untrue, but it seemed limited.

A lot of history told two stories – how humans eventually came to free themselves from the constraints placed on them by nature and natural causes; and how humans came to think of freeing themselves from the oppression of other humans.

As I have become aware now, the history of our evolution plays a very significant role, even in our short-term histories. For instance, humans cannot ever make any objects that we handle without the assumption that we have opposable thumbs. This is a matter of a very slow evolutionary history, which we usually take for granted. So we would talk of what kind of swords the Mughals produced, or what kinds of knives were used in Baghdad – assuming that there's always a human hand capable of holding or wielding these. That hand also has a slow history, which is the history of evolution.

What do you mean when you say humans exert a geological force today?

Human actions are now changing the climate of the whole planet. Taken together, we wield a kind of force that is so great that it can change the usual cycle of Ice Ages followed by interglacial periods – a cycle of, let us say, 130,000 years. We have somehow acquired the role of a geological force – thanks to our pursuit of technology, population growth, and our capacity to spread ourselves all over the planet.

So far we have thought of human beings as biological agents, because we do things to our environment and to ourselves, we carry diseases, etc. We now have to scale up our imagination of the human – we are actually changing the face of the planet. It's not just its face we're changing – one of the places of the planet that human beings have transformed, and where our transformation will remain for the very long term, are the coastal sea beds – through deep-sea fishing, mining, etc. We can no longer separate the biological agency of humans from their geological agency.

© Gideon Mendel

Joseph and Endurance Edem with their children, Bayelsa State, Nigeria, November 2012.

Several historians of the long term have suggested that, as we developed a big brain and developed technology, we began to grow at a pace much faster than the evolutionary pace. The argument is that if we acquired deep-sea fishing technology at the pace at which evolutionary changes usually happened, then the fish would also have had time to learn how to avoid our dragnets. But we developed so much faster, that our ecosystem didn't have time to readjust. It's a fascinating idea that this one species has kind of catapulted itself out of the Darwinian evolutionary scene. And it is having such an impact on the history of life that many biologists say that we might be driving the Sixth Great Extinction of life in the next 300 to 600 years.

Could you explain your thesis that the history of capital must be crossed with the history of the human species?

People who study capitalism don't study evolutionary biology. But if they did, they might find a species called Homo sapiens that was once able to invent a modern industrial society or capitalism, or whatever you want to call it – that became its strategy for taking over the whole planet, and dominating life on it.

The spread of human beings all over the planet has only been possible in the last few thousand years. Capitalism is not as old as us, but if you look at what happened with the coming of big sailing ships, and then steamships, you can see that the continent of Europe itself distributed its population all over the world. So couldn't one argue that capitalism was the strategy for the species to take over the whole planet? Now that does mean the differentiation between rich and poor people, I agree, but both the rich and the poor are members of the species.

© Gideon Mendel

Anchalee Koyama stands in flood waters in the Taweewattana district of Bangkok, Thailand, November 2011.

Your remark that "the poor participate in the shared history of human evolution just as much as the rich do" has been critiqued by some of your colleagues. Could you explain?

I am as perplexed by Andreas Malm's response to some of my propositions that I thought were pretty much unexceptionable, as he is by my statements. I think the way he interprets my quote in his article (see page 24) is a little misleading. It gives the impression that I had suggested that the poor are immediately as responsible for carbon emissions as the rich.

I have never made such a claim, for everyone knows that the poor do not emit as much greenhouse gases as the rich, and that only a handful of nations are responsible for the major portion of anthropogenic emissions of these gases. So that is not the point.

The point is that Indian and Chinese arguments in defence of the use of coal and other fossil fuels (though this is being somewhat mitigated by the falling price of renewable sources of energy) in the interest of moving people out of poverty, acquire their significance from the fact that these are extremely populous nations and the number of poor people concerned is very large indeed.

The history of population, I suggested, belongs to two histories at once: the history of modernization, public health programmes, modern medicines, including antibiotics (in the production of which fossil fuels play a role), the eradication of pandemics, epidemics, and famines, etc; and the history of the human species. How could one deny that even poor humans belong to the species Homo sapiens? Don't poor people have opposable thumbs? Are they not part of our evolutionary history?

Never in the history of biological life on this planet have we had a species that managed to spread itself all over the world (that happened thousands of years ago, long before there was mass poverty) as humans have, and that also rose to the top of the food web in so short (in terms of evolutionary time) a period. If we do manage to improve the lives of seven billion, or eventually, nine billion people, the pressure on the biosphere will only increase. However, this is not an argument in favour of *not* improving the lives of the poor.

What I have tried to show in my work is the implication of most human beings' desire to industrialize and modernize. Take the examples of Jawaharlal Nehru (India), Gamal Abdel Nasser (Egypt), Julius Nyerere (Tanzania) and other Third World leaders of the 1950s and 1960s. They all wanted to modernize their countries – not as people who were just fascinated by technology, but because they thought it was the ethical thing to do. The reason Nehru wanted to build dams was mainly to grow more food (through irrigation) and save people from dying in famines.

The focus of political thinkers since the 1970s has been on human rights and on the flourishing of every individual human, irrespective of the numbers. Climate change and the attendant scientific propositions came at a time when we were enjoying precisely those things that climate scientists say may imperil our existence in the long run.

How much is globalization responsible for this?

We have globalized in the last thirty or forty years, and this has been made possible by increasing the technologies of connectivity. We all like the fact that we can communicate with our loved ones across the globe on a daily basis, or that we can fly across the world in a matter of hours to explore other countries or do business there, or to visit friends and family.

The globalization story means that we have actually come to love what could lead to our geological end – the capacity to impact the planet on a massive scale. But in terms of our life experiences, we see it as a condition for human flourishing.

There's a natural inertia in us, born out of historical attachments – to institutions, family structures, globalization – and all we are capable of thinking of is our immediate future. Humans think in terms of seventy to eighty years, of three or four generations, at most. This makes it very hard for us to come together and act in a synchronized manner to fight climate change. We see how difficult climate change negotiations – under the United Nations Framework Convention on Climate Change (UNFCCC) – have been. Besides, every country is also invested in its own development agenda.

Now that we are aware that we are not the masters and owners of nature, what kind of stories do you suggest we tell?

I think we should no longer tell stories of human hubris. I think the older story, that we are controlling nature, was a wrong story. The story we should tell is that here is a planet, which luckily for us, developed complex forms of life. We came to be here, and now we know that there is a planet-wide climatic system, that planetary processes – the geobiological and chemical processes – are important to our survival and to the survival of complex life. For instance, if you destroy soil, it takes millions of years to regenerate.

So we should definitely be less profligate, we should somehow find a way of living where we live, rationally, intelligently, and not consume so much. We also need to find some rational, democratic, non-violent and poor-friendly ways of bringing the population down.

How we get there is the most difficult question today. It's also very hard in today's world to tell people not to travel, or not to avail of the benefits of new technologies like smartphones, which we know deplete rare-earth materials. It is important to acknowledge our contradictions – between what we desire at the moment and the knowledge we have on climate change.

We need to have a different kind of society – we cannot sustain the current kind of capitalism for the next 100 or 200 years. It's not wrong to delegitimize consumerism and re-educate our own desires. And it is our responsibility to keep up this message, at universities and schools.

You have said that a crisis is a good time for renewed creativity.

As the crisis deepens, so will the creative responses to it. I think there will be charismatic leaders who will break the shackles of consumerism and inspire us, as Mahatma Gandhi once did.

Lucas Williams at the hunting grounds of the Lawshe Plantation in South Carolina, United States, October 2015.

Dipesh Chakrabarty (Australia and United States) is a historian of Indian origin. He is the Lawrence A. Kimpton Distinguished Service Professor in History at the University of Chicago, in the United States. He is the author of, among other publications, *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton University Press, 2000; 2008) and "The Climate of History: Four Theses," *Critical Inquiry*, 2009.

The unbearable burden of the technosphere

Jan Zalasiewicz

In the geological blink of an eye, a new sphere has emerged, and is evolving at a furious pace. Weighing thirty trillion tons, this is the technosphere. It includes a mass of carbon dioxide which is industrially emitted into the atmosphere – the equivalent of 150,000 Egyptian Pyramids!

The Earth that sustains us may be considered in terms of different spheres. There is the lithosphere, made up of the rocky foundations of our planet; the hydrosphere, representing our planet's water; and the cryosphere, comprising the frozen polar regions and high mountains. The atmosphere is the air we breathe, and we are also part of the biosphere, made up of the Earth's living organisms. These spheres have been in existence, in one form or another, for most, or all, of our planet's 4.6-billion-year existence. Most recently, a new sphere has emerged – the technosphere.

The technosphere, in the sense that we understand it, is a concept that has been developed by the American geologist and engineer Peter Haff, Professor Emeritus at Duke University, in the United States. Like the Anthropocene, it is growing rapidly in recognition – having, for instance, been the focus of a recent major initiative of Haus der Kulturen der Welt (House of World Culture), the international centre for contemporary arts in Berlin, Germany.

Technofossil (Samsung E570), *a pretend fossilized mobile phone sculpted in malachite rock by Belgian artist Maarten Vanden Eynde, in the Democratic Republic of the Congo (2015).*

Like the Anthropocene, the technosphere is controversial, not least because of the role – and constraints – it affords to humans. It suggests that we have far less freedom, collectively, to guide the Earth system, than we may think we have.

The technosphere encompasses all of the technological objects manufactured by humans, but that is only part of it. It is a system, and not just a growing collection of technological hardware. This distinction is crucial, and may be illustrated by comparison with the more established concept of the biosphere. Originally coined by the nineteenth-century Austrian geologist Eduard Suess, the term biosphere was developed as a concept by Russian scientist Vladimir Vernadsky in the twentieth century. He propounded that it was not just the mass of living things on Earth, but the combination of that mass with the air, water and soil that sustain organic life and the Sun's energy that largely powers it. More than the sum of its parts, the biosphere interlinks and overlaps with other spheres of the Earth, while having its own dynamics and emergent properties.

Tampering with nature

The technosphere, similarly, comprises not just our machines, but us humans too, and the professional and social systems by which we interact with technology – factories, schools, universities, trade unions, banks, political parties, the internet. It also includes the domestic animals that we grow in enormous numbers to feed us, the crops that are cultivated to sustain both them and us, and the agricultural soils that are extensively modified from their natural state to carry out this task.

The technosphere also includes roads, railways, airports, mines and quarries, oil and gas fields, cities, engineered rivers and reservoirs. It has generated extraordinary amounts of waste – from landfill sites to the pollution of air, soil and water. A proto-technosphere of some kind has been present throughout human history, but for much of this time, it took the form of isolated, scattered patches that were of little planetary significance. It has now become a globally interconnected system – a new and important development on our planet.

How big is the technosphere? One crude measure is to make an assessment of the mass of its physical parts, from cities and the dug-over and bulldozed ground that makes up their foundations, to agricultural land, to roads and railways, etc. An order-of-magnitude estimate here came to some thirty trillion tons of material that we use, or have used and discarded, on this planet.

The physical parts of the technosphere are also very various. Simple tools like stone axes were made by our ancestors millions of years ago. But, there has been an enormous proliferation of different kinds of machines and manufactured objects since the Industrial Revolution, and especially since the Great Acceleration of population growth, industrialization and globalization of the mid-twentieth century. Technology, too, is evolving ever faster. Our pre-industrial ancestors saw little technological change from generation to generation. Now, in the space of little more than one human generation, mobile phones – to take but one example – have been introduced to mass public use and have gone through several generations.

Plastiglomerates, *facsimiles of hypothetical future geological matter, made for the Manufacture of Rocks of the Future project, started in 2013 by French artist Jean-Pierre Brazs.*

Forming future fossils

One analogy here may help show the striking nature of this planetary newcomer. Technological objects, including mobile phones, may be considered technofossils geologically, because they are biologically-made constructs that are robust and resistant to decay; they will form future fossils, to characterize the strata of the Anthropocene.

Nobody knows how many different kinds of technofossils there are, but they already almost certainly exceed the number of fossil species known, while modern technodiversity, considered this way, also exceeds modern biological diversity. The number of technofossil species is continually increasing too, as technological evolution now far outpaces biological evolution.

While almost all of the biosphere's energy comes from the Sun, some of the technosphere is powered by solar energy too – and other renewable resources such as wind-power, but most is powered by the burning of hydrocarbons including oil, coal and gas. These non-renewable energy sources in effect represent fossilized sunshine that has been amassed deep in the Earth over hundreds of millions of years, and that is now being expended in just a few centuries.

Humans have used power sources such as watermills for millennia, but the enormous burst of energy now needed to power the technosphere is on a completely different scale. One estimate suggests that humans have collectively expended more energy since the mid-twentieth century than in all of the preceding eleven millennia of the Holocene.

Inundated with waste

The technosphere, though, differs from the biosphere in one crucial respect. The biosphere is extremely good at recycling the material it is made of, and this facility has enabled it to persist on Earth for billions of years. The technosphere, by contrast, is poor at recycling. Some of the waste is all too obvious, like the plastics accumulating in the world's oceans and on its shorelines. Other kinds, being colourless and odourless, are invisible to us, like the carbon dioxide from the burning of fossil fuels. The mass of industrially-emitted carbon dioxide in the atmosphere is now enormous – nearly one trillion tons, which is the equivalent of about 150,000 Egyptian Pyramids. This rapid growth in waste products, if unchecked, is a threat to the continued existence of the technosphere – and the humans that depend on it.

The technosphere is an offshoot of the biosphere and, like it, is a complex system with its own dynamics. The capacity of our species to form sophisticated social structures and to develop and work with tools were important factors in its emergence. However, Haff emphasizes that humans are not so much creators and directors of the technosphere, as components within it, and therefore constrained to act to keep it in existence – not least because the technosphere keeps most of the current human population alive, through the supplies of food, shelter and other resources that it provides. Its development has allowed the human population to grow from the few tens of millions that could be kept alive by the hunter-gatherer mode of life in which our species evolved, to the 7.3 billion that inhabit the planet today. Just one technological innovation – artificial fertilizers made using the Haber-Bosch process – keeps about half the human population alive.

The technosphere today is not evolving because it is being guided by some controlling human force, but because of the invention and emergence of useful technological novelties. There is now a kind of co-evolution of human and technological systems.

Altering planetary conditions

Currently, the technosphere might be regarded as parasitic on the biosphere, altering conditions of planetary habitability. Obvious consequences include greatly increased (and accelerating) rates of extinction of species of plants and animals, and changes to climate and ocean chemistry that are largely deleterious to existing biological communities. These changes can in turn damage both the functioning of the biosphere and human populations. Ideally, therefore, humans should try to help the technosphere develop into a form that is more sustainable in the long term. Nevertheless, humans collectively have no choice but to keep the technosphere operative – because it is now indispensable to our collective existence.

Working out the degrees of freedom, within this context, for effective socio-economic and political action, is one of the challenges that the evolving technosphere presents us with. A first step here is to more fully understand the workings of this extraordinary new phase in the evolution of our planet. Here, there is still much to do.

Jan Zalasiewicz, a British geologist of Polish origin, is professor of Palaeobiology at the University of Leicester, United Kingdom. He has worked as a field geologist and palaeontologist for the British Geological Survey, and is Chair of the Anthropocene Working Group of the International Commission on Stratigraphy, since 2009.

The little frog that lost its lustre

Karla Jiménez Comrie

Female Panamanian Golden Frog, Atelopus zeteki.

CC BY 2.0 photo by Brian Gratwicke

Many scientists view the massive disappearance of several varieties of Central American frogs as a sign of the Sixth Extinction. This is one of the indications that we are entering the Anthropocene, that some believe will mean the wiping out of a quarter of the world's mammals, forty per cent of amphibians, corals, and many other species. In Panama, scientists and national leaders are in a race against time to prevent a legendary species, the golden frog, from disappearing forever. Investigations have shown that humans are indeed responsible, having introduced into South America an invasive fungus that is highly toxic to amphibians.

According to a pre-Columbian legend from the heartlands of Central Panama, the golden frog brings good luck. Anyone who sees one or manages to capture one will have a happy future. Its bright yellow livery, speckled with coffee-coloured patches, was a source of delight for indigenous tribes, who thought that when the amphibian died, its tiny body turned to solid gold.

Discovered on the outskirts of the small town of El Valle de Antón and the Altos de Campana National Park, and endemic to the central area of the Isthmus of Panama, the golden frog – *Atelopus zeteki* – has long frequented and decorated the streams and rivers of the Panamanian jungle. Panama has made the golden frog an ecological and cultural symbol, even dedicating a national day – 14 August – to it. The frog is so popular that it adorns arts and crafts objects, jewellery, festival posters, and even lottery tickets. It also lends its name to hotels, craft beers and boutiques. This hasn't stopped it from disappearing from the forests of the isthmus, though.

According to Panamanian herpetologist Roberto Ibáñez, a researcher at the Smithsonian Tropical Research Institute (STRI) in Panama, the first signs of decline were noticed between 1993 and 1996. Edgardo Griffith, a Panamanian biologist, remembers seeing dying frogs at the end of 2005, during an expedition in El Valle de Antón.

It was not known why they were dying, but Griffith's alarm coincided with other research questioning the status of the amphibian. The frogs were seen for the last time in the wild in 2007 – in a short video scene shot by the BBC for one of its *Life in Cold Blood* documentaries on reptiles and amphibians.

The cause of this massacre turned out to be *Batrachochytrium dendrobatidis* (also known as Bd), a chytrid fungus that is threatening the global population of amphibians by transmitting chytridiomycosis, a disease which, Ibáñez explains, "infects the frog's skin, disturbing the way it functions".

One of the functions of the frog's epidermis is to maintain the balance of water and mineral salts between the animal's body and its environment. In frogs infected with Bd, the transport of electrolytes is disrupted, reducing concentrations of sodium and potassium in the blood, and leading to cardiac arrest.

An invasive fungus

Where does Bd come from? Probably Africa. This is at least is the most widely accepted hypothesis among Panamanian biologists. The Bd chytrid occurs naturally in the epidermis of the South African amphibian, *Xenopus laevis* – the frogs were used extensively in human pregnancy tests starting in the 1930s. Unaware that *Xenopus laevis* was the vector for this disease, the amphibian test was exported to other parts of the world, causing the disease to spread.

In Panama, it is thought that the fungus was transmitted through contact with these amphibians, says Ibáñez. He points out that the chytrid has already spread throughout the country and is now infecting other amphibian species. As a result, the International Union for Conservation of Nature (IUCN) has classified Bd as one of 100 of the world's worst invasive alien species, because of its "disastrous impact on biological diversity".

Griffith describes it as a "very effective organism, which reduces biodiversity, changes demographics and the dynamics of reproduction, and wipes out 100 per cent of the individuals of certain species". It is present everywhere – in Panama as well as in other Latin American countries.

© Courtesy of Diario La Prensa, Panama

During the Golden Frog Festival, held every year at Smithsonian's Punta Culebra Nature Center in Panama City, children learn more about the amphibian that has become the ecological and cultural symbol of their country.

A Noah's Ark for amphibians

Though no effective treatment against the disease is available today, scientists hope to reintroduce the golden frog to its natural habitat one day. In 2011, the government launched an Action Plan for the conservation of the amphibians of Panama. Involving three components – research, conservation, and education – it is a first step towards resolving the problem. The El Valle Amphibian Conservation Centre (EVACC Foundation), led by Griffith, is also working for the preservation of the golden frog – although, at this stage, it is still being kept in captivity. The Centre's zoo is home to around 4,500 frogs, 1,000 of which are of the golden variety.

> "Scientists hope that it is possible to reintroduce the golden frog into the wild one day"

At the other end of the country, in Gamboa – at the edge of a tropical rainforest in the former Panama Canal area – Ibáñez directs the Amphibian Conservation and Rescue Project. Created *ex situ* in 2009, the project aims to ensure the reproduction of endangered species, especially those affected by the chytrid fungus. It's a kind of Noah's Ark, which uses captive specimens in an endeavour to reconstitute populations of the most threatened species – until an effective treatment is found for the Bd fungus. Based twenty-two kilometres outside Panama City, the centre holds 1,200 examples of frogs belonging to nine species – with the exception of the golden frog. But Ibáñez says he hopes to receive some specimens of *Atelopus zeteki* from EVACC by the end of 2018.

Will the golden frog regain its former lustre? The scientists are convinced it will. Until then, we must hope that the little creature will, itself, have the happy future it symbolizes for the people of Panama.

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Climate change raises conflict concerns

Caitlin E. Werrell and Francesco Femia

The effects of global warming on the world's physical landscape often lead to geopolitical changes that threaten to destabilize already vulnerable regions, like the Horn of Africa. The stresses on natural resources undermine the capacity of nations to govern themselves, and increase the chances of conflicts. When compared to other drivers of international security risks, climate change can be modelled with a relatively high degree of certainty. But between predicting and preparing, there is still a long way to go.

© UNphoto/Tim McKulka

The current rate of climate change – higher seas, decreased ice in the Arctic, melting glaciers, extreme rainfall variability, and more frequent and intense storms – are scenarios that settled human societies have never experienced before. These dynamics will impact the foundational resources that people, nations – and the world order built on those nations – depend on for survival, security and prosperity: particularly food and water. These impacts are already contributing to increased state fragility and security problems in key regions around the world – conflict in the Middle East and Africa, tensions over fisheries in the South China Sea, and a new political and economic battleground in a melting Arctic Ocean.

Climate change, by altering the world's physical landscape, is also changing its geopolitical landscape. If governments are unable to mitigate this, the risks of conflict and instability will increase, and become more difficult to manage. This is the case in many regions around the globe. However, the Horn of Africa is particularly vulnerable, given a combination of structural fragilities and the significant exposure to climate change risks. This raises the likelihood of conflict and instability on the peninsula.

A fragile epicentre

Over time, climate change stresses on natural resources – combined with demographic, economic and political pressures on those resources – can degrade a nation's capacity to govern itself. This includes its ability to meet its citizens' demands for basic resources – like food, water, energy and employment – also known as its output legitimacy. The threat to output legitimacy can contribute to state fragility, internal conflict, and even state collapse. Seen through this lens, climate change may present a serious challenge to state stability and legitimacy in the Horn of Africa – a region already grappling with numerous challenges before climate change became a factor.

An elderly woman, displaced from her home during the Sudan conflict in 2008, waits for her ration of emergency food aid.

These challenges have recently been confirmed by the United Nations Security Council in a January 2018 Statement by its President: "The Security Council recognises the adverse effects of climate change and ecological changes among other factors on the stability of West Africa and the Sahel region, including through drought, desertification, land degradation and food insecurity, and emphasizes the need for adequate risk assessments and risk management strategies by governments and the United Nations relating to these factors."

According to the Fragile States Index of The Fund for Peace, the Horn of Africa includes some of the most vulnerable states in the world – Somalia, Ethiopia, Eritrea, Kenya, Sudan and South Sudan. The region also exhibits some of the clearest indications of a connection between climate change and conflict – namely, conflicts between agricultural and pastoral communities precipitated by climate-exacerbated droughts and water variability.

For example, prolonged climate-exacerbated extreme drought, such as in Somalia in 2011, can add additional stresses to already tense and resource-scarce scenarios. These stresses could increase tensions and conflict between communities, and precipitate the need for people to move – impacting the prices of livestock and other goods. This could also lead to an increase in malnutrition and disease outbreaks, and adversely impact food security (For more information, see: *American Journal of Agricultural Economics*, Volume 96, Issue 4, 1 July 2014, pp. 1157–1182).

Local tensions over access to food and water resources can spill over into neighbouring countries, as people seek to find additional resources and safety – placing more strain on the resources of those countries, which could amplify tensions. In these instances, climate change does not directly cause conflict over diminishing access to water, for example, but it multiplies underlying natural-resource stresses, increasing chances of a conflict. These are scenarios that, in the absence of better governance and natural resource management, are going to become increasingly pronounced in the future.

Changing geopolitical landscape

Several studies, combined with models and foresight exercises, show with increasing accuracy, the way in which changes in climatic conditions can, if left unmitigated, scale up to higher-order security situations, including a higher likelihood of conflict. A lot of the research to this point, however, has focused on the links between climate change, increased rainfall variability, and conflict. Other scenarios in which climate impacts and security intersect and combine to form the foundation of a new geopolitical landscape include:

• Sea-level rise and coastal cities
Urbanization is occurring rapidly in the Horn of Africa, including along the coast. Coastal cities with burgeoning populations, like Mogadishu (Somalia), Djibouti City and Mombasa (Kenya) are vulnerable to sea-level rise. Rising sea levels threaten to inundate critical infrastructure in these cities, contaminate freshwater supplies through saltwater intrusion, reduce arable land, and potentially displace large numbers of people.

• Dangerous seaways
The Gulf of Aden is a critical waterway along the Horn of Africa. As climate change further narrows economic opportunities in the region, an even greater increase of piracy along the coast is likely. Indeed, research has shown that there is a significant overlap between countries showing a high incidence of piracy attacks (off the coasts of Somalia and Eritrea), and the most significant climate vulnerability in Africa. This paints a worrying picture of the kinds of overlapping risks that can perpetuate state failure in the Horn.

• Fish and food security
Ocean acidification and warming are contributing to the migration and depletion of fish stocks around the world, including along the coast of the Horn of Africa – though the lack of extensive monitoring in this region means there is a gap in the knowledge of the extent of the impacts. Changing ocean chemistry and temperatures can increase the likelihood of international tensions between countries and subnational actors of the Horn that share a coastline – including a heightened potential for conflict over fishing, as their respective fishing fleets roam into neighbouring waters, or compete over dwindling stocks in international waters.

• Migration
Droughts, coupled with other factors, are already increasing pressure on people in Africa and elsewhere to move. Those without the means to move also risk becoming "trapped", or unable to move to more secure locations. In the future, decreases in precipitation in the Horn, and increases in extreme weather events, will likely increase the rate and scale of migration. According to Robert McLeman of Canada's Wilfrid Laurier University: "States that are already politically fragile are the most likely future epicenters for climate-related violence and forced migration events" (*Epicenters of Climate and Security*, June 2017). Indeed, of the twenty highest-ranked countries that are deemed fragile states, twelve are situated in areas of the Middle East, South Asia, and Africa, where climate change is expected to create heightened levels of water scarcity. That includes five countries of the Horn: Eritrea, Kenya, Somalia, South Sudan and Sudan.

• ***Water weaponization***
Changes in water availability, including increased scarcity of, and access to, water exacerbated by a changing climate, also open up opportunities for states and non-state actors to use water as a weapon. In a recent study by Marcus King of George Washington University, United States, discusses how Somalia has been especially prone to this nexus of climate, conflict and water weaponization (*Epicenters of Climate and Security*, June 2017). In 2011, Somalia was hit by regional droughts that have been linked to climate change. During this time, as King notes, jihadist fundamentalist group "Al-Shabaab changed its traditional guerilla tactics and started to cut off liberated cities from their water sources so that they could demonstrate at least some kind of power and presence. Climate change, lack of food and continued conflict involving water weaponization took an enormous social toll. Limited access of humanitarian agencies exacerbated by al-Shabaab's actions led to more than a quarter million deaths and hundreds of thousands of displaced persons."

A small silver lining

While droughts and extreme weather events are not new to this region, the rate of change and the decrease in recovery time between extreme weather events will place additional pressures on governments already stretched thin. These dynamics can make state instability and conflict more likely and enduring. However, there is a small silver lining – climate change, especially when compared to other drivers of international security risks, can be modelled with a relatively high degree of certainty.

While significant uncertainties in predicting local-scale climatic changes remain, existing projections from climate models paint a fairly clear picture of what the future holds. This provides a basis for governments and societies to plan accordingly. However, this heightened predictive capacity does not, by itself, lead to preparedness.

The combination of "unprecedented risk" and "unprecedented foresight" underlines the case for a "Responsibility to Prepare" (Briefing to the UN Security Council, December 2017) – a responsibility of sub-national, national, and intergovernmental institutions to build climate resilience into the Horn of Africa's regional order. A failure to meet this responsibility could significantly strain regional stability in the Horn, and around the world.

Caitlin E. Werrell and **Francesco Femia** are the Co-Founders and Presidents of the Center for Climate and Security. The Washington DC-based, non-partisan policy centre, which has a team and an Advisory Board of distinguished security and military experts, is the only institution exclusively focused on the security risks of climate change.

Changing minds, not the climate

UNESCO has more than thirty programmes to help us understand and deal with the challenges posed by climate change, and to raise awareness of the ethical implications raised by this major issue of our times.

By defining the global ethical principles surrounding climate change, the Organization provides guidelines for decision-making and policy choices to help counteract the morally unacceptable damage and injustice it brings. The mainstays of the Declaration of Ethical Principles, adopted in November 2017, include the prevention of harm, a precautionary approach, equity and justice, sustainable development, solidarity, scientific knowledge and integrity in decision-making.

UNESCO also helps Member States to adapt to climate change, to mitigate its impact, to educate societies on sustainable development (ESD) and to assess the risks of natural disasters. Through its International Hydrological Programme (IHP), UNESCO facilitates scientific cooperation to assess and monitor changes affecting water resources. Its Man and the Biosphere Programme (MAB) aims to improve the livelihoods of people while preserving ecosystems. The biosphere reserves managed by MAB, along with the World Heritage sites and the global geoparks network, all act as observatories for climate change.

The Organization pays particular attention the health of the oceans, which regulate the climate and capture nearly a third of carbon emissions. As a result of the increase in greenhouse gas emissions, coastal pollution, overfishing and population pressures, the coasts and marine ecosystems are undergoing major changes. These particularly affect Small Island Developing States (SIDS), for which UNESCO has formulated an action plan.

UNESCO's strategy is part of a comprehensive approach defined by the United Nations Framework Convention on Climate Change (UNFCCC). Since the 2015 Paris Climate Change Conference (COP 21), UNESCO has presented its various initiatives at each of the annual conferences. Its exhibition stands have become meeting places to promote debates and discussions with the public and civil society. The need to change mentalities is no longer in dispute. What is needed is an in-depth understanding of the issues underlying this global challenge. This involves raising awareness and educating people about sustainable development. "Changing minds, not the climate" is UNESCO's central message on the issue.

The view from Dominica: Anthropocene or Capitalocene?

Andreas Malm

Climate change is not the creation of the mere existence of billions of humans who inhabit the planet, but is wrought by the few who control the means of production and make the central decisions about energy use, argues Andreas Malm. In what is more Capitalocene than Anthropocene, a head-on confrontation with fossil capital is imperative if we are to prevent extreme climate events like the hurricanes that have devastated Dominica.

Dominica used to be an emerald hill-range, rising straight out of the Caribbean Sea. When I visited the island nation in August 2017, it remained covered by impossibly green woods, every peak and ravine bursting with vegetation. The most mountainous island in the region, with the greatest intact forest cover, it was a marvel of natural splendour, but poor. Most of the 70,000 inhabitants – the vast majority, African descendants – subsisted on small-scale farming. The banana, plantain and yam were supplemented with some fishing and a little bit of tourism.

The island had already suffered an early blow. In 2015, Tropical Storm Erika poured out torrents of water over the hills, until some of them gave way and collapsed. At the time of my visit, the country was still licking its wounds from that disaster, clearly visible in the south-east, where the slopes were cut up by the landslides that had carried away top-soil and trees and houses.

The Rising Tide, *an installation of sculptures by British artist, Jason DeCaires Taylor, on the River Thames, London, 2015.*

Roads were being rebuilt and new settlements constructed to house the survivors.

Six weeks after I left, on 18 September 2017, Hurricane Maria suddenly accelerated to a Category 5 system – one of the most explosive intensifications of a hurricane on record – and slammed straight into Dominica. Over one night, the green island turned brown. The extraordinarily ferocious winds simply blew away the forest cover.

Incalculable sense of loss

Leaves and branches were scattered over the sea, naked trunks left standing in what looked like clear-felled areas – if Erika had scratched the island, Maria flayed it. This time the entire infrastructure – houses, roads, bridges, hospitals, schools – was pulverized and the agricultural sector obliterated. The financial cost was estimated at twice the country's Gross Domestic Product (GDP), but, as the IRIN news agency reported, "the deeper sense of loss is off the spectrum".

In the first month after Maria, a fifth of the population picked up what few possessions could be salvaged, and left. Those who stayed spoke of themselves as soldiers on a battlefield: martial discourse swept the country. Five days after the hurricane, Prime Minister Roosevelt Skerrit, himself now homeless, addressed the United Nations General Assembly: "I come to you straight from the frontline of the war (…). As Dominicans bear the brunt of climate change, we are shouldering the consequences of the actions of others, actions that endanger our very existence, and all for the enrichment of a few elsewhere."

The descendants of the slaves that inhabit Dominica had done nothing to heat up this planet, and neither had the tiny surviving indigenous population. Subsistence farmers who resorted to taxi-driving or street-vending to supplement their incomes, they had negligible carbon footprints and zero power over global energy supplies. Yet, in the assault from the hyper-hurricane, the main victims were precisely these farmers: they were killed, their lives laid to waste, the very land they stood on destroyed.

Are we all responsible?

In the discourse about climate change, as it has developed in Western academia, media and policy-making circles over the past decade or so, another storyline has taken hold. It says that the problem has been created by all of us. Global warming is the fault of the human species as a whole. We live in the Anthropocene, the epoch when our particular species has overtaken the natural forces in determining the trajectory of this planet, most obviously in the realm of climate – and so humans in general are responsible for the ensuing catastrophes.

An explicit statement of this logic can be found in one of the most celebrated books on the topic in recent years – Indian author Amitav Ghosh's *The Great Derangement: Climate Change and the Unthinkable* (2017), where we learn that global warming "is the unintended consequence of the very existence of human beings as a species." More than that, it is "the product of the totality of human actions over time. Every human being who has ever lived has played a part in making us the dominant species on this planet, and in this sense every human being, past and present, has contributed to the present cycle of climate change." On this view, the average coffee-grower on Dominica contributed to Maria merely by dint of belonging to the Homo sapiens species. So did her ancestor slaves who were brought to the island. So did the Kalinago people, living there in peace before Europeans made landfall on the island in 1492.

Flawed narrative

It is exceedingly difficult to see what scientific grounds there could be for such a view, but a multitude of intellectuals expounding on the Anthropocene have made similar statements. To pick just one other case, historian Dipesh Chakrabarty (see page 11) , perhaps the most influential interpreter of the concept in the humanities and social sciences, has argued that when it comes to producing climate change, "the poor participate in that shared history of human evolution just as much as the rich do." (Chakrabarty D, 2014, Climate and Capital: On Conjoined Histories, *Critical Inquiry* 41, no. 1, The University of Chicago Press Journals.)

On this view, Maria was more a suicide than a blitzkrieg. It was a case of the chickens coming home to roost among some of their original breeders, with no particularly flagrant injustice involved. From the denuded hillsides of Dominica, the reality, of course, looks very different.

Follow the Leaders, *an installation by Spanish artist Isaac Cordal at the Exposition Fragil (Brussels, 2015). The small sculptures represent businessmen half-drowning in a mixture of water and oil.*

The Anthropocene narrative is flawed because it distorts and obfuscates that reality – not by saying that human actions have caused climate change, which is an incontrovertible fact, but by sliding from that observation into the depiction of the human species as a unified protagonist. It is anything but.

For the past few thousands of years, as long as class societies have existed, Homo sapiens has been a deeply fractured entity, and never more so than in this rapidly warming world – where the world's eight richest men own as much wealth ($426 billion) as the poorest half of the world's population combined ($409 billion), according to Oxfam, the charity (January 2017).

© Isaac Cordal (cementeclipses.com)

Wealth is known to correlate closely with carbon dioxide emissions. It is the sign of profits from business-as-usual and the best proof against its consequences. Soaked in fossil fuels, it is the engine of the storm.

Plastic epidemic

We are being told that climate change is created by an anonymous mass of millions and billions of humans, when, as American geographer Matt Huber has recently argued, it is in reality, a very narrow segment of the species that controls the means of production and makes the central decisions about energy use. That segment operates with one goal in sight – expanding its riches further. The process is known as capital accumulation, and it grinds on relentlessly, with no regard for the fate of Dominicans or the ever more desperate alarms from climate science.

To take but one example, in December 2017, *The Guardian* newspaper reported that the production of plastics in the United States is set to increase by forty per cent in the next decade – since ExxonMobil, Shell and other fossil fuel corporations have used the ongoing shale gas boom to invest massively in new plastic plants. They will lock the American – and by extension, the global – economy, even deeper into its addiction to plastic products. These will eventually make their way to beaches around the world, and to fossil fuels, the heat from which will find new islands to devastate. From the standpoint of capital, that is exactly the right thing to do: invest in the production and consumption of fossil fuels to generate profit. It is this process that has fuelled global warming from the very start.

The people of Dominica and their many fellows of misfortune around the world – set to multiply every coming year unless a head-on confrontation with fossil capital begins right about now – have never lived in what is termed the Anthropocene and their actions cannot be blamed for causing harm to the planet. They suffer the blows from an age more appropriately labelled the Capitalocene. It is a form of structural, systematic war, but we can expect the sudden shock-and-awe events to become more frequent in the years ahead. A more open question is when, or if, the fight-back will ever begin. Blaming the human species won't make it happen.

Andreas Malm (Sweden) teaches human ecology at Lund University, Sweden. He is the author of several books, including, most recently, *The Progress of This Storm: Nature and Society in a Warming World* (2018).

Stop the catastrophist discourse!

Francis Chateauraynaud, interviewed by Régis Meyran

The debates sparked off by the Anthropocene have real scientific stakes, since they could play a role in forging a global model of the evolution of planetary equilibria. But the interpretations could get distorted by those who use the term to prophesy the end of the world – an approach which is counter-productive, argues Francis Chateauraynaud.

You have been studying scientific controversies for a long time. What do you think of the debates around the Anthropocene?

This is an important debate – scientists are looking for a global model for the planet, which, for the time being, has not been consolidated. It's a question of establishing a formal system that sets the laws governing the functioning of Planet Earth, by thinking on a global scale and integrating many variables that were previously disconnected. With the computing power available to us today, it is possible to construct a model of the biosphere and to run simulations to study the variations that occur when parameters – such as ocean temperatures and acidity – change.

As a hypothesis, the Anthropocene is of interest to both geologists and archaeologists, who deal with radioactive or chemical residues in the soil. The question remains whether it is really necessary to talk about a new geological epoch that would follow the Holocene. The relevance of the term Anthropocene will certainly become clearer over time, and it is normal that it should be debated. Some authors, such as the American academic Jason W. Moore and Swedish author Andreas Malm, prefer to speak of the Capitalocene.

This reclassification is questionable, though, given the large ecological footprint of the former Union of Soviet Socialist Republics (USSR) in the twentieth century.

In fact, it is not so much the term Anthropocene that poses a problem as the predictability of the model, on the one hand, and the temptation to embrace catastrophism or determinism, on the other.

Could you tell us more about this tendency towards catastrophism?

One problem comes from the way in which many experts speak on behalf of all humanity, by using the pronoun "we". The historian Dipesh Chakrabarty has questioned the function this "we" might serve. To attribute phenomena to humanity as a whole is to forget or mask the fact that many people, who are living in poverty or are from minorities, play almost no part in the advent of the Anthropocene.

The other problem is the idea that "we" have already embarked on this fatal trajectory. To give you an example, in November 2017, the French daily, *Le Monde*, published an open letter "to humanity" signed by 15,000 scientists, titled "It will soon be too late".

Speculation, Passion and Anxiety, *acrylic on canvas, 2001, by the French and Canadian artist-philosopher Hervé Fischer.*

While a measure of reversibility is implied in the adverb "soon", a marker like "too late", and the repetition of stock phrases such as "we have failed" or "we did not succeed in", put us on the slippery slope of catastrophism.

The global thinker (the intellectual who thinks of the world in its global dimension) finds a form of legitimacy here for his flights of fancy and can unfold a great narrative, encompassing all the complexity of the world in a few stock phrases. Even the French sociologist Bruno Latour has entered the field, with his book *Face à Gaïa* (2015). The temptation to prophesy fuels writings on "collapsology", like the book by French researchers Pablo Servigne and Raphaël Stevens, *Comment tout peut s'effondrer* [How Everything Might Collapse, 2015]. While these authors base their arguments on data that few would dispute, the way in which they are assembled into an end-of-the-world narrative is problematic.

The main criticism against the catastrophist argument is that it doesn't work. The "heuristics of fear" theory, put forward years ago by the German philosopher Hans Jonas (1903-1993) – who believed that only fearing the worst was enough to raise consciousness – is no longer relevant in the contemporary context. It's all very well for great minds to sign ominous open letters, but this doesn't bring us any closer to solutions. The task of scientists is not to announce the inevitability of a catastrophe, but to tackle problems at different levels of action.

Catastrophist arguments may be futile, but they are successful...

Not only are they successful, they also provoke hostile reactions. Ecology ends up getting confused with catastrophism. Groups like the Association française pour l'information scientifique (French Association for Scientific Information (AFIS)) have even back-pedalled, proclaiming that we have never been happier on this planet. In these polemics, the arguments of groups like AFIS are all the more successful because they do not call on the public to do anything.

Concretely, though, can we avoid a catastrophe?

First of all, there are many kinds of catastrophes. To announce a final global catastrophe is to ignore the real facts. It is important to avoid endorsing a closed-off vision of the future, even if it is supported by institutions, and to unlock possible futures.

There are always individuals, groups, cities or regions that are inventing alternatives and new possibilities. The book that I co-authored with Josquin Debaz, *Aux bords de l'irréversible* [On the Edge of the Irreversible, 2017] traces the emergence of a multiplicity of "counter-Anthropocenes" – other possible worlds that are forged in the interstices. While they often appear as forms of "resistance", they generate other modes of acting and of the perception of the world.

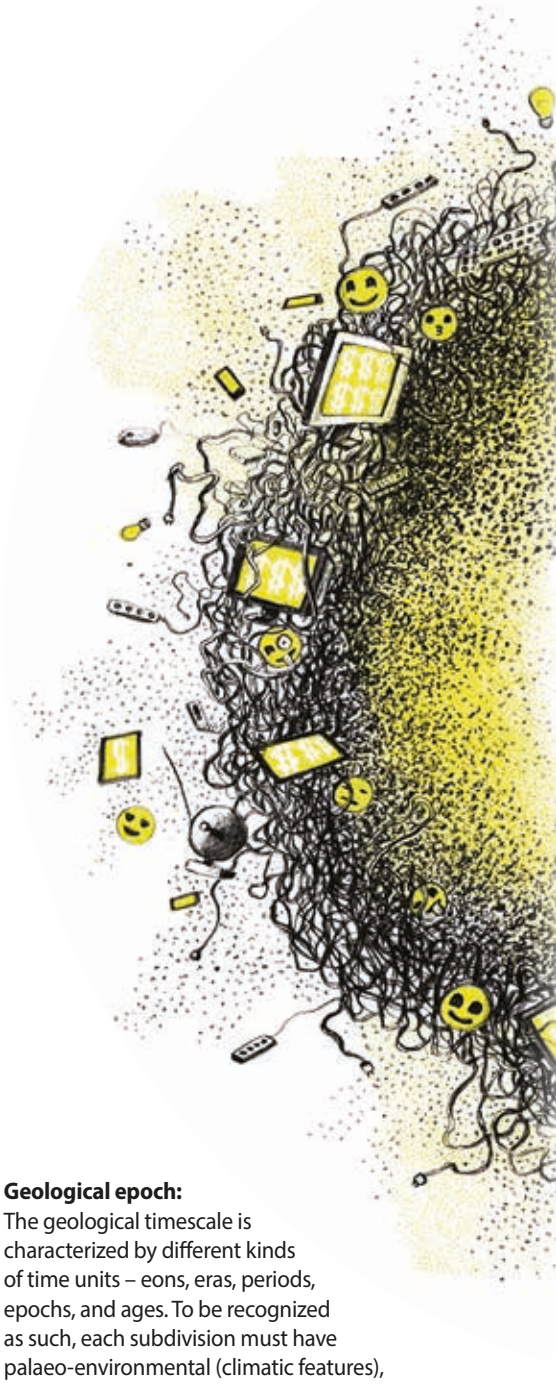
Take, for example, the plan to build a new international airport at Notre-Dame-des-Landes in France. First initiated in the 1960s, the project was relaunched in the early 2000s. Found to be inconsistent with the COP21 (Paris, 2015) declarations on combating climate change, it was finally abandoned in January 2018 under pressure from activists. Central to the civic resistance organized by the citizens of Notre-Dame-des-Landes was their collective ability to reverse the order of priorities.

The movements around farmers' seed systems and permaculture are inspired by the functioning of traditional ecosystems and knowledge, while aiming for self-sufficiency. As with cities in transition, multiple collective experiences work together to redefine and manage common goods, fuelling new ideas for shaping policy.

The future remains open. Every humanist has a duty to prove the prophets of catastrophism wrong. There are countless places on this planet where people are already struggling to overcome the devastating effects of the techno-industrial hubris.

Francis Chateauraynaud (France) is a sociologist and Research Director at the École des Hautes Études en Sciences Sociales (EHESS, School of Advanced Studies in the Social Sciences) in Paris. His most recent book, co-authored with Josquin Debaz, is *Aux bords de l'irréversible. Sociologie pragmatique des transformations* (2017).

A lexicon
for the Anthropocene



In order to understand the ongoing debates about the Anthropocene, it is not enough to know just the word – coined in 1980 by American biologist Eugene F. Stoermer and popularized in the early 2000s by the Dutch atmospheric scientist Paul Crutzen. Here is an overview of some key technical terms.

Biocapacity: This concept was first put forward in the early 1990s by the Swiss sustainability advocate, Mathis Wackernagel, and Canadian ecologist William Rees. Their research on the biological capacity of the planet required by a given human activity, led them to define two indicators: biocapacity and the ecological footprint (see below). Since 2003, these two indicators have been calculated and developed by the Global Footprint Network, which defines biocapacity as "the ecosystems' capacity to produce biological materials used by people and to absorb waste material generated by humans, under current management schemes and extraction technologies".

Capitalocene: This term was put forward by American environmental historian and historical geographer Jason W. Moore, who preferred to use the term Capitalocene rather than Anthropocene. According to him, it is capitalism that has created the global ecological crisis leading us to a change of geological era. A variant of the Capitalocene, the notion of Occidentalocene, affirmed notably by the French historian Christophe Bonneuil, holds that responsibility for climate change lies with industrialized Western nations and not the poorest countries.

Co-evolution of genes and culture: According to American sociobiologist Edward O. Wilson, genes have made possible the emergence of the human mind and human culture (language, kinship, religion, etc.) and, conversely, cultural traits could favour genetic evolution in return. This happens through the stabilization of certain genes that give a selective advantage to members of the group in which the cultural behaviour is observed. Several anthropologists and biologists have criticized this idea of "co-evolution" between genes and culture, arguing that the transmission of cultural traits is a volatile phenomenon that does not obey the laws of Darwinian evolution. They also argue that, over the past 50,000 years, humankind has experienced significant cultural transformations, whereas the human gene pool has remained unaltered (with only a few exceptions).

Ecological footprint: According to the Global Footprint Network, this term is "a measure of how much area of biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology and resource management practices".

Geological epoch: The geological timescale is characterized by different kinds of time units – eons, eras, periods, epochs, and ages. To be recognized as such, each subdivision must have palaeo-environmental (climatic features), palaeontological (fossil types) and sedimentological (resulting from erosion by living beings, soils, rocks, alluvion, etc.) conditions, that are similar and homogenous. The International Commission of Stratigraphy and the International Union of Geological Sciences (IUGS) set the global standards for geological timescales. We are currently living in the Holocene epoch, which is associated with human sedentism and agriculture. If all the above conditions are met, the Anthropocene could soon be defined as a new geological epoch.

Vertigo, *lithograph by French artist Antonin Malchiodi, 2018.*

Great Acceleration: Scientists are in agreement that, since the 1950s, ecosystems have been modified more rapidly and profoundly than ever before – under the combined effects of the unprecedented increase in mass consumption (in countries belonging to the Organisation for Economic Co-operation and Development (OECD)), dramatic population growth, economic growth and urbanization. The American chemist Will Steffen dubbed this phenomenon the "Great Acceleration".

Great Divergence: The expression "Great Divergence", coined by American historian Kenneth Pomeranz, designates the industrial boom that has separated Europe from China since the nineteenth century. According to Pomeranz, it was the unequal geographical distribution of coal resources and the conquest of the New World that gave the decisive impetus to the European economy.

Planet (as a unit of measurement): The ecological footprint has a "planet equivalent", or the number of planets it would take to support humanity's needs at any given time. In order to determine a country's ecological footprint, we measure the number of planets that would have been needed by the world's population if it consumed as much as the population of that country. According to the World Wildlife Fund (WWF), "every year, humanity consumes the equivalent of 1.7 planets to meet its needs".

Sixth Extinction: The Great Extinction is the term given to a brief event in geological time (several million years) during which at least 75 per cent of species of plants and animals disappear from the surface of the earth and the oceans. Of the five Great Extinctions that have been recorded, the best known is the Cretaceous-Tertiary, 66 million years ago, which included the disappearance of the dinosaurs. The American biologist Paul Ehrlich has suggested that we have now entered the sixth Great Extinction (although, for the time being, its destruction in terms of number of species is considerably less than in the five others) – 40 per cent of the planet's mammals will have seen their habitat range reduced by 80 per cent between 1900 and 2015.

Spheres: For the Russian mineralogist and geologist Vladimir Vernadsky, who devised the concept of biosphere in 1926, Planet Earth is made up of the intermeshing of five distinct spheres – the lithosphere, the rigid, rock outer layer; the biosphere, comprising all living beings; the atmosphere, the envelope of gases known as air; the technosphere resulting from human activity; and the noosphere, the part of the biosphere occupied by thinking humanity, including all thoughts and ideas. Other authors have since added to this list the notions of hydrosphere (all the water present on the planet) and cryosphere (ice).

Technodiversity: The word biodiversity refers to the diversity of ecosystems, species and genes, and the interaction between these three levels, in a given environment. By analogy, technodiversity refers to the diversity of technological objects and the materials used to make them.

Technofossils: Fossils are the mineralized remains of individuals that lived in the past. By analogy, technofossils are the remains of technological objects.

Technosphere: The technosphere refers to the physical part of the environment that is modified by human activity. It is a globally interconnected system, comprising humans, domesticated animals, farmland, machines, towns, factories, roads and networks, airports, etc.

Qello, aged 13, collects firewood from the forest, as dawn breaks over the village of Dodota Denbel. The second of four children in a family of farmers, she is responsible for most of the domestic chores, especially since her older sister, 19, got married and had a baby.

© Ignacio Marín

An ordinary day in the life of Qello

Once she returns home with the firewood, Qello makes some coffee.

Text: Katerina Markelova

Photos: Ignacio Marín

If Qello, the heroine of this photo feature (shot in November 2017) goes to school today, it is because she is lucky. Just 30.4% of Ethiopian girls of secondary school age are able to go to school (UNESCO Institute for Statistics (UIS), 2015).

Qello, who is 13 years old, has already taken the first step towards realizing her fundamental right to education – she has not abandoned primary school, like 61% of her young compatriots (UIS, 2014). But will she be able to enter upper secondary school? Only 17% of girls (gross enrolment rate*) passed this level in 2015.

In Ethiopia, in spite of a relatively high rate of enrolment of girls in primary school – 82% in 2015 – only one girl in two (47% in 2007) between the ages of 15 and 24 years can read, write and understand a short and simple text about their daily lives. This is the logical consequence of an acute shortage of teachers – there was one teacher for fifty-five pupils at the primary level in 2011.

Will Qello's little brother face as many obstacles during his schooling? He will have a slightly better chance of going to primary school (the enrolment rate for boys was 88.5% in 2015), and secondary school (31.4% in 2015).

He will also probably spend one more year at school – the school life expectancy** for boys was 8.9 years in 2012, compared to 7.9 years for girls.

Even though boys and girls have almost equal access to compulsory schooling (from 7 to 14 years), the situation in Ethiopia is not very encouraging. About 2.2 million children and 4.6 million adolescents (2015) have had no schooling in this sub-Saharan African country with a population of 102 million.

Today, 59 million children, or 9% of the primary school-aged population worldwide, do not go to school. Just over half of these children live in sub-Saharan Africa, a region with the highest rates of exclusion from education.

Some 17 million of them are girls – 9 million girls between 6 and 11 will never go to school, as against 6 million boys (UIS).

Gender equality is Target 1 of Sustainable Development Goal 4, which aims to ensure equal and quality education for all, and to promote lifelong learning opportunities by 2030. UNESCO, as the United Nations specialized agency for education, was entrusted to lead the Education 2030 Framework for Action, adopted in November 2015. The main responsibility for implementing this agenda lies with governments, with UNESCO and its partners providing support through advice on coordinated policy formulation, technical assistance, capacity-building and monitoring of progress at the global, regional and national levels.

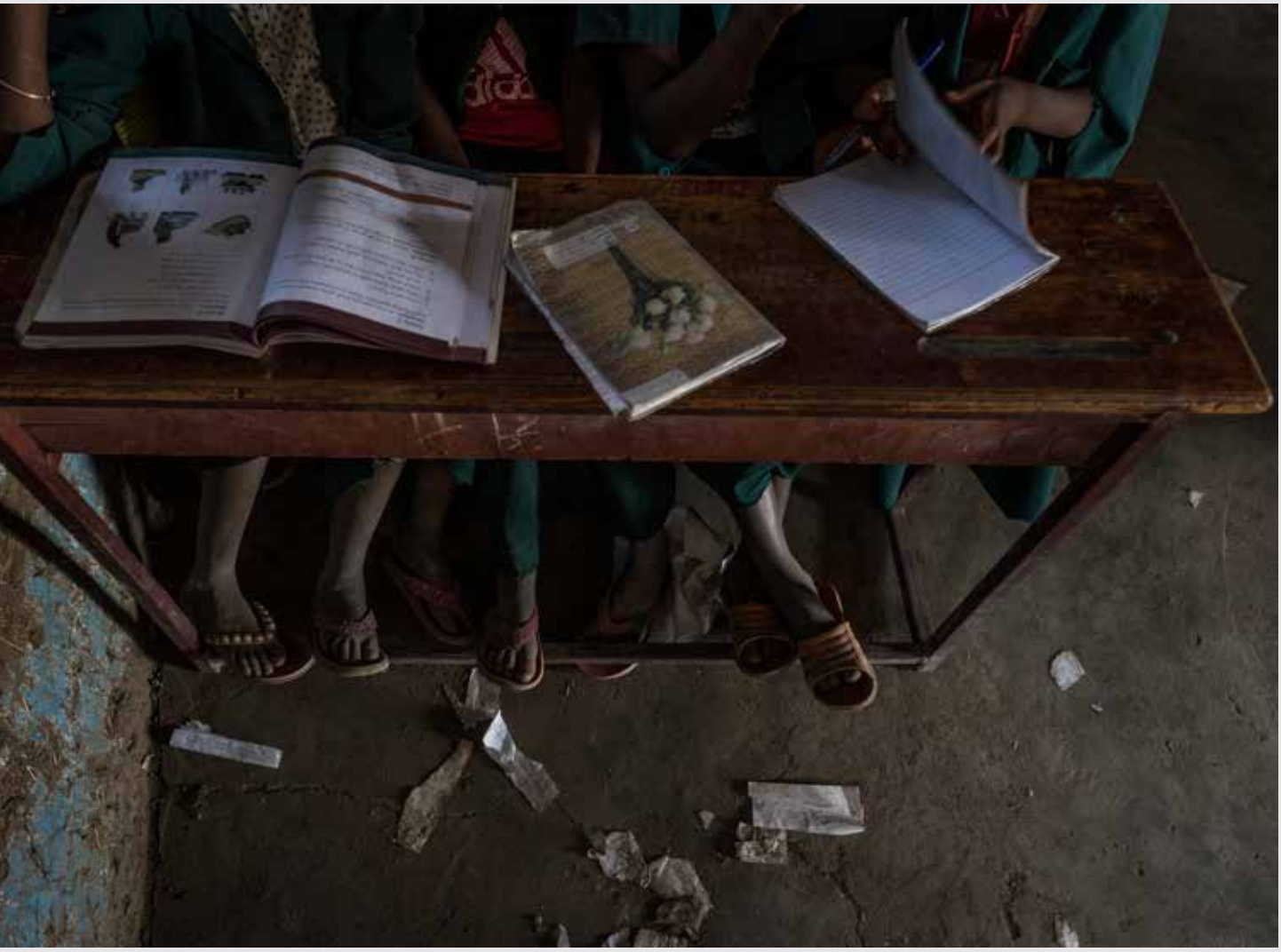
*Gross enrolment rate: the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.

**School life expectancy: the number of years a child is likely to spend in the school and university education system.

Qello spends a few minutes on herself, taking a morning wash.

Before she can get to school, Qello has already made breakfast and cleaned the house. She is sometimes late, or has to skip a class because household chores are a priority.

Five girls share one desk in Qello's class at the village public school.



"Two-thirds of Qello's girlfriends will be forcibly married at an early age. The vast majority of them will drop out from school soon after their wedding day," explains Ana Sendagorta, Director of the Pablo Horstmann Foundation.

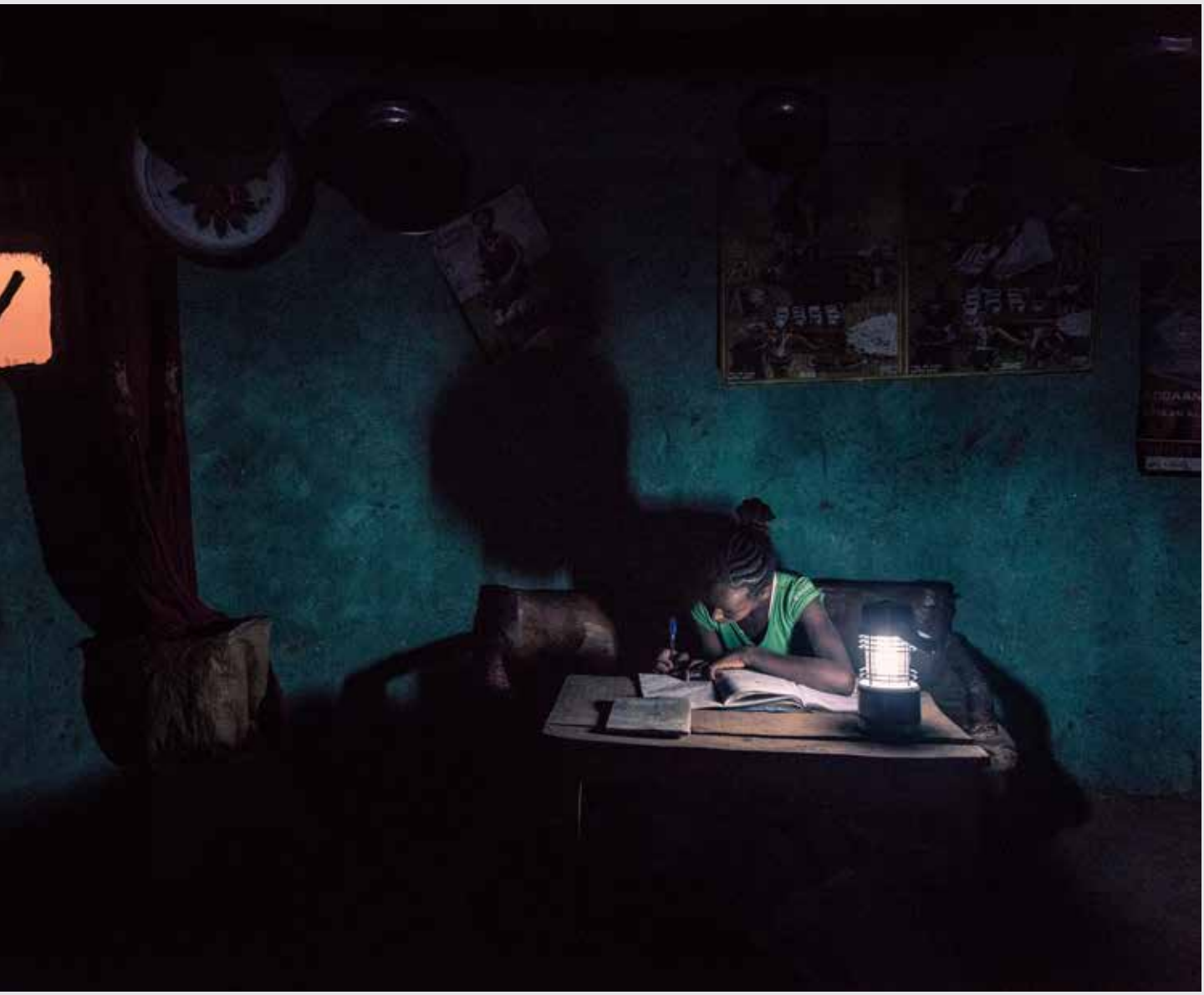
Back from school, Qello prepares a meal for the family. Traditionally, domestic duties are seen as essential "training" for girls, preparing them for their future lives as wives and mothers.

Qello waits for her father to finish his meal before she cleans the dishes.

Once the dishes are done, Qello fetches water from the community well. Only one well serves the entire village, so she often waits for hours in a queue for her turn.

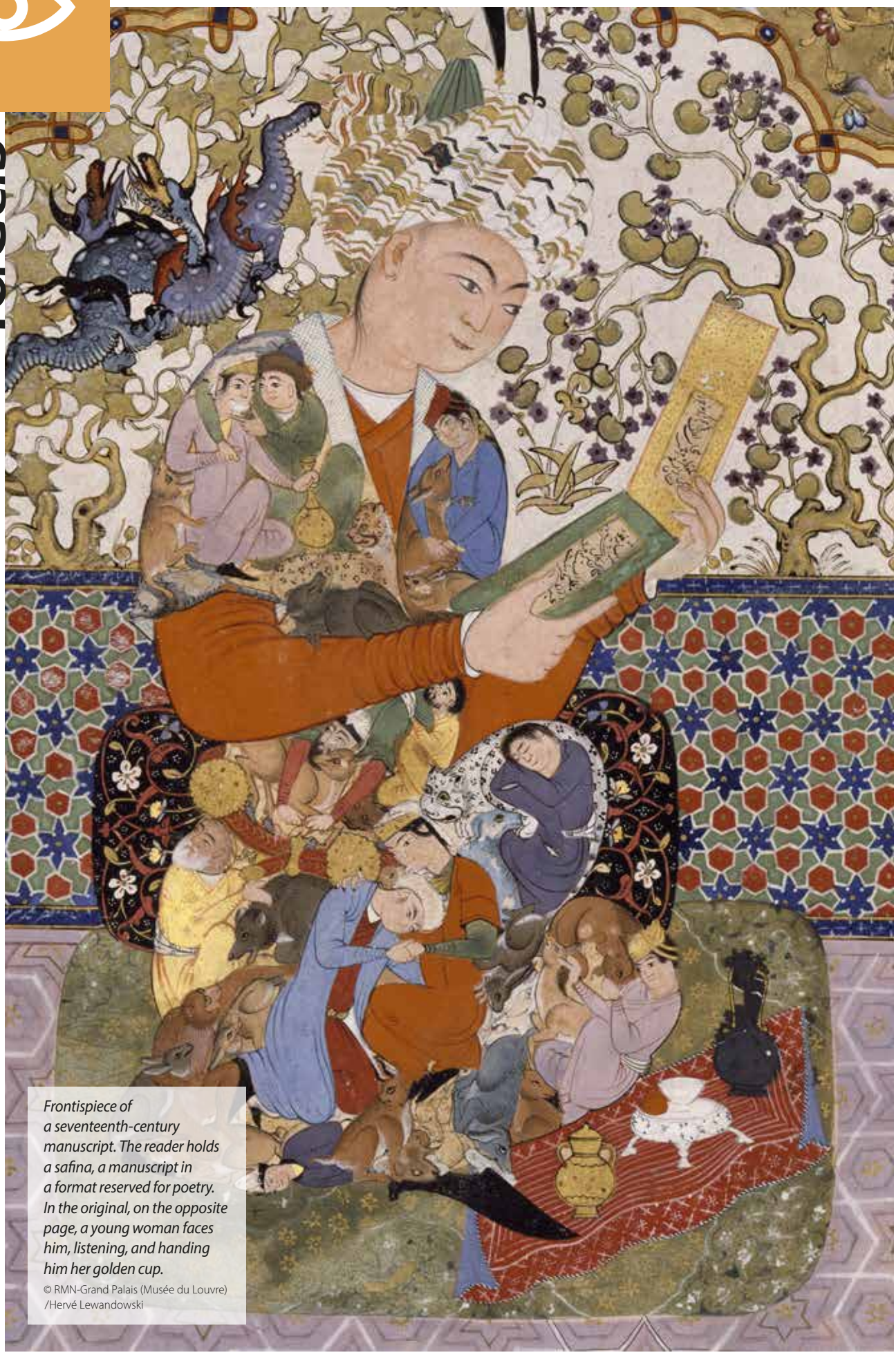
The journey back home takes even longer, since the donkey cart is loaded with water. The long distances expose many girls to physical or sexual violence, but they have no choice. Their families depend on the water.

Back home, it is time to do the laundry.



By the time all the chores are done, it is the end of the day. Qello finally finds some time do her homework, by the light of a small lamp.

Night shrouds Qello's house in darkness, though stars light the sky. Tomorrow is another day.



Frontispiece of a seventeenth-century manuscript. The reader holds a safina, a manuscript in a format reserved for poetry. In the original, on the opposite page, a young woman faces him, listening, and handing him her golden cup.

We, the servants and tenants of Earth

Souleymane Bachir Diagne

To meet the challenge that the global ecological crisis presents today, there is an urgent need to draw on humanity's philosophical and spiritual repertoire – because it teaches us valuable lessons on the importance of taking care of life in all its forms. Souleymane Bachir Diagne draws on this source here, by blending the philosophical novel of a twelfth-century Andalusian scholar, African words of wisdom and thoughts from Western philosophers. We are not nature's masters and owners, the Senegalese philosopher warns us.

With the Ideas Section, this issue of the *UNESCO Courier* marks the celebrations of the World Day for Cultural Diversity for Dialogue and Development, 21 May, and the International Day for Biological Diversity, 22 May.

My intention is to think about a major crisis – the ecological crisis, which we agree, defines the era we are living in – by showing how the history of philosophy can shed light on it and give us guidance on the actions we must take to deal with it. More precisely, I would like to show how there is continuity between the way philosophy helps us to consider a policy of humanity and the way it illuminates a policy of the "humanization of the Earth", in the words of the French philosopher and theologian Pierre Teilhard de Chardin (1881-1955). I use this expression as signifying the duty and the responsibility that the human has to act accordingly, from the moment he understands that nature is entrusted to him and to humanity in the future. It forbids me to consider myself as "nature's master and owner", to cite the well-known phrase by the seventeenth-century French philosopher, René Descartes.On this point, regarding a philosophy that is simultaneously spiritual and ecological, I would like to evoke the ideas of the Andalusian scholar Abu Bakr Ibn Tufayl (1105-1185). They are masterfully expressed in his magnum opus, the philosophical novel *Hayy ibn Yaqzān*.

He presents the idea that humans realize their humanity fully only when they reach ecological consciousness – which allows them to simultaneously understand the evolution of their own becoming and the responsibility which is incumbent on them to protect life on earth.

Homo perfectus

The Arabic philosophical fable, after its translation into Latin in 1671, under the title *Philosophus autodidactus*, and later into English, was a source of inspiration for many writers, including the English writer, Daniel Defoe, the author of *Robinson Crusoe*. Indeed, the Andalusian philosopher's novel is the story of the survival of Hayy, a child abandoned on an island that has never known a human presence, and who is rescued, protected and fed by a doe. When the animal dies, he learns to use his hands, his practical and then theoretical intelligence, in an ontogeny (the origin and development of the individual organism, from conception to death) that recapitulates phylogeny (evolution of the species over the ages): the child develops into homo perfectus, the *insān kāmil* of Islamic mysticism.

In other words, he becomes an accomplished human who rediscovers not only the essence of civilization (and especially fire), but also the sense of transcendence that leads him to the idea, and then to the experience of the divine. We find an echo of the *Philosophus autodidactus* in the philosophical debate about the *tabula rasa*, the clean slate that represents our ability to know before experience begins to record our knowledge on it.

Thus we have underlined the continuity between the idea illustrated by the novel about Hayy and *An Essay Concerning Human Understanding* by the seventeenth-century English philosopher John Locke.

We should note, in passing, that the teaching of the history of philosophy as it is presented in most textbooks leaves little room for a work as important as Ibn Tufayl's, or for the intellectual tradition to which it belongs – this calls for another way of teaching the history of philosophy, which does not make it a purely European matter.

The caliph of God on Earth

The first shock that sets in motion the practical and theoretical intelligence of the child is the question that confronts him, plunging him into suffering and incomprehension, at the moment his mother, the doe, dies – what is this thing, life, which has left the body of the mother and made her forever deaf to her child's calls? To answer this question, Hayy devotes himself to the practice of dissecting dead animals, and then attempts to surprise the vital principle in living animals by performing vivisections on them – not seeing, in his ignorance and his innocence, the cruelty of his actions. He abandons this research, again because of failure. Later, when he attains full awareness of self, God, Creation and his own place within it and responsibility for it, Hayy will understand his responsibility to be the guardian of life, in all its forms. He will take from nature only what is necessary for his sustenance, ensuring that the capacity for renewal of life is perfectly preserved, and that nature reconstitutes what it gives him.

Ibn Tufayl's insistence on Hayy's ecological consciousness is a philosophical illustration of Koranic anthropology that defines the human as "the caliph of God on Earth". The word caliph, which means substitute, and the best translation for which is no doubt lieutenant – or more precisely lieu-tenant, place-holder, in French etymology – teaches humans what they have to be and defines their responsibility to watch over their environment, namely the Earth. Moreover, this word caliph, in spite of what we hear today, has in the Koran only this meaning, denoting the destination of the human. An important message from Ibn Tufayl's book is, therefore, that the human is guardian of the Earth for itself and for the generations to come, because the human is originally the depository of what makes him the placeholder of God on Earth. Today, we need more than ever to heed this responsibility, without it being necessarily linked to a religious meaning.

Photograph of the Careto man, by French photographer Charles Fréger, taken during the Carnival in Lazarim, Portugal. It is part of the Wilder Mann series (2010-2011), which took Fréger across eighteen European countries in search of images of the "savage man".

Homme nature, *aquarelle on paper by Angolan-French artist Franck Lundangi.*

Making humanity together

I'll sum up my point in one word: *ubuntu*. This Bantu word gained worldwide fame when it was used by South Africans Desmond Tutu and Nelson Mandela. It literally means "to make humanity together" – to create, thanks to other people, the human that I have to become, and at the same time, create "one humanity" with others.

To be the receptacle of what makes me a placeholder of God on Earth makes me understand that "making humanity together" is the opposite of depredation. It gives me the duty to look after life in general – to think that although animals, for instance, do not themselves formulate rights that must be recognized as declared, these are not any less real to me, because my humanity obligates me to them.

In my opinion, I am not one of those people who go overboard in their efforts to bring down anthropocentrism – and for whom the different kingdoms should be self-represented in a sort of "natural contract" replacing the social contract. It is not necessary to dissolve humanity to forbid it to behave, as another seventeenth-century philosopher, Baruch Spinoza, wrote, "like an empire in an empire" – to make humans understand that they are not free nor separate from natural necessities. On the contrary, we must affirm our humanity, but affirm it as *ubuntu*. *Ubuntu* is a philosophical concept with universal scope and it seems to me that it encompasses the meaning and the role of the humanities – in particular, the philosophical humanities. By showing how these can enlighten us, I want to emphasize their contribution, even their "utility". But it is not a matter of exaggerating what philosophy can do, nor of giving in to the imperative of the profitability of knowledge, considered solely from the point of view of its technical implementation – by insisting on the use to be made of it.

Instead, when it comes to the thought and action required by the major crises of our time, I want to show that we can, we *must*, rely just as much on a philosophical novel written in the twelfth century in Muslim Spain as on Western philosophical thought, or African words of wisdom. To meet the challenges of changing times, we need to revitalize ourselves by delving into what humans have thought all around the world and at different times.

In other words, I want to recall that philosophy, and the humanities in general, are what give meaning to an education aimed towards the total, complete human –the homo perfectus – who is able to use the knowledge of history to invent a future we must build all together.

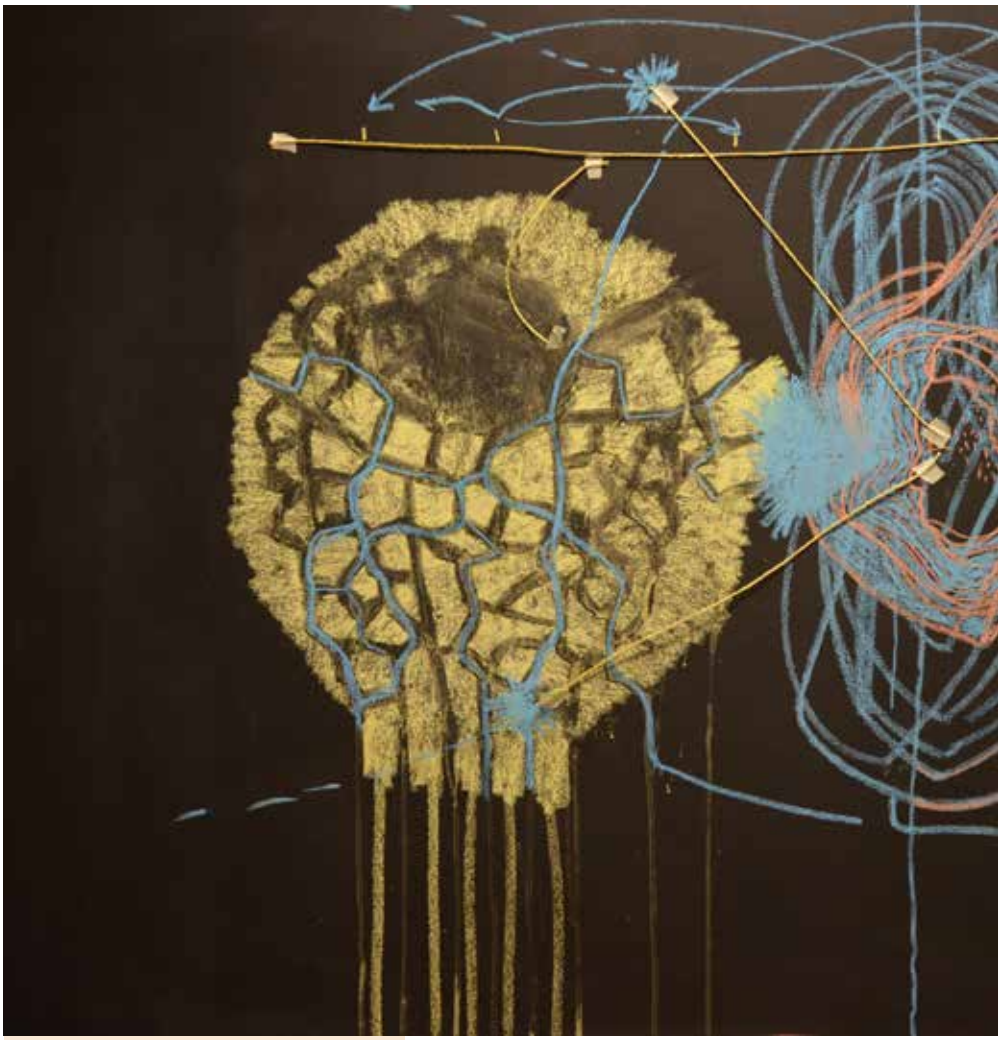
Souleymane Bachir Diagne (Senegal) is a philosopher, specialized in the history of logic and mathematics. He is a Professor at Columbia University (New York), and the author of several books on the history of logic and philosophy, Islam and African societies and cultures. He received the Edouard Glissant award in 2011 for his life's work.

Creolizing

the idea of humanity

Mireille Delmas-Marty

How can we protect and promote the diversity of cultural expressions, while resisting relativism and imperialism, and reconciling the universalism of human rights with the pluralism of cultures? Mireille Delmas-Marty, a member of the Institut de France and a jurist specialized in the study of the internationalization of law, shares her perspective on the issue. She advocates "reciprocal creolization", a dynamic and evolving process of coordinating, harmonizing and sometimes unifying, differences.



An image capture of Blue Spelling, *a change of perspective is a change of temporality, by Guadeloupean artist Minia Biabiany.*

Protecting and promoting the diversity of cultural expressions is one of the priorities that UNESCO's Member States have set for themselves at the dawn of the third millennium. By signing the 2005 Convention, they defined cultural diversity as a *common heritage of humanity* that must not only be *protected* – as an established, permanent treasure – but also *promoted*, because it is a living treasure, and therefore renewable and evolving.

Cultural diversity had already been elevated to the rank of *common heritage of humanity* in the Universal Declaration of 2001, unanimously adopted by UNESCO's General Conference in November of that year. The text affirms that cultural diversity is, for humankind, "as necessary as biodiversity is for nature".

It was the first major intergovernmental meeting held just after the 11 September attacks in the United States, and UNESCO wanted to proclaim loud and clear its rejection of the theory of the clash of civilizations and its refusal to sanctify differences.

Recalling this context seems to me entirely necessary, because since 2001, we have been engaged in a kind of permanent global civil war, which sustains genuine religious frenzy and terrorizes entire populations. This has resulted, in particular, to the mass exodus of populations that we are experiencing today, and in the identity tensions of the countries of immigration – that are closing themselves off on their differences, in the name of a supposedly threatened national identity. All these current events compel us to develop increasingly effective tools for cultural pluralism.

Are pluralism and universalism incompatible?

It must be recognized, however, that the text of the 2005 Convention contains an underlying contradiction, which is not easy to resolve, between *pluralism* – which the 2001 Declaration describes as giving "policy expression to the reality of cultural diversity" – and *universalism*, which is enshrined in the 1948 Universal Declaration of Human Rights and, more broadly, in human rights law.

The risk of contradiction is twofold, because by posing the principle of "equal dignity of all cultures" (Article 2 of the 2005 Convention), cultural pluralism, if limited to juxtaposing differences alongside each other, could lead to a certain relativism of values and, consequently, to a kind of negation of universalism.

Conversely, the universalism of human rights could lead to the negation of pluralism, if it were to force the fusion of all cultures and the disappearance of all differences. In such a case, this universalism would be the new garb of an imperialism that does not speak its name.

The drafters of the 2005 Convention saw this difficulty clearly. They laid down the fundamental rule in Article 2: "No one may invoke the provisions of this Convention in order to infringe human rights and fundamental freedoms as enshrined in the Universal Declaration of Human Rights or guaranteed by international law, or to limit the scope thereof."

In other words, differences are only permitted if they are compatible with human rights. The difficulty is that the guarantee is not the same for all rights. For "non-derogable rights", such as equal human dignity (prohibition of torture and other inhuman or degrading treatment), the protection is absolute and applies even in the event of war or terrorism, marking in principle, a common limit to the diversity of cultures. Other rights (privacy, religious freedom) are subject to restrictions, when the purpose is legitimate and the restrictions proportionate.

It is fair to say that the drafters of the 2005 Convention set a goal, but that they did not provide the "user guide" to prevent pluralism from rhyming with relativism and universalism with imperialism.

As a jurist, my contribution to the reflection on the tools of cultural pluralism would be to propose, if not a set of instructions, at least a few ways to try to reconcile pluralism and universalism, and some means to try to bring cultures closer together.

We know that many conflicts are the result of ignorance of the Other, but we often forget to look for their origin in the ignorance of our own culture, which is a key factor. Opening up ways to broaden our knowledge of different cultures, including our own, is essential, I think, because it makes it possible for everyone to avoid conceiving the universal as an extension of their own culture. In other words, it is necessary to *pluralize the universal*.

But where should these paths, which open to the widening of our knowledge of different cultures, lead? My answer is: to the rapprochement of cultures. It is one step further, not just to merge cultures, but to make them more compatible with each other. I would call that *ordering pluralism*.

Pluralizing the universal

Sensory perceptions – hearing, sight, smell, taste and touch – constitute the first tool for a true knowledge of different cultures. We know to what extent concerts or festivals, for example, contribute to expanding our knowledge through sensory perceptions.

The second tool comprises *cognitive representations* – the acquisition of knowledge through reason, and not necessarily through the senses. These include educational, philosophical, economic, sociological, ethical and legal discourse. For example, the role of libraries, cultural institutions or the People's Universities of ATD Fourth World.

These are based on the convergence of knowledge, a notion on which I would like to dwell on briefly. Since 1972, the Fourth World People's Universities have been investing in the sharing of knowledge between *the learned and those who know* – that is, between the knowledge of scholars and the knowledge of experience. The cooperation between cultural institutions is also based on the idea of mixing together several cognitive paths. In the field of art, we have a large number of examples of this kind of cross-over. For example, French composer Pierre Boulez who, in the late 1980s, shed light on the process of musical composition, by evoking the lessons of the Swiss artist Paul Klee of the Bauhaus School of Design in Weimar, Germany (from 1921 to 1931).

The combination of the sensory and the rational – and we know that these two capacities are linked – is undoubtedly the one that opens the widest perspectives for our knowledge of different cultures. Today, this combination is facilitated by new technologies, as admirably illustrated by the Museum of World Culture in Gothenburg, Sweden, inaugurated in 2004, or the Mucem (Musée des Civilisations de l'Europe et de la Méditerranée) in Marseille, France, established in 2013.

Whichever path we take – sensory, cognitive or combined – we have several ways to order pluralism, without suppressing it.

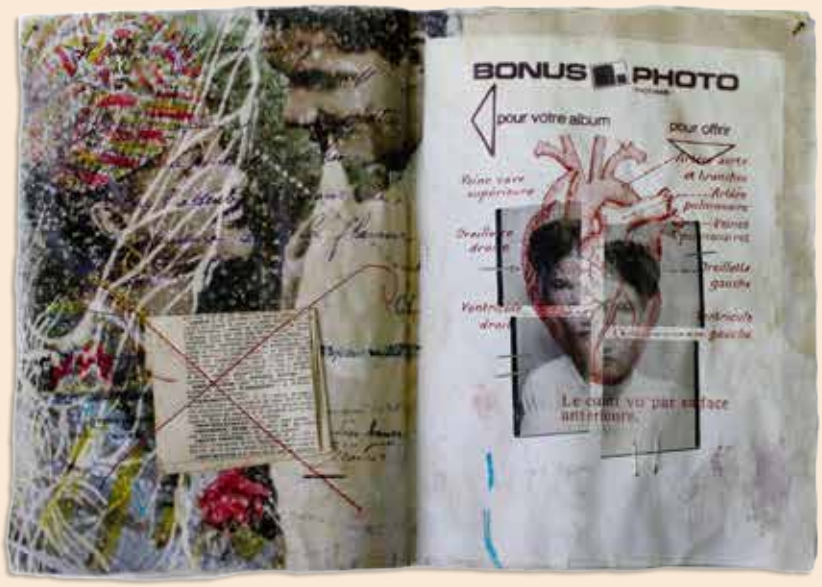
Going beyond fixed metaphors

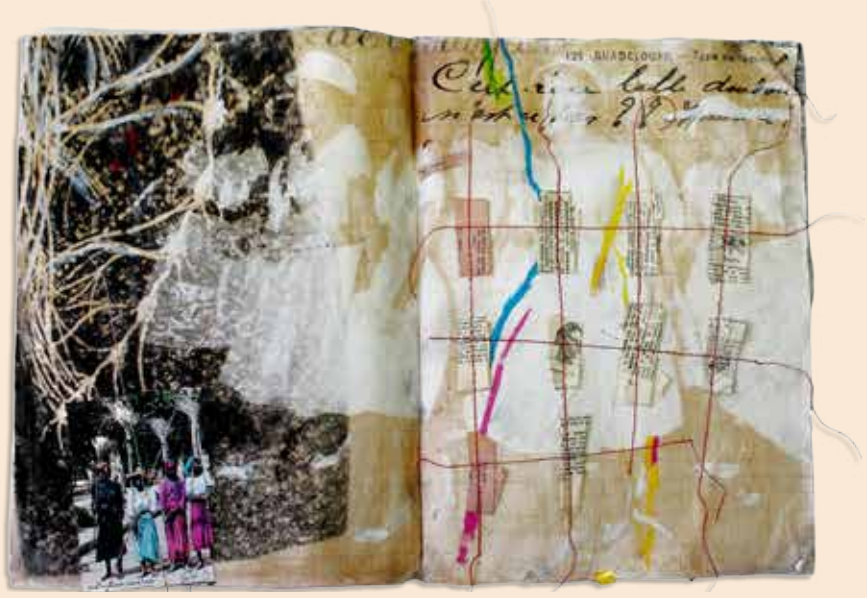
To avoid both the relativism and imperialism of values, an interactive and adaptable dynamic is necessary. The rapprochement of cultures must be understood as a process, a movement that encourages us to go beyond the fixed metaphors – human rights seen as the foundations, pedestals, pillars or roots of various cultures – and give preference to the metaphor that presents human rights as the *common language of humanity*. It suggests three processes, the dynamic effect of which is growing: from intercultural exchange (dialogue) to the search for equivalences (translation), and even to reciprocal transformation (creolization).

Dialogue, or intercultural exchange, improves the understanding and knowledge of the Other and thus facilitates rapprochement, but does not guarantee it. As an example, I summarize here the judges' dialogue on the death penalty, triggered in 1989 by a bold interpretation of the European Court of Human Rights (ECHR). The court had ruled that the extradition to the United States, of a man facing a death sentence violated the prohibition of inhuman or degrading treatment or punishment. By its potential applications to various third countries, this case law would have an influence throughout the world. It seems to have favoured a turnaround in 2001 by the Supreme Court of Canada, which is largely based on the decision of the ECHR. It was also used by the Supreme Court of Appeal of South Africa in 1995, to support the judgement on the death penalty as contrary to the prohibition of cruel, inhuman or degrading treatment.

© Gilles Elie-Dit-Cosaque (www.lamaisongarage.fr)

Lambeaux is an intimate diary reconstructed from disparate elements. It is a "Creole memory, Creole in the geographical and spiritual sense," according to its author,





the Martinique artist and filmmaker Gilles Elie-Dit-Cosaque. It is also a fantasized diary, where the individual and the collective intertwine in fragmented pages.

But *dialogue* remains subject to the goodwill of the actors and, in this sense, its contribution to the rapprochement of cultures is limited to *coordinating differences*.

The second way, which goes further in the recognition of common values, is translation. A true "miracle", according to French philosopher Paul Ricœur (1913-2005), it "creates a resemblance where there seemed to be only plurality". I would add that translation is "miraculous" in that it respects differences, while seeking equivalences that can make these differences compatible. Translation is a means of *harmonizing differences*, an approach that contributes to rapprochement on the principle of musical harmony, as defined by Plato in *The Symposium*: "From contrary elements, such as sharps and flats, the art of music, by making them agree with each other, produces harmony."

That said, we often encounter untranslatable concepts, and the misunderstandings they cause. For example, in Article 1 of the Universal Declaration of Human Rights, we read that "all men are endowed by nature with reason and conscience". Initially, only "reason" was mentioned. But one of the drafters of the Declaration, Zhang Pengchun of China, remarked that if the declaration was to be universal, the notion of reason alone was not enough. He proposed adding the Chinese term *liangxin*, which translated to *conscience*. In reality, the equivalence between *liangxin* and conscience is weak, because the Chinese term, derived from the characters *lian* and *gxin*, evokes moral conscience in the Confucian sense, that is, a conscience that favours otherness.

To solve this type of difficulty, we would need to go even further, by implementing the third means mentioned above: *hybridization* or, to avoid possible misunderstandings, *creolization*. I use the word *creolization* in the way it was used by the French poet Edouard Glissant (1928-2011), when he suggested opening up our particular poetics, one *with* the other. In other words, creolization makes it possible to *unify differences* by integrating them into a common definition.

In his book, *La Cohée du Lamentin* (2004), Edouard Glissant wrote: "Creolization is not a simple mechanism of inter-breeding. It is a mixture that produces something unexpected." To produce the unexpected is to find – beyond dialogue and translation, but thanks to them – a new, truly common meaning. It is a way of overcoming differences.

A shift from the poetic to the legal realm will allow me to examine the example of a concept with a universal vocation, the legal significance of which is evolving: crime against humanity.

Towards a mutual transformation

The notion of crime against humanity has a collective dimension – "a widespread or systematic attack on a civilian population" – and implies the depersonalization of the victim. First used in the charter of the International Military Tribunal at Nuremberg in 1945, this concept is implicitly part of the Western perception of humanity, which is based on the idea that each human being is an individual, and equally, a member of the human community.

But the concept has gradually been extended to the destruction of cultural property. In 2001, the judges of the International Criminal Tribunal for the former Yugoslavia (ICTY) ruled that when the destruction and degradation of buildings dedicated to religion or education is perpetrated with discriminatory intent, it amounts to "an attack on the very religious identity of a people.

As such, it almost exemplifies the notion of crime against humanity, because in fact it is humanity as a whole that is affected by the destruction of a specific religious culture and cultural objects that are attached to it." [ICTY, *Prosecutor* v. *Dario Kordic and Mario Cerkez*, IT-95-14/2, *Judgement*, February 26, 2001].

The question also comes up regarding Iraq. "The destruction of objects tracing the history of a people is an eloquent way of uprooting them, depriving them of their origins and destroying them in their soul," says French-Iranian jurist Pejman Pourzand (*Radio Notre Dame*, 6 March 2015]. Other commentators have referred to this kind of destruction as a "crime against the history of humanity".

To ensure genuine creolization through a reciprocal transformation, it would be necessary to integrate cultures that value the links between individuals of the same national community – as suggested by the Zulu word *ubuntu* (which, roughly translated, means common humanity) from South Africa, the Japanese term *uchi-soto* (the distinction between group members and others), or the previously-mentioned Confucian term, *liangxin* (conscience).

It would also be necessary to associate the cultures that impose duties on humans towards nature, like those that protect *Pachamama* (Mother Earth), for example, inscribed in the constitutions of Ecuador and Bolivia. This is perhaps how we should understand the proposal that is currently being circulated, to extend the notion of crime against humanity and genocide to *ecocide* – that is, the irreversible and serious damage being caused to the equilibrium of the ecosystem.

In order to endow the notion of crimes against humanity with a truly universal vocation, other traditions should enrich the Western vision of humanity itself.

The rapprochement of cultures, the theme of the ongoing International Decade (2013-2022), involves many paths that make it possible to resist both relativism and imperialism, and to reconcile the universalism of human rights with the pluralism of cultures. These are the paths that lead to reciprocal humanization.

Errance, *2012, by Haitian artist Sergine André*

© Sergine André / private collection of Maurice Depestre

Mireille Delmas-Marty (France) is a member of the Institut de France and an honorary professor at the Collège de France. She is a founder of the Association de recherches pénales européennes (ARPE), honorary president of the Pharos Observatory of Cultural and Religious Pluralism, member of the Haut Conseil de la Science et de la Technologie, and an administrator of the Bibliothèque nationale de France.

Delmas-Marty has published numerous books on criminal law, human rights law and the globalization of law, including: *Les forces imaginantes du droit*, in four volumes (2004-2011); *Résister, responsabiliser, anticiper* (2013); *Aux quatre vents du monde. Petit guide de navigation sur l'océan de la mondialisation* (2016), and *De la grande Accélération à la grande Métamorphose* (2017).

A missive for youth

© Magule Wango

He who knows not where he came from, will not know where to go, *by the Mozambican painter Magule Wango.*

Abdourahman A. Waberi

"An old African teacher used to say: There is my truth and your truth, but the truth is in the middle. To get close to it, everyone must move slightly out of their truth to take a step towards the other." This is one of the lessons that Amadou Hampâté Bâ wanted to transmit to young people on his continent and elsewhere, in a letter written in the 1980s. Today, this letter takes on a prophetic quality.

From one end of the Sahara to the other, a large segment of African youth have experienced only precarious lives. Destitute and disoriented, these young people throw themselves body and soul into a hazardous adventure. For them, to face the desert, the smugglers, the barbed wire, the waves of the Mediterranean, seems more bearable than the feeling of falling by the wayside, rotting on the vine. What else can they do? Move, flee, opt for migration and perish in the sea if they must. When questioned, the shipwreck survivors emphasize the lack of means of subsistence. Crossing the Sahara to be sold as a slave in Libya or joining the Boko Haram is neither an option nor a life plan.

Growing up in slums, these youth did not have the opportunity to appreciate the legacy of elders who were generous with advice and other lessons of life. Among them, is an emblematic figure for the entire African continent – the Malian, Amadou Hampâté Bâ (1901-1991), the man to whom is attributed the now-famous dictum: "In Africa, when an old man dies, a library burns down."

What he really said was: "I consider the death of each of these traditionalists as the burning of an unexploited cultural fund." It was 1 December 1960, and Hampâté Bâ was then the head of Mali's delegation at the UNESCO General Conference.

> *Just as the beauty of a carpet is the variety of its colours, the diversity of people, cultures and civilizations makes up the beauty and wealth of the world. How boring and monotonous would be a uniform world where all humans, fashioned according to the same model, thought and lived in the same way! Having nothing more to discover in others, how would one enrich oneself?*

Mali had just joined the Organization as an independent country. In his speech, he pleaded for the "gigantic oral monument to be saved from destruction by the deaths of traditionalists who are its only repositories [and who] are, alas, in the decline of their days."

I used to say to myself that as a teenager, I would have liked to have had Hampâté Bâ as my grandfather. Honesty forces me to recognize that I probably would not have had the ears to listen to his advice. The old *boubous*, the hoary heads and their traditional values did not attract me. I condemned in advance, this world that seemed to me passive and obsolete. I rejected its rules on principle. I was terribly wrong.

If today's world, in Africa and elsewhere, desperately needs tutelary figures like the author of *The Strange Destiny of Wangrin*, it is because the rupture between the generations seems to be complete. The family circle has shrunk considerably. Worse, it is no longer the solid foundation of awakening and transmission that it was yesterday.

"My dear young people…"

Six years before his death in 1991, Hampâté Bâ wrote a letter dedicated to youth that reads like a testament. "The man who speaks to you is one of the first-born of the twentieth century," he says. He then issues an alert: "Young people, last-born of the twentieth century, you live in a time which is at once terrifying, for the threats it imposes on humanity, and enthralling, for the possibilities it opens up in the field of knowledge and communication between people.

The generations of the twenty-first century will experience a fantastic encounter of races and ideas. Depending on how they assimilate this phenomenon, they will ensure its survival or cause their destruction by deadly conflicts. In this modern world, none can take refuge any longer in their ivory towers. All states, whether strong or weak, rich or poor, are now interdependent, if only economically or in the face of the dangers of global war.

Whether they like it or not, all humankind is sailing on the same raft: when a hurricane rises, everyone will be threatened at the same time. Is it not better to try to understand and to help each other before it is too late?"

The wise man of Bandiagara then encourages these young people – growing up and developing in a bipolar world where interest groups clash and tear each other apart – to "gradually produce a new mindset, more oriented towards complementarity and solidarity, both individual and international." Because we cannot stress often enough that "in our times, so fraught with threats of all kinds, people must emphasize not what separates them, but what they have in common, with respect for the identity of each. Meeting and listening to the other is always more enriching, even for the blossoming of one's own identity, than conflicts or sterile discussions to impose one's own point of view."

Macho Nne / Caribbean Peacock, *2014, from the C-Stunners series by Kenyan artist Cyrus Kabiru.*

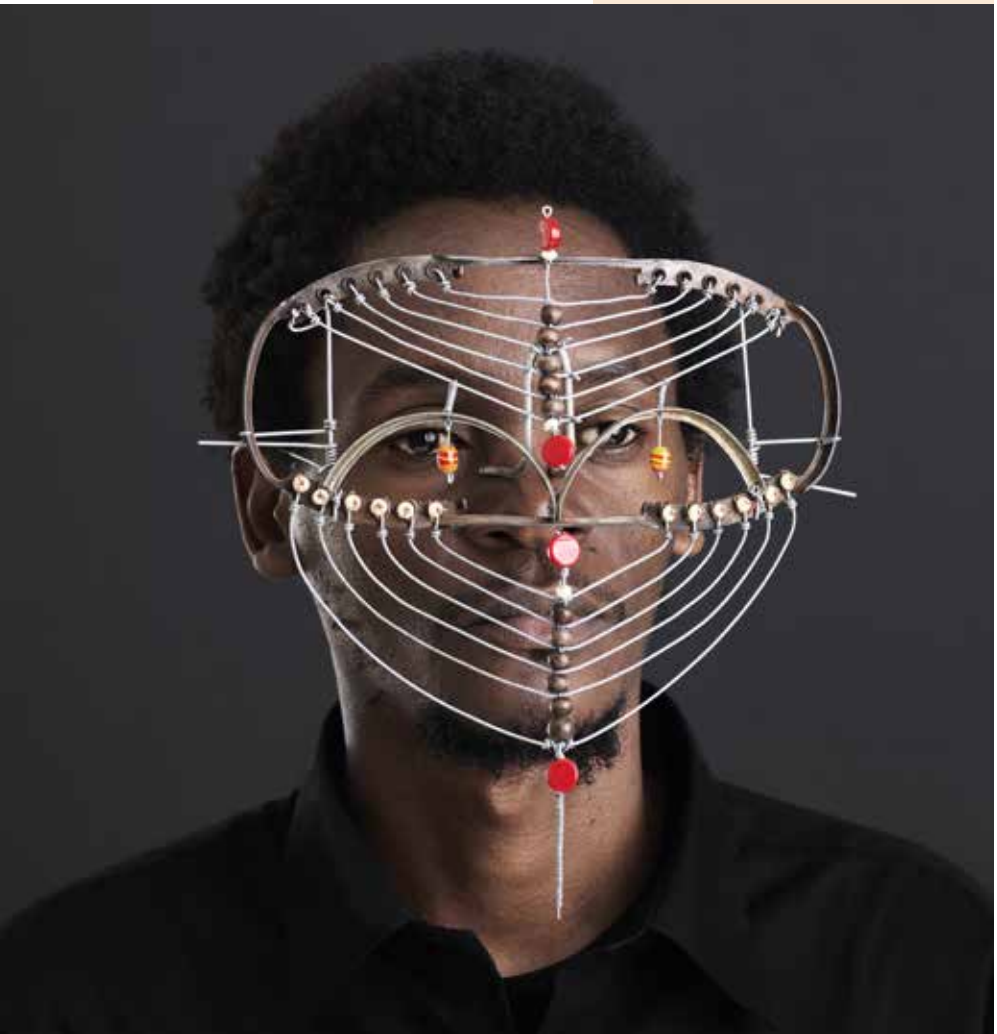
> *Whether individuals, nations, races or cultures, we are all different from each other; but we all have something similar too, and that is what we must look for, in order to be able to recognize ourselves in the other and to converse with him. Then our differences, instead of separating us, will become complementary and a source of mutual enrichment*

Eloquent and precise, the writer uses striking images to make his point: "Human life is like a big tree and every generation is like a gardener. The good gardener is not the one who uproots, but the one who, when the time comes, knows how to prune the dead branches and, if necessary, proceed judiciously with beneficial grafts. To cut the trunk would be to commit suicide, to renounce one's own personality and to assume artificially that of others, without ever completely succeeding. Again, let's remember the old saying: The log has spent a lot of time in the water, it may float, but it will never become a crocodile!"

"Young people, be this good gardener," Hampâté Bâ exhorts. "Then, well-rooted in yourselves, you will be able to open to the outside, without fear and without harm, both to give and to receive."

A defender of traditional African society, and recognizing that it had "its flaws, its excesses and its weaknesses", he draws our attention to the fact that it was "above all a civilization of responsibility and solidarity at every level," including the environment. "Humankind was also considered responsible for the balance of the surrounding natural world. It was forbidden to cut a tree without reason, to kill an animal without a valid motive.

Mali Ya Mfalme, Macho Nne | Nubia Kale *(Ancient Nubia), 2016. Artwork by the self-taught pluri-disciplinary plastician Cyrus Kabiru (Kenya).*



The land was not the property of humans, but a sacred trust entrusted to them by the Creator and of which they were only the managers."
In the era of the Anthropocene – the result of the divorce between humankind and nature – this lesson of our ancestors invites us to seriously question the way of life that we have adopted, which is destructive of both traditions and the environment.

Open-mindedness, diversity, dialogue and mutual understanding –these are the four pillars that bear the message of this precious letter from Hampâté Bâ. The time has come to put it in the hands of everyone, young and old, in Africa and elsewhere.

Storyteller, writer, poet, ethnologist, spiritual leader, numerologist, diplomat, Hampâté Bâ defined himself as "a graduate of the great university of the Word, taught in the shadow of baobabs". Having taken some unusual paths to reach the higher spheres of knowledge, he made it his mission to pass on the baton to us – regardless of our beliefs, our skin colour or our age.

Abdourahman A. Waberi, a novelist, essayist and poet, was born in what is today the Republic of Djibouti. He now lives between France and the United States, where he is a professor at George Washington University in Washington, DC. Author of several novels, including *Aux États-Unis d'Afrique* (In the United States of Africa) (2005) and *La Chanson Divine* (The Divine Song, 2015), he also writes a bi-monthly column for the French newspaper *Le Monde*. Translated into over a dozen languages, his work seeks answers from the world with anger, tenderness and compassion.

Our guest

Bangladeshi stylist Bibi Russell has devoted her life to Fashion for Development.

© Séverine Desmarest

Bibi Russell:
Finding magic in fingers

Interview by Krista Pikkat (UNESCO) and Jasmina Šopova

UNESCO's Artist for Peace and well-known designer Bibi Russell has achieved a tour de force: thanks to her, the humble *gamuchas* – traditional cotton towels that people in South Asia generally use to wipe their hands and faces – rival the most prestigious pieces on fashion podiums all over the world. But her real success is away from these podiums, in hundreds of weaving workshops in her country, Bangladesh, but also in Uzbekistan, Colombia, India.

In December 2017, she took part in India's Rajasthan Heritage Week, showcasing her khadi collection. The show was her tribute to Mahatma Gandhi and to the traditional Rajasthani weavers who created the homespun cloth.

Russell also participated in the Commonwealth Fashion Exchange in February 2018, with an exhibition showcasing sustainable fashion from the Commonwealth countries. It was launched at Buckingham Palace with the support of the Queen and the Duchess of Cambridge.

The designer with a difference is now working on what she calls "a difficult and emotionally very engaging project". With the direct support of Mamata Banerjee, Chief Minister of West Bengal, she has been working at the Liluah Home, the state's largest shelter for girls, since September 2017.

With this interview, The *UNESCO Courier* marks the celebration of the World Day for Cultural Diversity for Dialogue and Development, 21 May.

Here, she teaches and motivates the girls, some of whom are victims of child trafficking, to develop income-generating skills. "I can't believe that in the twenty-first century, when everyone is talking about women's empowerment and equal rights, we are still selling our girls!" she says, pointing out that destitute girls in the state are sold for less than $100. "If I have the strength to finish this difficult work, I hope it will open doors for these girls to start a new life filled with dignity and love."

Russell's efforts are paying off. On 7 March 2018, thirty-three girls from the shelter, including six Rohingya refugee kids, walked the ramp at a fashion show organized by the government in Kolkata and conceived by Russell. They were wearing clothes designed by their friends at the Home, who have been trained by Bangladesh's best-known designer.

Since the late 1990s, Russell has been working to develop traditional textiles and handicrafts, giving a chance to thousands of people to rise out of poverty thanks to their "magic fingers", as she puts it.

Fashion design was your true passion and vocation, though you first became famous as a top model. How did a young girl from Bangladesh decide to go to a fashion school in London?

At home, my mother used to sew clothes for us. My sisters never complained, but I was never quite happy with the clothes. So when I was 10 years old, my father bought me a sewing machine. You can barely hold a pair of scissors properly when you're 10, but I started experimenting.

© Bibi Productions

A young girl trained by Bibi Russell in Uzbekistan, embroidering traditional designs.

When I was 15 or 16, my father gave me a book about the fashion house of Chanel. I discovered French haute couture, and realized that there is a grammar in fashion that I wanted to study. I had received different awards for art between the ages of 6 and 12, but I did not want to study art. I wanted to do something different. I wanted to go to London. Over six months, the London College of Fashion refused my application, but they finally accepted me, with many conditions attached.

After twenty years in the West, where you built a successful career as a top model, you returned to Bangladesh in 1994. What made you do that?

Since I was young, I had a dream. I could not understand why Bangladeshi people were thought of as poor. For me, the country was rich with colours and music! When I went to Europe, my dream went with me. One day I knew that I was mentally and physically ready to go back home.

I believed that the people of Bangladesh needed me as much as I needed them. You need two hands to clap. Today, after more than twenty years of experience, I know I was right. They know I respect them and help them restore their human dignity. That is the most important thing. On the other hand, they give me so much love and affection! This gives me the strength to go forward. Nothing in the world can take me away from this work.

I have never turned my back on my country. My parents always lived in Bangladesh, so I returned home regularly even when I lived abroad. I was born in Bangladesh and spent my childhood there. I think childhood has a major impact on your life.

I have a wonderful family. My parents taught me to appreciate our culture as well as the culture of other countries. Bangladesh used to be a part of India, which was governed by the British and the Mughals. Thanks to the education my parents gave me, I learned all about Greater India and about the culture of other countries as well.

I think parents must teach their children more about their culture and traditions so that these traditions do not die.

When you returned to Bangladesh, you started a small tailor's workshop, which grew into Bibi Productions in 1995. Most traditional weavers live in villages. Why did you decide to base your company in Dhaka, the capital?

I only have one office located in Dhaka. I need an office from which we can connect to the rest of the world. But I spend 99.9 per cent of my time in villages. We work with craftsmen from different parts of Bangladesh. They are not from privileged families, and each one of them – starting from the person who makes tea in my office – feels that Bibi Productions is theirs.

I have done this for the people of Bangladesh, and Bibi Productions belongs to the country.

How would you define the philosophy behind Bibi Productions?

We cannot say that Bibi Productions is not-for-profit, but we make very little profit. Our focus is on saving and reviving the crafts and supporting the craftspeople, and on raising their awareness about the importance of education and health.

I see the difference since I started Bibi Productions in 1994. All the people working either in the office or in the villages have no more than two or three children. They know how to better manage the money they make, and their standard of living has improved. Having come out of poverty, they understand the importance of their children going to school. Education and health is the backbone of any economy in any country.

Bibi Russell with craftspeople in Rajasthan, India.

© Bibi Productions

How many people does Bibi Productions employ?

We have some thirty people from different corners of Bangladesh working in the office. There are people who first thought they would not have the skills and knowledge to work in the office. But I am able to recognize people with a positive attitude.

In addition, we work with thousands of craftspeople. I cannot say their exact number, but they are around 100,000. You think that's huge? It is not even one per cent of the weavers in the country! I wish that I could feel that I have reached the first step of the ladder before I die – there is so much more to be done.

In countries like India, Bangladesh, Central Asia, agriculture is the most important sector of the economy. People working in agriculture and handicrafts live side by side. I work with people who do things by hand: Fashion for Development is what I am.

How did the idea of Fashion for Development start?

It started when I held my first show at UNESCO, in 1996. Designers are very rarely given recognition by United Nations agencies, but the Organization recognized the link between fashion and development, education and health. UNESCO's "Weavers of Bangladesh" show was covered by twenty-nine television channels around the world. It was supported by Federico Mayor, the then Director-General of UNESCO, and Queen Sofía of Spain. If the media made me Bibi the model, these two people, who believed in me from the start, gave me priceless support in my career as a designer. I also received a lot of international support. Since then, I have been invited to top universities in the world, which now work on fashion for development, and to the World Economic Forum (WEF), because they realize the importance of the creative economy and the social economy.

© Bibi Productions

Bibi Russell pays tribute to the craftswomen of Barmer, Rajasthan, whose work was presented at a fashion show to celebrate Rajasthan Day in the Indian state, March 2017.

In 1999, UNESCO designated you as a Designer for Development. Then, in 2001, you were made an Artist for Peace. What do UNESCO's recognitions mean to you?

What I am today is thanks to UNESCO. But also, thanks to my work, people realize that Bangladesh does not only have problems, it is also a wonderful country.

When I was designated Designer for Development, I returned home and showed the certificate to the weavers. I told them that the honour was for them, not just for me. You can change people's minds when you respect their human dignity.

Any recognition gives you strength. I am a fellow of the University of the Arts, London. This recognition is given to me for the contribution I have made to promoting handloom. I have received the highest award from the Bangla Academy, Bangladesh's national language authority, established in 1955 on the model of the French Academy. And the biggest designers in the world have also recognized the work I do for development. The international recognition helps me a lot in my work of promoting Fashion for Development.

What defines your work as a fashion designer?

Everything we do at Bibi Productions is natural and handmade. I have never used synthetic fabrics or artificial colours. I don't expect people to wear natural and handmade all the time, but even if you have four or five outfits, wear them every now and then!

My models are inspired by traditional design. Of course I change colours, I simplify the design, but I never change the traditional way of weaving cotton or silk.

Among my biggest sellers are my accessories and scarves. My bangles are made out of water hyacinth, a plant that grows widely in Bangladesh. I now have women in six villages making these bangles. And my *gamuchas* are promoted by the Spanish actor, Antonio Banderas, so I do not need to spend money on publicity. I would never do that anyway – Bibi Productions is a self-funded project, and hundreds of people depend on me for their livelihoods.

How has your work evolved?

When I started working in Cambodia, I began recycling and today, I have become an expert at recycling! In Bangladesh, I make things out of what people throw away.

I was also inspired by the "rickshaw art" in Bangladesh to make spectacle frames that I personally wear very often.

But the real "revolution" was brought about with our design for young people. We do jeans in different colours, saris in a different way, modern blouses, etc.

How do you balance your family life with your professional activities?

I know married life, I have two children. When my kids were around 9 or 10, I had to make them realize that I have a dream, and that if I do not pursue it, I would be frustrated. Today, my parents have both passed away, my children live abroad, but the craftspeople I work with never allow me to feel alone. These are ordinary people, who need their wages on the first day of the month to pay the rent. They are not my family, but they mean more than anything to me.

Since I returned to Bangladesh, I started to support street children. I gave them some money on the condition they went to school. I became their guarantor for NGO (non-governmental organization) schools, where street children are not usually accepted. It was first one child, then another – now they are more than a hundred! They are my source of joy when I am in Dhaka.

Athens: Books everywhere

Anna Routsi

Athens, the Greek capital, kicks off a year-long celebration of reading, culture and knowledge as UNESCO's World Book Capital 2018, starting 23 April. "Books everywhere" is the motto this year, which means books and a feast of related activities are open to everyone, to be encountered and savoured in every corner of this historic city.

Book lovers in Athens and those visiting it, are in for a treat. Proud of having been named World Book Capital for 2018, the ancient capital kicks off its global cultural event to celebrate books in myriad ways, in April 2018.

In preparation for the event, the City of Athens has worked hard to translate the vision of the Mayor of Athens, Georgios Kaminis, into reality. The aim of the mayor – and his team of seven people working on the event – has been to involve citizens of various social, ethnic and age groups and to diffuse the book and reading culture throughout all of Athens' neighbourhoods via smaller, localized activities. This is expected to increase the self-esteem of the people and contribute to social integration and coherence. Additionally, the city's creative forces would be merged with a common cultural goal: to leave a solid legacy, in terms of physical evidence and in the mindset of its citizens, encouraging them to love and read books, long after the year has gone by.

To make this possible, the City has joined hands with over 150 institutions where learning takes place, and with writers and the publishing industry.

© Jean-Claude Beaujouan

Le refuge *(The Refuge), an installation at the Ivresse Livresque exhibition, Amboise, France, 2015.*

These include cultural institutions, museums, civil-society groups, startups, non-governmental organizations (NGOs), embassies and international organizations. Not surprisingly, about 150 libraries across Greece will implement several special programmes within the summer reading campaign, led by the National Library of Greece.

Municipal programmes and organizations will also participate in the year's activities – including the City's Athens Culture Net and Open Schools, both funded by the Stavros Niarchos Foundation; Technopolis, the industrial museum and cultural complex; OPANDA, the Youth, Culture and Sports Organization, the civil-society platform SynAthina and refugee programmes.

One million visitors expected

The programme features a vivid patchwork of over 250 events and activities, all revolving around the world of books, learning and knowledge. With a million visitors expected, the city aspires to provide a literary backdrop to cater to all tastes and ages.

Besides spreading a love for books and learning, it hopes to foster open dialogue – not only for the creators, stakeholders and the intellectual elite, but most importantly, for all its citizens.

Books and reading are melded with art and creativity, focusing on learning, but also exhibiting that books can bring joy and pleasure to readers.

At a time when the country is going through financial hardships and the book industry is facing a crisis, financing the event has had its challenges. Even so, the City of Athens has allocated a budget of €500,000 for communications to support the event, and contribute to the book activities of OPANDA. Donations from institutions, sponsors, and embassies that will directly support the programme amounted to another €500,000 (at the end of February 2018) and was expected to increase. What surprised and motivated us was the interest and willingness of most participants to commit and undertake actions, using their own means to be a part of this very special event for the city.

Anna Routsi (Greece) is an advisor to the Mayor of Athens for the programme and communication of Athens World Book Capital 2018.

Filling the cultural vacuum

Lucy Mushita

Southern Africa's youth are as talented as young people anywhere else. But with disappearing local traditions, and the lack of avenues to channel their creativity, they live in a cultural vacuum. Consuming content that is bombarded on the internet is not enough – these young people need to be given access to the right tools and opportunities, and to be guided and encouraged to craft their own stories.

The African continent is overflowing with talent: musicians, writers, poets, philosophers, dancers and other artists. These artists and their creative work are the conduits through which cultures pass from one generation to the next. But many of them have lived in exile: Kenyan writer Ngugi wa Thiong'o, Nigerian playwright Wole Soyinka, Congolese novelist and chemist Emmanuel Dongala, French-Congolese author Alain Mabanckou and Zimbabwean musician Thomas Mapfumo. The list goes on. Some exiled Africans are teaching at prestigious universities abroad where their real value is appreciated – while students in their home countries are deprived of their wisdom.

At the same time, traditional oral literature is disappearing from our cultural scene. When I was young – I grew up in a small village during apartheid in Southern Rhodesia (now Zimbabwe) – my identity and cultural needs were nourished through this literature that elders conveyed through stories recounted in the evenings. Involving acting and singing and dancing in the community, these "lessons" complemented the formal education we received.

It was in school that I read the classics by numerous icons of English, French and American literature. These books did not reflect our reality, and were devoid of thoughts that might have given us any ideas of equality with Whites. But regardless of the censorship, reading opened up a whole new world for me – introducing me to other cultures and to philosophical thinking and reasoning, which led to questioning the status quo.

We Live in Silence VIII, *by the Zimbabwean artist and plastician, Kudzanai Chiurai, 2017.*

Today, young Africans know very little about our traditional heritage, and would rather spend their time discovering Hollywood films, or playing games on the internet. Instead of passing down our own culture to our children and grandchildren, and having them create their own art based on that culture, they are paying for foreign entertainment.

The outcome is that our youth is disconnected from both our traditions and the work of contemporary African authors and thinkers.

Yet, our youth is as talented anywhere else in the world. I have witnessed young girls and boys produce the most beautiful music with the most rudimentary instruments, or making some of the best short films using their smartphones – all without any formal training.

Lack of funds?

How can Southern Africa shape public policy to fill this cultural vacuum with relevant content? How can African youth learn to reflect before regurgitating whatever comes their way? How can the region reject that which is toxic and incorporate that which is untainted, into their own creative work?

The common argument about a lack of funds may be valid in many cases. But it is interesting to note that nearly every Southern African country spends millions on football stadiums and on the inflated salaries of footballers. It is true that sport must be promoted and that football stadiums are generally profitable. One solution could be to create a strategy in which sports and culture were merged. Revenue from stadiums, for example, could be channelled to fund libraries, cinemas, theatres, music centres.

Another frequent political argument is that any investment should create jobs. Take the example of Hollywood, which employs thousands, if not millions, directly or indirectly – economically benefiting the United States, besides allowing it to use its soft power. Now that technology is available to us, we too are in a position to craft our own stories – through literature, cinema, and art.

Homegrown success

Being creative doesn't have to be prohibitively expensive. In 2016, the Italian publisher 66thand2nd, published *La felicità degli uomini semplici* (The happiness of simple men), a book of short stories on soccer in Africa, by African writers. In Italian and at €18 a copy, not many Africans can afford it.

By contrast, *Neria*, the homegrown 1993 arthouse film scripted by Zimbabwean author and filmmaker Tsitsi Dangarembga and directed by fellow-Zimbabwean Godwin Mawuru – which explores gender issues – was more accessible and remains the highest-grossing film in Zimbabwe's history.

While it was nearly impossible for someone of my generation to write their own stories while growing up, today's African youth have both the possibility and the tools at their disposal to do so. Women writers and philosophers – like Ken Bugul (Senegal), Kidi Bebey (France-Cameroon), Nadia Yala Kisukidi (born in Belgium, of a Congolese father and a French-Italian mother), Virginia Phiri (Zimbabwe), Chimamanda Ngozi Adichie (Nigeria) – are all writing their stories, and Africa needs to listen to and engage with them. Most world-views of Africa continue to be tainted by colonial points of view – African voices, if provided the right platforms, could change that.

Lucy Mushita (Zimbabwe) is a novelist and essayist. Born in Southern Rhodesia, she grew up in a small village during apartheid. Her novel *Chinongwa* (published in South Africa in 2008, and in France in 2012) explores this period of her life, before she left her country in 1986, for France, the United States and Australia – eventually making Paris her home.

With this article, the *Courier* marks the celebration of UNESCO's Africa Week in the month of May.

Young people would greatly benefit from e-resources in forms of downloadable books. The same applies to visual artists, whose work needs galleries to exhibit their genius. It is also essential to develop policies governing intellectual property to protect their work.

> "Revenue from stadiums could be channelled to fund libraries, cinemas, theatres, music centres"

Young Africans: reinventing politics

Hamidou Anne

Many young people in Africa are taking a stand against the current politics in their countries. As civil-society campaigners who are active on social media networks, they are challenging the established authorities – using rap and graffiti, and bringing traditional cultural codes up to date. Supporters of direct democracy, they are preparing the way for a society that is less hierarchical and 'decolonized', at last.

The African political classes have failed in their mission to build nations characterized by justice and progress, in spite of a number of significant and very welcome advances. Adding the non-existence of credible alternatives among the opposition parties, we are forced to admit that politics in general have reached a low point. This impasse is leading large numbers of young people en masse to adopt a stance of defiance – which could be summed up by the phrase: "they're all the same".

Young people are getting politically involved in new ways – creating startups, using digital forms of activism and forming citizens' groups. Yet none of these initiatives can replace politics, which is the only way to change the course of a country's history, to halt the perpetuation of inequalities, and to restore a sense of dignity to millions of people. Much needs to be done urgently in Africa, but, above all, there is a need to foster the emergence of a new kind of dialogue among youth – using with other methods and other players if necessary, and with the ultimate aim of seizing power democratically.

One alternative is gradually taking shape and deserves careful attention. New political youth movements are appearing, springing up from urban cultures and suburban neighbourhoods. Examples include Y'en a Marre ("We've had enough"), a group of rappers in Senegal, Le Balai Citoyen (the People's broom), in Burkina Faso and Filimbi and LUCHA (Lutte pour le Changement, or Struggle for Change) in the Democratic Republic of the Congo (DRC).

These civil society movements are a breath of fresh air compared to the drab and essentially interchangeable political classes. The message of these new elites breaks with classical political-speak – it is raw, direct and delivered in a language that can be understood by those to whom it is addressed, which explains its success. So, when Y'en a Marre campaigned to get people to register to vote in 2011, the turnout at the elections was unprecedented. It was the same for the symbolic street-cleaning operation in Ouagadougou, after the popular uprising of October 2014 against a proposed amendment to the Constitution, which would have allowed Burkina Faso's former president, Blaise Compaoré, who had been in power since 1987, to stand again in the presidential elections.

Decolonizing politics

These new African icons are disconcerting – as much because of what they say and the way they say it, as by the way they dress, which breaks with the traditional suit-and-tie of politicians. The *decolonial* dimension of their projects represent a real challenge to the political classes and even the general public, largely because of their horizontal (rather than hierarchical) reach, combining real political action with a social stance.

© Sophie Garcia/Hans Lucas

These youth movements are deeply political, even if they unconsciously or tactically hide behind a 'social' label. They also show no desire to participate directly in elections.

These movements are all attempts to decolonize politics. They aim to return politics to the people – into the hands of citizens who have hitherto been excluded from the democratic process and consulted only to add their stamp of approval by voting. Interestingly, the way these groups are organized is a form of direct democracy. Through a network of local branches, Le Balai Citoyen enables people across the nation to take part in decision-making. With a slightly more limited horizontal dimension – because of the notoriety and massive popularity of its leaders – Y'en a Marre also allows everyone to join in the process of consultation. This kind of transversal connection does not exist in conventional politics.

The combination of methods arising from contemporary citizens' groups and traditional African negotiation strategies, offers a model for how a political organizational structure in Africa might work.

These groups have proven their effectiveness. In Senegal, during the mobilization of 23 June 2011, and in spite of police repression and surveillance by intelligence agencies, Y'en a Marre triggered a massive movement. This helped to torpedo amendments to the Constitution by parliament that would have allowed the re-election of Abdoulaye Wade – and probably ensuring that his son took over when he stood down.

Crowds cheering the caravan of Balai Citoyen, during the demonstration against the constitutional revision project in Ouagadougou, Burkina Faso, October 2014.

Art at the service of politics

By using music, dance, graffiti and references borrowed from street poetry, these movements are succeeding in bringing together young people who understand the language and codes of their neighbourhoods. On the streets and via the internet, they are calling for an alternative dialogue and for projects that give wings to their dreams. These new players in African politics are employing a range of cultural references to support their actions. Rap music, for instance, has been a powerful vector for getting the message of opposition across. Other statements include using national languages (Wolof by Y'en a Marre and Moré by Le Balai Citoyen) or wearing an Amílcar Cabral hat (named after the emblematic leader of the struggle against the Portuguese colonization of Guinea-Bissau).

As beacons of hope, the responsibility of these movements is great. They represent political forces that are uninhibited, free, and unencumbered by colonial burdens. It is thanks to them that the continent no longer conjures up only images of pity, generated by poverty, famine, AIDS and war. We are on the threshold of a radically emancipating project. Much like the anti-austerity Indignados movement in Spain, which gave rise to the far-left Podemos political party in 2014, these groups will sooner or later be called upon to stand in general elections. We could then witness a *decolonial* turning point vis-à-vis Western countries – with the possibility of societies founded on our own social and cultural realities.

Hamidou Anne (Senegal), a graduate of France's École Nationale d'Administration (ENA) and Sorbonne University, has held several positions in Senegalese government organizations and contributed articles to the international media. He is currently working on a doctorate in political science at the Gaston Berger University, Saint-Louis (Senegal).

With this article, the *Courier* marks the celebration of UNESCO's Africa Week in the month of May.

Listen to the voice of the lake

Chen Xiaorong

The Bear Lake People in the central Northwest Territories of Canada have taken their destiny into their own hands. After decades of efforts, they won the right to self-governance in 2016. That same year, they also managed to inscribe their territory, Tsá Tué, in UNESCO's World Network of Biosphere Reserves. They are on the right track to keep alive the water's heart, on which their own survival depends.

With this article, the *UNESCO Courier* marks the International Day for Biological Diversity, 22 May.

© Tsá Tué Biosphere Reserve

"I go out by boat six hours a day, quite aways – from one side of the lake to the other, depending on the weather. I see nothing but an endless flat land... that's where my ancestors were. I keep warning my sons: "Just look at the land and it will tell you the story it has to tell you. You don't want hear it? Yet you can say it by heart." Who is this man who asks his sons to listen to the voice of their land and chooses to cross a frozen area of over 30,000 square kilometres? His name is Raymond Tutcho. He lives close to the Great Bear Lake, the last large pristine Arctic lake.

Respecting nature and their elders is deeply rooted in the minds of his people – not more than 600 souls, almost all of whom are Sahtuto'ine Dene. Dene people are an aboriginal group of First Nations who inhabit the central Northwest Territories of Canada.

They live in Déline, a small settlement on the western shore of the lake. Sahtuto'ine means the 'Bear Lake People' and Déline, 'where the water flows'. Tutcho is chief of the new Déline Got'ine government (DGG), Canada's first indigenous, public self-government, formed in September 2016.

Unique relationships

The lake has a *Tudze*, the Sahtuto'ine believe. This 'water's heart' beats at the bottom of the lake, pumping its life-giving waters through the world's rivers and oceans. The pristine wilderness of the Great Bear Lake forms the foundation of their cosmology, history and traditional law, and of Déline's renewable resource economy.

The people of Great Bear Lake essentially live off the renewable resources offered by the lake.

Dene's spirituality includes appreciating all the elements of the world. Animals, birds, fish, thunder, lightning, water, rocks, all possess a living force and must be respected. All of nature is alive, and everything has its own spirit. Thus, by obeying laws and being effective stewards of the land, the essence of being Sahtuto'ine is retained by the community.

A constant message from their elders is that they must be responsible custodians of the things gifted to them by the earth. As long as these gifts are looked after and kept in good condition, they, in turn, will continue to bestow their bounty on the people.

"We have unique relationships with the lake and its surroundings that go back thousands and thousands of years," explains Charlie Neyelle, Elders' Representative of the government's Main Council. "Some have prophesied that Great Bear Lake will be the last place where the water will be alive because the water's heart is still beating," he says, adding: "But if we kill it and if it dies, everything will die. To prevent that from happening, we need to educate people about the importance of water."

"We don't value money," explains elder Leon Modeste. What the community is worried about is that modernization will bring more development projects to the reserve, upsetting the natural balance.

Managing their own lands

Though the elders of Déline have long exhorted everyone to live in harmony with their surroundings, climate change and increasing development pressures mean that drawing on traditions and taking other measures to preserve their way of life has become imperative.

The community relies on harvesting fish and wildlife to provide for much of its needs. Its renewable resource economy includes limited – but increasing – tourism and infrastructure development.

The establishment of the indigenous public DGG has helped the economy tremendously. Hard-won after decades of political activism, self-rule has meant that the Déline community now has one government, with one set of rules – making it easier to preserve their culture, language, spiritual practices and land-based way of life.

For instance, when it was noticed that the number of caribou dwindled from 500,000 fifteen years ago to 60,000 due to climate change, the DGG introduced limits on hunting the animals. "We all honour these rules," explains Leonard Kenny, Community Economic Development Officer of the DGG. However, other animals, like moose, continue to be hunted "to a certain extent," he adds.

In 2013, Déline elders and key community agencies held talks on setting up a biosphere reserve. The Tsá Tué biosphere reserve steering committee was formed the following year. The partnership between government and non-government organizations has broadened the consensus about the critical role indigenous people play in managing their own lands.

In March 2016, Tsa Tué was added to UNESCO's World Network of Biosphere Reserves. The event was unanimously hailed and celebrated by the community. "The lake can't speak for itself, we are going to be the voice for the lake," enthused Gina Bayha, a coordinator for the biosphere reserve.

The Tsá Tué Biosphere Reserve Stewardship Council, comprised of Déline residents, is in charge of biosphere implementation. It includes representatives of the Déline Renewable Resources Council, other key Déline agencies, Parks Canada, elders and youth. Decisions of the council are based on consensus.

Spanning an area of 93,300 square kilometres, Tsá Tué is the largest biosphere reserve in North America. It includes the Great Bear Lake on the Arctic, the largest lake lying entirely within Canada, and part of its watershed within the Déline District of the Sahtu Settlement Region.

Huge expanses of pristine boreal forest and taiga, rivers and mountains cover much of the watershed, which is divided into three ecological zones: the Taiga plains in the west; the Taiga shield to the south-east, which includes the drainage area of the Camsell River; and the Southern Arctic ecological zone on the north-eastern edge of the lake. Within these eco-zones, the lands are further classified into nine ecological regions and a total of twenty-two eco-districts. Each of these smaller areas have a distinct combination of landforms, permafrost (perennially frozen ground), soils, climate and biological communities which makes them unique.

The waters of Tsá Tué are largely unpolluted, its fisheries are in good shape, and there is an abundance of wildlife. The animals found here in large numbers include the barren ground caribou, grizzly bear, moose and muskox, and a variety of migratory birds, attesting to the high degree of ecological integrity in the reserve.

Don't let modernity kill the heart

Reconciling tradition with modern living while ensuring that indigenous people can safeguard their economic and social well-being is often difficult – with Canada's First Nations people, this is no different. Modern life is intrinsically linked to modern technologies, the use of which depends on the knowledge of modern languages. Younger people learn English, and gradually lose their connections to their tribal language.

According to UNESCO's Atlas of the World's Languages in Danger, there are eighty-eight endangered languages in Canada. Among them, Sahtúot'ı̨nę Yatı́, spoken by the Bear Lake People and spread over four communities in Canada (1,100 speakers in 2006) is considered 'definitely endangered', which means that children no longer learn the language as a mother tongue in their homes. It is only two steps away from becoming 'extinct'. How then is the knowledge and wisdom that elders possess transmitted to younger generations? As its languages disappear, indigenous knowledge is disappearing too.

On 6 December 2016, Canadian Prime Minister Justin Trudeau announced his commitment "to enact an Indigenous Languages Act, co-developed with Indigenous Peoples, with the goal of ensuring the preservation, protection, and revitalization of First Nations, Métis, and Inuit languages" in the country.

The DGG is working on strengthening the education system and plans to pass their own laws to make sure that the Déline are taught and encouraged to use their aboriginal language at their workplaces.

These efforts reflect both the spirit of open-mindedness in Canada and a return to traditional sovereignty within modernized governance structures. It offers important lessons for other biosphere initiatives to forge new relations of respect, harmony and solidarity between humanity and the planet.

The Tsá Tué experience, it is hoped, will encourage more indigenous communities to manage their own biosphere reserves.

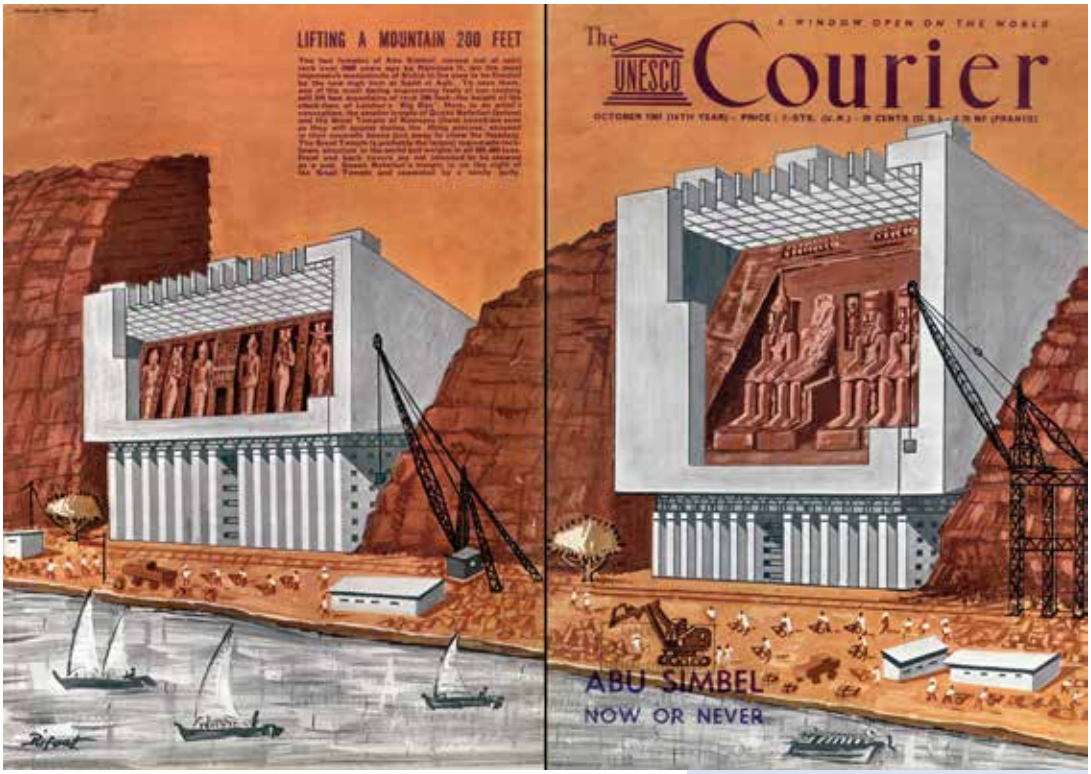
Biosphere Reserves

UNESCO's World Network of Biosphere Reserves is the centrepiece of UNESCO's Man and the Biosphere Programme (MAB), launched in 1971. It aims to promote solutions by reconciling the conservation of biodiversity with its sustainable use. Comprising terrestrial, marine and coastal ecosystems, biosphere reserves are special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and the management of biodiversity. They are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located.

Nightfall at Great Bear Lake. The natives believe that Tudze, *or "Water Heart" lives and breathes in the depths of this lake, the last to remain intact in the Arctic.*

The UNESCO Courier is 70!

Attending the school of free thought



The UNESCO Courier, *October 1961*.

Roberto Markarian

In the 1960s, a teenager dreamed of escaping the cramped confines of his home in a poor neighbourhood in Montevideo, where he lived with his parents, who were barely literate. He wanted to go far, and went on to pursue a brilliant career in pure and applied mathematics in Brazil. He was eventually elected rector of the University of the Republic in Uruguay, in 2014. But before that, Roberto Markarian attended another kind of school – that of free thought – which he discovered within the pages of the *UNESCO Courier*.

I came from very modest beginnings – my grandparents were illiterate and my parents barely knew how to read and write. My knowledge came from my studies in the public-school system of my country, Uruguay, and from my reading. Between the ages of 12 and 17, I regularly read the *UNESCO Courier* and that is how I absorbed culture. I can still see the images on the magazine's covers, and so many questions that shook the world – of science, culture, and education during the past century – come back to mind. Many of these issues still make headlines and remain relevant – the challenges posed by illiteracy, access to water, preserving the world's historical heritage, etc.

Since it was launched in 1948, the journal rapidly gained enormous prestige because of its open-mindedness – which made it a reference source for hot topics and controversial issues.

I knew that I would find a variety of opinions in its pages, and a vision that was not apolitical – that is not the point – but objective; an analysis of the subjects that was both balanced and thorough at the same time.

I still have a particularly vivid memory of the issues dedicated to the Nubia campaign. I was a high-school student back then, and knew nothing about the Abu Simbel temple. In the *Courier* issue of February 1960, Save the Treasures of Nubia, I learnt that the construction of the Aswan Dam across the Nile in Egypt would flood 3,000-year-old monuments. This was at the end of the 1950s, and UNESCO mobilized the whole world to save them.

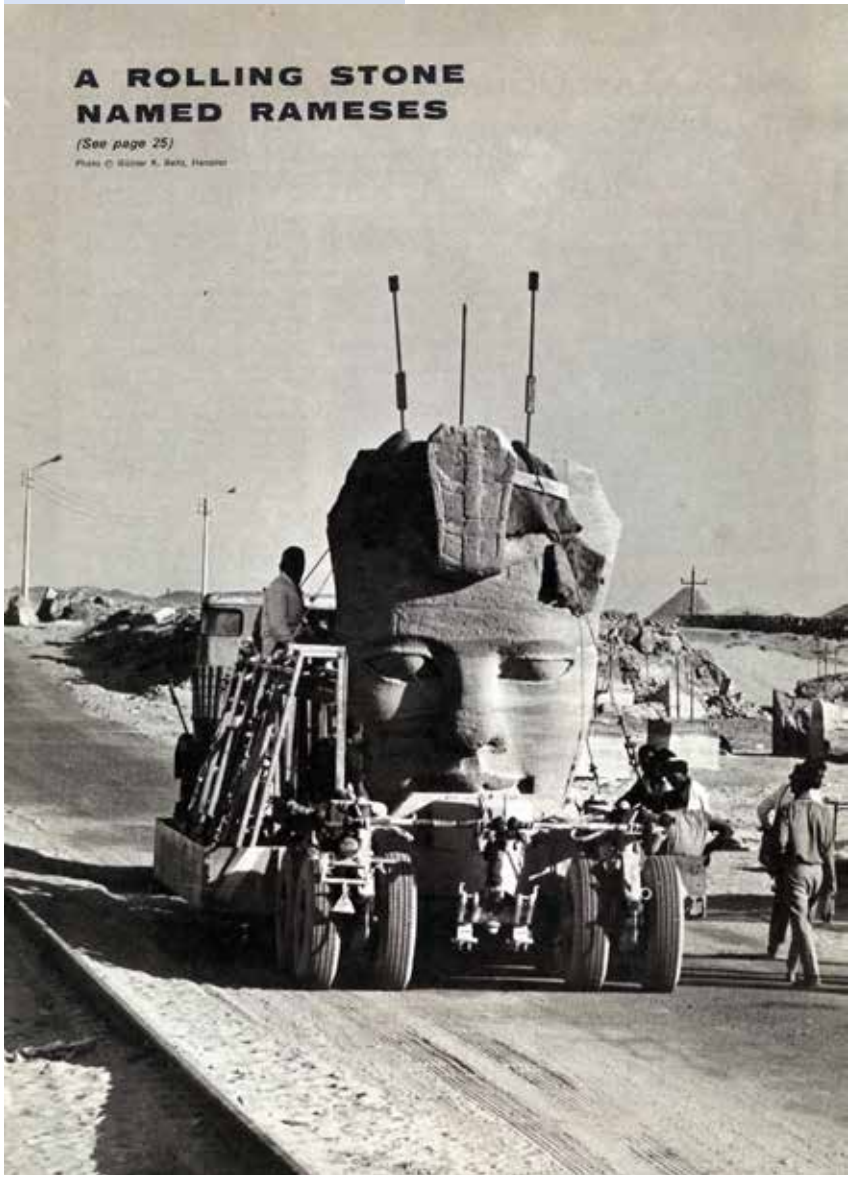
The Organization garnered tremendous international support to undertake the monumental effort of entirely dismantling the majestic Abu Simbel temple and rebuilding it at another location, several metres higher – so that twice a year, the rays of the sun would penetrate the temple's inner sanctuary, just as they did in its original location.

A formative journal

Impressed by the four colossi of Rameses II, I read, in an issue entitled *Abu Simbel, Now or Never* (*Courier*, October 1961), this detailed explanation by Peter Ritchie-Calder, the famous British scientific writer: "A narrow passage leads to the inner sanctuary where are seated the statues of the three gods to whom the temple is dedicated, and Rameses himself.

And here is seen the purposeful ingenuity of the architects and engineers. Like skilful stage-lighters, they contrived that the rising sun would penetrate 200 feet into the heart of the mountain, to illumine the faces of only three of the immortals. The fourth, the god of the Underworld, Ptah, on the extreme left remained eternally in darkness. This essential feature of Abu Simbel was one of the things taken into account in deciding how the temple should be finally preserved from the rising waters of the High Dam."

Back cover of the Courier *of February 1967.*



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Year after year, the *Courier* reported on every step of this unprecedented international undertaking – *The Nubian Campaign is Launched* (May 1960), "An Account of Excavation in Nubia during 1961-1962" (November 1962), *Victory in Nubia* (December 1964), "Dismantling Abu Simbel" (November 1965), "Rameses finds a New Home" (February 1967), *The Greatest Archaeological Rescue Operation of all Time* (February-March 1980) – thus echoing one of the greatest victories of international solidarity, as the title of an article in the August-September 1971 issue suggests.

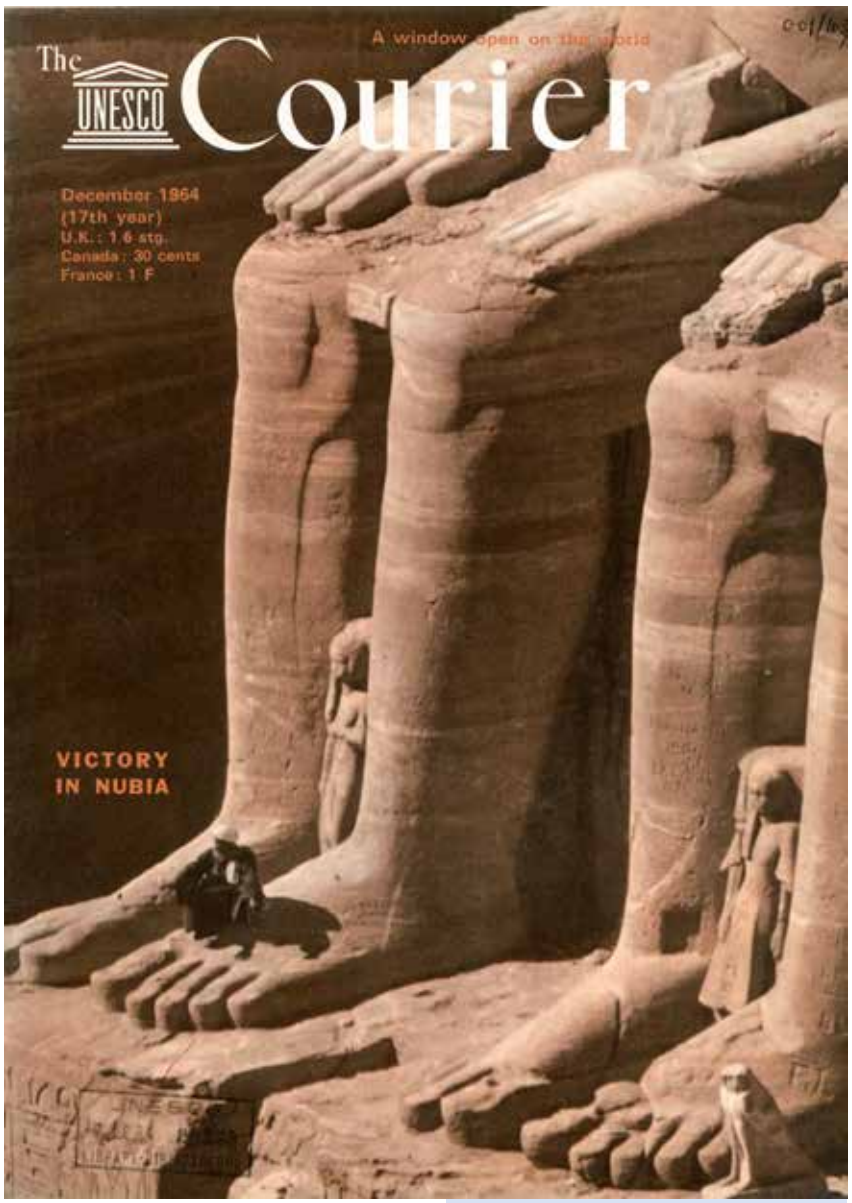
At the time, the *Courier*'s collaborators included Albert Einstein, Claude Lévi-Strauss, Jorge Amado, Bertrand Russell, Robert Capa – I discovered who they were, what they did and what they thought, by reading the journal. They enabled me, as the watchword of the *UNESCO Courier* professed back then, to look through "an open window onto the world".

When, in the mid-1960s, I started university life to study engineering and mathematics, I dedicated much of my time to union activities and the university's management, and stopped regularly reading the *Courier*. But fortunately, in spite of the vagaries of my country's history, I managed to save nearly all the issues I had – bound together with a system of metal wires that would seem slightly outdated today.

As for the *Courier*, it continued its existence until 2001, when its monthly publication stopped. A lack of financing and support forced it to close down in 2011. We thought that was the end of it.

A call to humankind

But five years later, the magazine reappeared. The first issue of the revived *Courier* was published in April 2017, with the motto: "Several Voices, One World". Now a quarterly, it continues to enrich the collection. You can access the entire collection, from 1948 to the present, in the digital archives. Most of the archives are available in English, Spanish and French, but issues from the last few years can be found in many more languages on the journal's website. It is worth the detour. I recommend it. Reading the *Courier*, you will discover a serious vision of the major current issues facing humanity. Its massive ambition – it is one of the greatest past and current merits of UNESCO – is to promote links between various forms of thought, different ways of looking at problems, and a call to humankind.



The UNESCO Courier, *December 1964*.

> “UNESCO mobilized the whole world to save the monuments of Nubia”

Human dignity: the compass guiding your journey through the world’s cultural landscapes

Today there are no more unexplored continents, unknown seas or mysterious islands. But while we can overcome the physical barriers to exploration, the barriers of mutual ignorance between different peoples and cultures have in many cases still not been dismantled. A modern Ulysses can voyage to the ends of the earth. But a different kind of Odyssey now beckons – an exploration of the world’s many cultural landscapes, the ways of life of its different peoples and their outlook on the world in which they live. It is such an Odyssey that the *UNESCO Courier* now proposes to you, its readers. Each month contributors of different nationalities will provide from different cultural and professional standpoints an authoritative treatment of a theme of universal interest. The compass guiding this journey through the world’s cultural landscapes will be respect for the dignity of man everywhere.

June 1989. First editorial by Bahgat Elnadi and Adel Rifaat, Director and Editor-in-Chief of the *Courier* (1988-1998).

To reiterate what I have already stated, the journal’s major contribution is the promotion of a culture which encompasses both a diversity of opinions and respect. This is the culture – and I say this with the utmost sincerity, recalling my family background – I acquired by reading the *Courier* with passion and enthusiasm. I was a young boy who was eager to learn, and through its pages, I found a source to do so. This is why I write these lines.

The importance of UNESCO and its *Courier* in today’s world, and tomorrow’s, is even more significant, as the fundamental principles of the Organization’s Constitution are being put to the test by those who promote “the mutual incomprehension between peoples” and contradict these principles “by exploiting ignorance and prejudice”. Let us not forget this.

Roberto Markarian (Uruguay) is the rector of the University of the Republic and Professor Emeritus at the Rafael Laguardia Institute of Mathematics and Statistics (IMERL) in the university’s Faculty of Engineering. He has extensive experience of trade unionism, first as a student and then as a teacher. He was imprisoned for political reasons, from 1976 to 1982, during the military dictatorship in Uruguay. On the occasion of UNESCO’s 70th Anniversary Celebration in 2015, Markarian spoke on the topic “70 years of UNESCO and its impact on Latin America” in Montevideo, during which he highlighted the role of the *UNESCO Courier*.

The year 2018 marks the 50th anniversary of the completion of the Abu Simbel heritage safeguarding campaign.

See, old river, the men who will carry these giants far away from your waters

On 8 March 1960, UNESCO inaugurated its international campaign to safeguard the monuments of Nubia. André Malraux, who was French Minister of State for Cultural Affairs at the time, presided the over the ceremony at UNESCO Headquarters. His speech was published in the *Courier* of May 1960. Here are some excerpts.

At their highest expression, Egyptian conventions were designed to mediate between ephemeral men and the controlling stars. It is an art that consecrates night.

That is what we all must feel before the Sphinx at Gizeh, as I remember doing last time I saw it at twilight. I thought then, how the second, furthermost pyramid enfolds the view, and how it makes this colossal deathmask seem like the guardian of some trap set to lure the heaving desert and the darkness. This is the hour when the oldest fashioned forms recapture the soft murmur with which the desert echoes the timeless devotions of the East; the hour when they restore to Ufe these places where the gods were heard; when they banish the immensity of chaos and order the stars which seemingly emerge from night simply to gravitate round them.

In such a way, during three thousand years, Egyptian art translated the temporal into the eternal.

Let there be no misapprehension about this today: it is not as a witness to the past that it moves us, nor as what used to be called beauty. "Beauty" has become one of our age's most potent mysteries, the inexplicable quality which brings the Egyptian masterpieces into communion with the statues of our own cathedrals, or the Aztec temples, or the Indian and Chinese grottoes; with the paintings of Cézanne and Van Gogh, with the greatest dead and the greatest living artists; with, in short, the whole treasury of the first world civilization.

This is an immense regeneration, of which our own Renaissance will soon seem a diffident prefiguring. For the first time, men have discovered a universal language of art. We feel its influence acutely, even if we only partly understand its nature. This tremendous storehouse of art, of which we are now becoming conscious, draws its force no doubt from its being the most signal victory of human effort over death. [...]

The emotion we share with the creators of these granite statues is not even one of love, nor a common feeling for death nor even, perhaps, a similar way of looking at their work; yet before their work, the accents of anonymous sculptors forgotten during two thousand years seem to us as much untouched by the succession of empires as the accents of mother love. [...]

One could not too highly praise your [Mr. Director-General of UNESCO] having conceived a plan so magnificent and so precise in its boldness one might say, a kind of Tennessee Valley Authority of archaeology. [...]

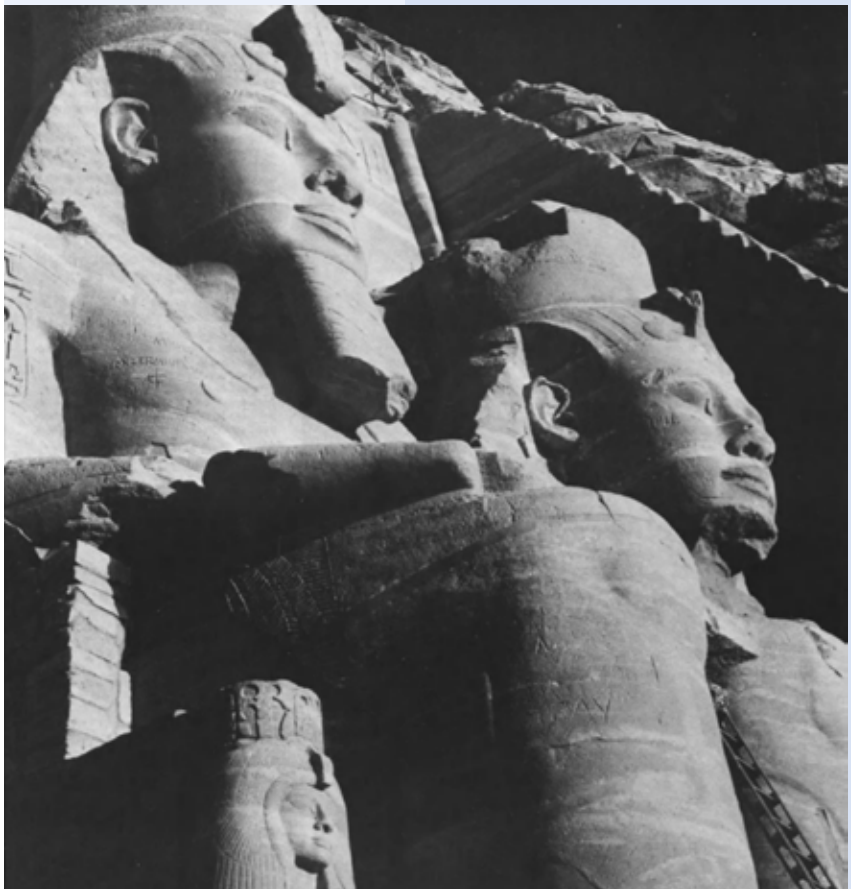
Your appeal is historic, not because it proposes to save the temples of Nubia, but because through it the first world civilization publicly proclaims the world's art as its indivisible heritage. In days when the West believed its cultural heritage had its source in Athens, it could nonetheless look on with equanimity while the Acropolis crumbled away.

The slow flood of the Nile has reflected the melancholy caravans of the Bible, the armies of Cambyses and Alexander, the knights of Byzantium and Islam, the soldiers of Napoleon. No doubt when the sand-storm blows across it, its ancient memory no longer distinguishes the brilliant notes of Rameses's triumph from the pathetic dust that settles again in the wake of defeated armies. And when the sand is scattered again, the Nile is once more alone with its sculpted mountains, its colossal effigies whose motionless reflection has for so long been part of its echo of eternity.

But see, old river, whose floods allowed astrologers to fix the most ancient date in history, men are coming now, from all parts of the world, who will carry these giants far away from your life-giving, destructive waters. Let the night fall, and you will reflect again the stars under which Isis accomplished her funeral rites, the star of Rameses. But the humblest worker come to rescue the statues of Isis and Rameses will tell you something you have always known but never heard from men before: that there is only one action over which indifferent stars and unchanging, murmurous rivers have no sway: it is the action of a man who snatches something from death.

André Malraux

Photo from the pages of the Courier, *February-March 1980: "Victory in Nubia: the greatest archaeological rescue operation of all time".*



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Reconstruction and Recovery

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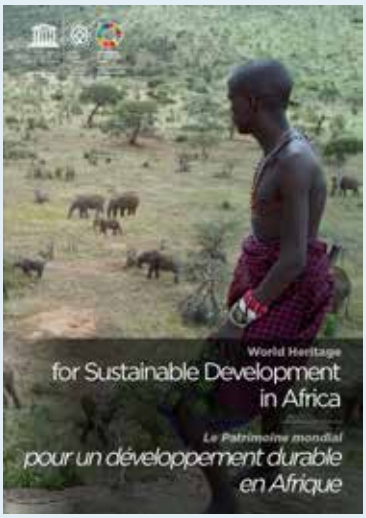
Cultural heritage sites face an unprecedented escalation of damage and destruction today. The rebuilding of these sites could play an essential role in reinforcing the identity of populations.

This issue examines the restoration of some of the world's most significant sites. It explores the lessons learned from the reconstruction of mosques in Timbuktu (Mali) and the Mostar Bridge (Bosnia and Herzegovina). It also discusses the issues raised by the potential rebuilding of devastated sites in Syria and Afghanistan in the future.



World Heritage for Sustainable Development in Africa

Le Patrimoine mondial pour un développement durable en Afrique

ISBN 978-92-3-000045-5, 282 pp., 21 x 29.7 cm, paperback, PDF

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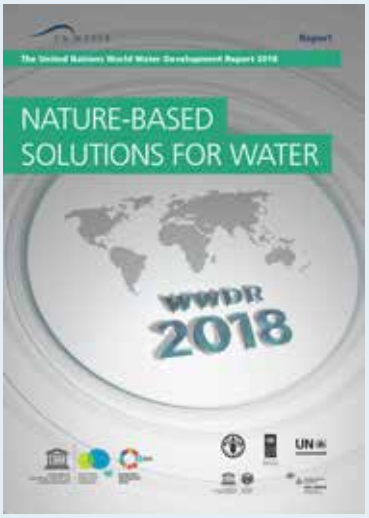
Infrastructure development and the changes occurring in Sub-Saharan Africa are having an impact on the region's World Heritage.

Through a series of case studies from the region and other parts of the world, this publication analyses the dynamics of the current change from a World Heritage perspective. It also makes proposals for leveraging African World Heritage in sustainable development.



Nature-Based Solutions for Water

United Nations World Water Development Report 2018

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The 2018 edition of the World Water Development Report (WWDR) aims to inform policymakers of the potential of nature-based solutions (NBS). These nature-based solutions are an essential tool to address water management challenges in all sectors – particularly agriculture, sustainable cities, disaster risk reduction and the improvement of water quality.

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