THE UNESCO
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Archaeology: the living past

• **Mexico:** Teotihuacan's secrets revealed by laser technology

• **AlUla**, the pearl of the Saudi desert

• **China:** Archaeological discovery of the Hongshan culture jade dragons

• Moustapha Sall, a pioneer of archaeology in **Senegal**

OUR GUEST

Samir Sayegh, Lebanese calligrapher "Calligraphy is the art of abstraction par excellence"

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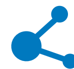

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THE UNESCO Courier

Editorial

To those who still view archaeology as a musty and outdated science, recent events have brought a sharp rebuttal. Major discoveries have occurred at such a rapid pace that many are now talking about a new golden age for this discipline.

In February 2025, the discovery of the tomb of Thutmose II, ancestor of Tutankhamun, near the Valley of the Kings in Luxor was hailed as a remarkable find by the Egyptian Ministry of Antiquities.

In 2024, a huge Mayan city was detected in the jungle in Campeche state, southeastern Mexico. In Petra, Jordan, a burial chamber unknown until last year is yielding valuable information about the Nabataean civilization.

These discoveries owe much to the use of new technologies such as lidar, a laser remote sensing technique that can detect structures beneath layers of vegetation. It is proving particularly valuable for exploring the dense jungles of Central America. Artificial intelligence is also enabling unprecedented breakthroughs: in 2024, it helped decipher a 2,000-year-old parchment burned during the eruption of Vesuvius that engulfed the ancient Roman city of Pompeii.

These advances, often the result of international cooperation, go far beyond scientific progress. Understanding the ingenuity of ancient civilizations also means recognizing the diversity of human expression and the importance of preserving sites for future generations, because the discovery of these fragile treasures includes the duty to protect and pass on this priceless heritage. That is why many of these sites are already included on the UNESCO World Heritage List.

These new discoveries also provide a better empirical understanding of the past, challenging certain established certainties, notably concerning the role of agriculture in the emergence of unequal societies and the place of women. They enrich our collective memory and question our origins. This revival is a powerful lever for reconnecting modern societies to their roots and cultivating the best of our common humanity.

Agnès Bardon
Editor-in-Chief

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Michael Marshall

Science journalist in Devon (United Kingdom) and author of The Genesis Quest *(2020)*

Archaeology: the living past

Scientific progress relies on discoveries and new perspectives that continuously challenge established certainties. Archaeology is no exception. Long-held notions – such as the perceived lack of intelligence among hunter-gatherers or the causal link between agriculture and centralized power – are now being re-examined.

In the middle of Estero Bay on the west coast of Florida (United States), there is a city made of mollusc shells. Mound Key was constructed about 2,000 years ago, though its roots may go back centuries earlier. The builders were the Calusa, a Native American society that was destroyed by European colonizers – though some of their descendants survive today among Florida's Seminole people.

The city is essentially two huge mounds, measuring just over half a square kilometre and bisected by a canal. The Calusa must have gathered mollusc shells in vast numbers and deposited them in a highly organized way to create this artificial island far out in the bay. From this base, the Calusa controlled much of what is now Florida.

Yet Mound Key does not match our familiar image of a city, in one crucial respect: it was not supplied with food by farms. The Calusa hunted, gathered and fished, but they grew only a small number of crops, such as chilli peppers, in small gardens.

Tales and prejudice

Challenging long-held assumptions, the city built by the Calusa shows that people can live together in large numbers and build huge structures – in this case, an artificial island – without large-scale farming. The Mound Key case is just one example of how archaeology requires us to reconsider cherished assumptions about our history, and about who we are. For archaeology is not only a science, but more so than any other it is also a profoundly human endeavour, and cannot help but be influenced by our preconceived notions, narratives and prejudices.

In the 1800s, historians and archaeologists viewed human history as a linear progress from barbarism to civilization. Anything that was seen as disrupting that progression, such as the fall of the Western Roman Empire, was interpreted as a tragedy. These ideas offered intellectual cover for the colonial period and the rapacious destruction of Indigenous societies in the Americas and Global South.

From the 20th century onwards, archaeologists have critiqued and deconstructed these ideas. The idea that hunter-gatherers are brutish and unsophisticated has been entirely rejected. But the challenge is to find new narratives to replace the old ones.

"The worst mistake of the human race"

Agriculture's role in societal evolution is the clearest example of how archaeology's advancements are rewriting historical narratives. While people had been growing food plants for thousands of years, it was only around 10,000 years ago that some societies came to rely almost entirely on farming for their food – most famously, in the Fertile Crescent in Mesopotamia. In the 19th century this was seen as glorious progress. Later, some contemporary archaeologists have reinterpreted it as a disaster.

In a much-cited 1996 article, Jared Diamond, professor of geography at the University of California, Los Angeles (UCLA), author of *Guns, Germs and Steel*, called agriculture "The worst mistake in the history of the human race". Based on data from the analysis of skeletons found →

Mesa Verde National Park, located in southwestern Colorado (United States), was inscribed on the World Heritage List in 1978. Perched at an altitude of 2,600 metres, this site hosts the ancestral Pueblo people's dwellings, which were carved into the cliff face between the 6th and 12th centuries.

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Prehistoric remains in Tassili n'Ajjer in southwestern Algeria. This huge plateau, inscribed as UNESCO World Heritage since 1982, hosts rock carvings chronicling nearly 10,000 years of history.

in Turkey and Greece dating back to the Ice Age, he argues that early farmers had worse health than neighbouring hunter-gatherers: their diet was less diverse, they were shorter, and they did not live as long.

What's more, farming would have transformed societies in a devastating way. It would have led to centralized control – whoever controls the grain supply controls everyone else. On this view, farming was a sort of trap that led inexorably to authoritarian rulers, huge inequities, and ultimately empires and mechanized war.

The thing is, archaeology doesn't support Diamond's narrative any more than it supports simplistic notions of progress. The claim of poorer health among early farmers than among their hunter-gatherer contemporaries does not stand up to scrutiny: some farming communities, such as the Çatalhöyük (Turkiye), were in fact healthy for a long time. Thus, it is not possible to establish a universal rule based on the health factor between these two types of societies.

> **"Archaeology is not only a science, but also an endeavour influenced by our preconceived notions**

What's more, there are examples of societies around the world that tried farming for hundreds of years and then abandoned it. The builders of Stonehenge in the UK were hunter-gatherers whose ancestors quit farming.

At the same time, people sometimes build hierarchical societies only to quickly dismantle them when they don't work out. In south-west Colorado, Native Americans called the Ancestral Puebloans created a hierarchical and centralized society, built around dwellings carved into cliffsides, then abandoned it when their leaders failed to maintain food supplies during droughts. If farming is a trap, it's a trap that many societies walked out of.

Big data

To resolve debates like this, archaeologists are now trying to harness ever larger datasets. While individual human societies all follow idiosyncratic paths, maybe if we look at enough data we will find some patterns: meta-narratives that explain the overall sweep of our history.

"We have more and more data at our disposal. In fact, a big part of archaeology relies increasingly on computers," says Timothy Kohler, professor emeritus in Anthropology at Washington State University in Pullman (United States).

He is involved in the Global Dynamics of Inequality (GINI) Project: an attempt to systematically track inequality in different societies across history and prehistory. Most forms of inequality are not preserved in the archaeological record, but one that is readily available is housing. In a given society, were most houses roughly the same size, or were some drastically larger than others?

The researchers find no evidence of increasing housing inequality in the millennium immediately after plants were first domesticated. Instead, other factors drove inequality. In particular, for a farm to provide enough food it needs a certain amount of land, and as populations grew the agricultural area expanded – until there was virtually nowhere else to go. If and when land became the main limit on agricultural production, it seems, societal inequalities emerged, favouring those who controlled the most land.

Studies of ancient DNA have been equally transformative, says Mattia Cartolano, Research fellow at the department of classical philology at the University of Bologna in Italy. Large-scale DNA analyses have shown that, during the onset of farming, "interpersonal relationships within sites were far more diverse than previously assumed," he says. "This has led us to reconsider the social dynamics at play during the origins of farming."

> **"A big part of archaeology relies increasingly on computers**

Another such project using huge datasets is Seshat (Global History Databank). This international non-profit scientific project founded in 2011 operates a huge database of information about societies from the last 10,000 years. In 2022, the Seshat team explored why societies "complexify": that is, why they develop cities, hierarchies, writing and organized religion. They found that the most consistent driver of complexification was war: specifically, the spread of cavalry warfare and iron metallurgy. Societies faced with hostile neighbours either became more centralized in order to field an army of their own, or were conquered.

It's a neat story – and like all neat stories it may not turn out to be altogether true. Seshat's methods and findings are being dissected, and it's too early to say how the discussion will be resolved. And it's not just about a quarrel between experts. These studies could not only give us a better understanding of the past, but also provide insight into some of the issues facing societies today, such as equality, the legitimacy of hierarchies and the response to climate change.

The archaeological World Heritage sites

A number of archaeological sites are on the UNESCO World Heritage List, from the Great Wall of China to Stonehenge in the United Kingdom, Machu Picchu in Peru, Petra in Jordan, Aksum in Ethiopia, and the Colosseum in Italy – to name but a few.

The safeguarding, enhancement, and conservation of cultural heritage is one of the central pillars of UNESCO's work in the field of culture. States Parties can request international assistance for the conservation, management, and emergency response of World Heritage sites. In this framework, UNESCO coordinates support to archaeological sites around the globe in areas such as the identification of sites to be rehabilitated or protected, support in research, evaluation and management and the provision of training. Disaster risk reduction, geological investigation, and the digitization of archaeological sites are some of the fields covered.

The most impressive historical example to date of a UNESCO-coordinated archaeological rescue operation is the International Campaign to Save the Monuments of Nubia (1960-1980). This campaign led to the relocation of over twenty architectural complexes and temples and massive archaeological excavation in Egypt and Sudan. It also inspired the creation of the 1972 UNESCO World Heritage Convention.

Interview by
Laetitia Kaci

UNESCO

David Wengrow:
"We need to dismantle the myths surrounding the origins of our social order"

According to the long-prevailing view, human societies were initially organized as groups of egalitarian hunter-gatherers living in harmony with nature. The domestication of livestock and the development of agriculture – and the consequent accumulation of wealth – then led to the emergence of complex, hierarchical societies. David Wengrow, a professor of comparative archaeology at University College London, challenges this idea of the natural evolution of societies. His book *The Dawn of Everything*, co-written with anthropologist David Graeber, has become a best-seller.

In your book* The Dawn of Everything*, you and anthropologist David Graeber challenge the idea that agriculture and hierarchy are linked. On what grounds?

The concept that agriculture gives rise to private property and organized government is a central pillar of European Enlightenment thought. It was, at the same time, a legal instrument used to justify Europe's appropriation of land and resources from peoples the world over, whose own systems of ownership were grounded in other forms of physical and intellectual property. In finally beginning to question this approach, archaeologists are actually rather late to the game.

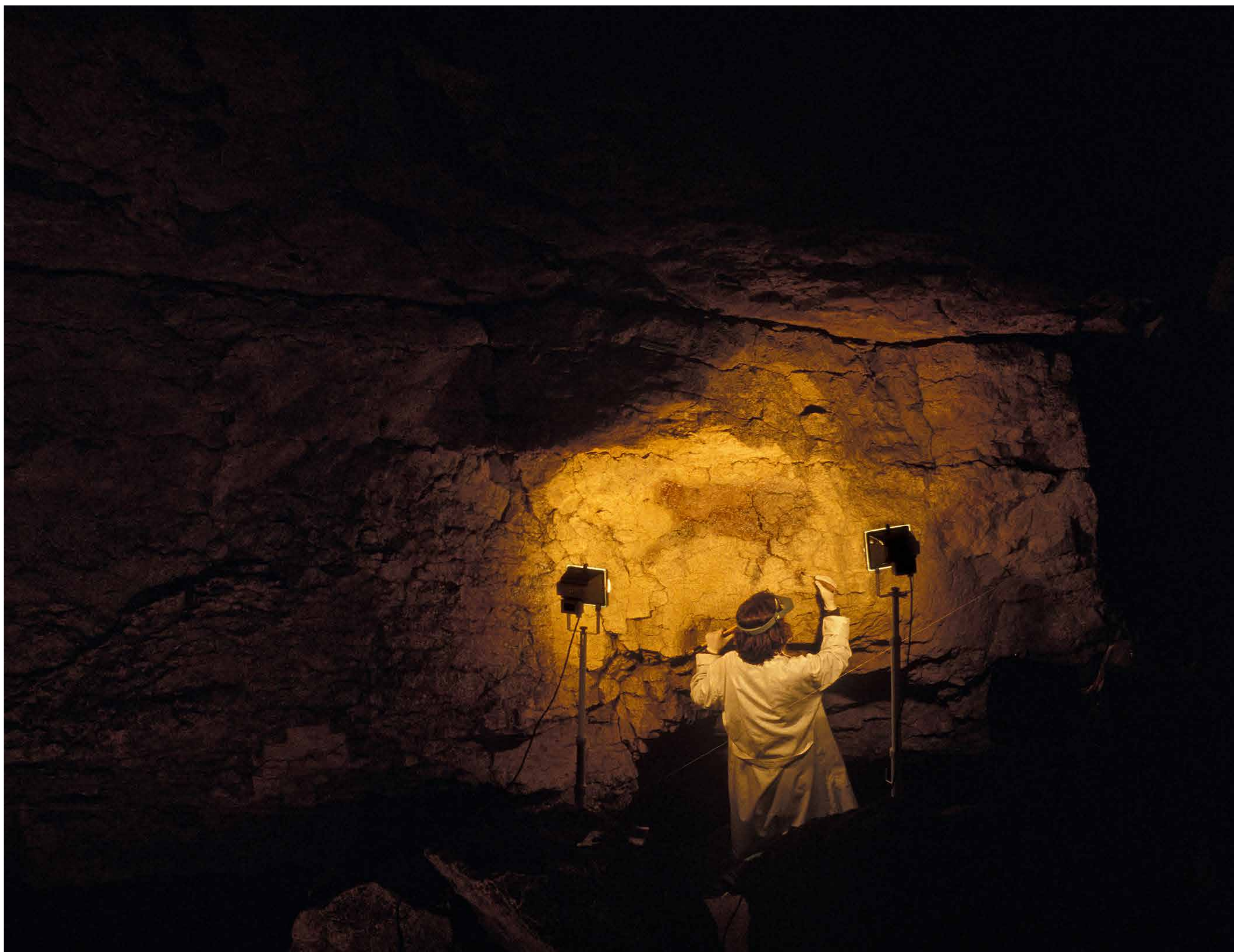
Why has this narrative been so persistent?

The narrative that systems of property and social complexity originate in agricultural practices is persistent because it is foundational to our modern mythologies about the character of human civilization and progress. Such myths are woven into the European systems of political thought and legal codes. They are common to Enlightenment thinkers such as John Locke, Jean-Jacques Rousseau, and Adam Smith whose writings form the basis of modern social science – including fields such as economics and political philosophy. To undo such deeply rooted notions is therefore to confront the sheer magnitude of those violations and the challenge of compensation.

> "For some decades now archaeology has provided a basis for a more empirically grounded understanding of the human past

Recent archaeological discoveries suggest that past societies were far more diverse than we once thought. How do they change our understanding of human history?

For some decades now archaeology has provided a basis for a more empirically grounded understanding of the human past and — unsurprisingly — it looks nothing like the speculations of Enlightenment philosophers hundreds of years ago. We see, for example, abundant evidence for systems of social inequality and political rank in hunter-gatherer societies, long before the origins of agriculture.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Restoration of rock paintings in the El Pendo cave (Spain) in 2011. This is one of 17 decorated caves that were inscribed on the UNESCO World Heritage List in 1985 and 2008.

Some of these are rooted in very deep prehistory, like the Jomon culture of Japan; others in ethno-historical records of non-farming societies – such as the Calusa of Florida or the societies of the Pacific Northwest Coast – who did not practice farming but lived in class-based societies, divided into strata of nobles, commoners, and slaves.

We also find forager societies that consciously rejected such extreme forms of inequality, and others that are strikingly egalitarian, or which moved between egalitarian and hierarchical systems on a seasonal basis.

Recent archaeological discoveries show also that the beginnings of agriculture were not "revolutionary" in character, but a very slow process taking thousands of years on all the continents of the world, and its results were decidedly mixed. In some cases, such as the Middle East and central Europe, the earliest farming villages and towns seem clearly more egalitarian than their hunter-gatherer neighbours.

> **"We find forager societies that moved between egalitarian and hierarchical systems on a seasonal basis**

What role does archaeology play today in shaping public debates and how we think about our future?

Archaeology is implicated in the future of the world at a variety of different levels — it's embroiled in complex ways with the history and politics of territorial conflicts, the illicit trade in cultural artefacts, and commercial tourism, but also in projects of environmental conservation, heritage revitalisation, and social justice.

Often these forces are in deep tension with each other, at the local and global levels. Since the publication of *The Dawn of Everything*, and its translation into multiple languages, I have also become more aware of enormous public interest in the findings of archaeology across the world. Critical and scientific enquiry into the human past can provide a shared language across borders, and helps to unravel persistent myths about the origins of our present world order. ■

Anuliina Savolainen
UNESCO

AlUla, the pearl of the Saudi desert

The AlUla oasis in Saudi Arabia's desert heart has long been a well-guarded archaeological secret. Today, layer by layer, the millennia-old history of this ancient crossroads of cultures – a strategic stop on the Incense Route that linked the Arabian Peninsula to the great civilizations of East and West – is being unveiled.

There are so many possible beginnings to AlUla's story. They lie buried under silent sands and carved into the red sandstone and basalt walls of this oasis situated in Medina Province in the north-west of Saudi Arabia. As the experts traverse the scorching sand, they scan every inch. "This is a fragment of ancient pottery," they might observe, "and this feels like bronze." Among these professionals is cultural heritage conservation manager Rut Ballesteros, who carefully examines the walls. Her main mission: a condition assessment of the Nabataean tombs in Hegra, a UNESCO World Heritage site located in AlUla, Saudi Arabia.

> "AlUla is home to thousands of archaeological features

The 111 tombs are carved directly into the rocks that emerge from the desert floor. From their facades, archaeologists can read the passing of distinct cultural periods: the Humbaba figure points to Mesopotamia, while Egyptian gods appear alongside Greco-Roman Medusa representations. Many of the tombs bear ancient texts, indicating their mighty owner, or casting protective spells against those who might approach with malicious intentions.

A tour guide presents a votive statue found during archaeological excavations in Dadan.

Hegra started building its wealth some 2,000 years ago on caravans that stopped to fill up their supplies in water, dates, and other vital goods from the fertile oasis. The AlUla valley had become a strategic stop on the Incense trade route connecting the Arabian Peninsula to the great civilizations of the East and West. In the 1st century CE this settlement developed into the southernmost capital of the Nabataean people – the same civilization whose legacy makes Petra, in Jordan, a major tourist destination. But unlike Petra, Hegra, which has only truly been accessible for a few years, has remained largely untouched.

The big shift

In 2016, the Saudi government announced an ambitious vision to diversify the economy and create a vibrant environment for investors. In the region, the Royal Commission for AlUla (RCU) was established to protect, safeguard and highlight its heritage. National and international experts – including archaeologists, conservation experts, architects, and cultural historians – have since been invited in vast numbers to accompany AlUla's transformation into a cultural oasis.

The vision of a thriving business and development oasis has already become reality on the huge roadside billboards that hide construction sites alongside the streets of AlUla. In view of hosting one million tourists per year by 2030, eight big hotels and a variety of small accommodations have been built or are under construction since 2018, and another terminal is planned for the AlUla airport.

A gold mine for archaeologists

Meanwhile, the great digging continues. Rut Ballesteros, who arrived in AlUla in →

© Royal Commission of AlUla

◥ *The unfinished Tomb of Lihyan in Hegra, dating from the Nabataean period (1st century CE), is carved into a single rock and stands 22 meters high.*

2019, recounts spending the first months driving in awe across the desert region centered on a lush oasis – where tens of thousands of archaeological features have now been identified.

In Hegra, the conservation specialist observes the rocks. "See those white marks? That is salt," she explains, pointing at a line on a spindle of rock supporting a funerary chamber. "The main erosion problem here comes from the bottom. As humidity rises, the salt resolves and moves around and then crystallizes again. So, the stone breaks." She explains that consolidating the bottom is essential not to lose the whole facade.

A 2,000-year-old silk fragment from a tomb in Hegra.

© UNESCO / Anuliina Savolainen

Different techniques can help prevent the structures from collapsing. But in May, operations are on hold because it's simply too hot to operate.

The bone puzzle

At the RCU's office labs in AlUla city centre, hundreds of boxes containing discoveries from various missions are waiting to be processed.

Care and conservation manager Giulia Edmond opens a little box with gentle hands. Inside lies a 2,000-year-old piece of silk from a Hegra tomb. "This one is of particular interest: it's the only silk fragment in our collection," she says. Its origins are still under study – India, China perhaps? Meanwhile, in another room, a team of forensic anthropologists is meticulously identifying and cataloging over a hundred human bones from Hegra.

"I have never seen such a concentration of archaeological missions and heritage projects in one place," says Wissam Khalil, senior manager of archaeological excavation at the RCU. Since 2017, dozens of missions have been conducted by specialists from over 20 countries, most of them co-directed by leading Saudi heritage professionals.

Until now, the region's human history has been traced back to the Lower-Middle Paleolithic period. In 2023, researchers discovered here the largest stone axe ever found in the world, with an estimated age of 200,000 years. Archaeologists have also managed to uncover the interiors of some of the *mustatils* – big rectangular stone structures built for ritual purposes, some of them dating back about 7,000 years. These and other discoveries hint that the region could have been as lush and agriculturally developed as the Fertile Crescent in Mesopotamia, during the same historical period – a finding that could reshape perspectives on ancient Middle East history.

> **"Since 2017, dozens of missions have been conducted by specialists from over 20 countries**

The walls are speaking

One of the most remarkable features in the region is the concentration of inscriptions, from prehistoric rock art to petroglyphs to letters engraved on the mountain walls. "You can see a wall with inscriptions spanning five millennia of history," Wissam Khalil says. "Sometimes they mark the passing of kings or other personalities, sometimes laws, but then sometimes you just have a thought, or a feeling, from 2,000 years ago."

The Jabal Ikmah site, listed on UNESCO's Memory of the World International Register in 2023, is situated north of the AlUla city center. Until recently little known by anyone except local people for whom it was a popular picnic spot, it is like an open-air library. The walls of this rocky canyon hold approximately 300 engravings, mostly from the second half of the first millennium BCE.

© UNESCO / Anuliina Savolainen

A team of forensic anthropologists studies human bones from Hegra.

© UNESCO / Jonathan Rashad

Jabal Ikmah, often referred to as an "open-air library", is featured on UNESCO's Memory of the World Register. It contains about 300 carvings, dating mainly from the first millennium BCE.

To an untrained eye, the inscriptions offer a tapestry of mysterious, variably shaped scripts. But professor Solaiman Abdulrahman al-Theeb, a historian specializing in ancient languages, can decrypt most of them. Some are written in Aramaic, Safaitic, Minaic, and Nabataean – all of which influenced the development of Arabic. But in Jabal Ikmah, the majority are in Dadanitic, the language of the long-forgotten kingdoms of Dadan and Lihyan that flourished in the area somewhere between 800 and 100 BCE. Deciphering these inscriptions helps to uncover the secrets of these powerful local civilizations that thrived here, both before and — according to recent discoveries — concurrently with the Nabataeans.

Dadan, a flourishing city

Al-Theeb teaches Dadanitic and Lihyanite in AlUla's Language Institute, inaugurated in 2021. The professor emphasizes that while English, Chinese or Spanish will be useful to guide the tourists of tomorrow, learning ancient languages is one of the keys to understanding and learning lessons from history. "Local people are used to seeing such inscriptions everywhere. Now they want to understand what they mean."

> **"In the region, one might come across a 2,000-year-old thought, carved into the mountain wall**

The inscriptions tell a story of remarkable cultural exchange. "They show that the Aramaic, a language then unique to Syria, was used in Dadan. We even have them in Greek, Latin, Egyptian, Assyrian, and Hebrew." Al-Theeb describes Dadan as an astoundingly stable, multicultural, and open society with a thriving economy along the incense trade routes. "Here you could worship any god, as long as you respected the others."

The importance given to the afterlife is also striking on the archaeological site of Dadan, where lion-guarded square holes on the mountain face served as tombs, with the removed stone ingeniously repurposed for the nearby city settlement. This site is currently hosting important archaeological excavations.

New beginnings

"In the name of God, I Zuhair wrote the date of death of Omar the year four and twenty." The oldest dated Islamic Arabic

© Royal Commission of AlUla

Interior view of a tomb in Hegra.

inscription, from 644 CE, offers a glimpse into another chapter of AlUla's story: the advent of Islam. The location became a stop along a newly formed pilgrimage route from Damascus to Mecca. By the 12th century CE, a new city was thriving in the valley: the Old Town of AlUla.

> Since the launch of the country's tourism sector in 2019, the numbers of visitors have been on a steady rise

Today electric buses instead of camels take visitors to the recently restored pedestrian street with cafés and handicraft stores above the mud brick maze of the Old Town. Just like in the past, services, and refreshments, including the famous AlUla dates, are offered to those traveling from afar.

In this new beginning of the AlUla saga, preserving its remarkable heritage while balancing ambitions of growth and increased visitors with sustainable resource management is key. Since the launch of the country's tourism sector in 2019, the numbers of visitors have been on a steady rise, with 286,000 arrivals in AlUla in 2024. International exhibitions, such as the one on "AlUla, Wonder of Arabia" held in Paris (2019) and Beijing (2024) have also led to peaks in visitor numbers.

Development and heritage

"Before, we were just a small community in a small city!" exclaims Laila Albalawi, a former teacher of Islamic history who today works as the operational planning lead at the RCU. "I believe everybody in AlUla will benefit from the change."

A strong heritage impact assessment process — the first one in Saudi Arabia — has been implemented in AlUla to mitigate any negative effects of rapid development on the excavated and yet-to-be-unearthed sites. Via a five-year agreement signed in July 2021, UNESCO also has a role to play in safeguarding living heritage and strengthening cross-cultural skills across the heritage sites.

"Guaranteeing heritage conservation has to happen from a perspective of responsibility toward local communities' economic and social future," says José Ignacio Gallego Revilla, advisor for UNESCO and cultural and scientific diplomacy programs at the RCU. "We should never lose the perspective of what really matters: the heritage values, the human values that lay behind, as well as interculturalism and knowledge sharing. They are the ones that make the difference." ■

Liu Guoxiang

Deputy Director of the Chinese Academy of History and Director of the Chinese Archaeological Museum, where he is also a Research Fellow. Dr. Liu specializes in Neolithic cultures in northeast China and the history of ancient Chinese jade.

Archaeological discovery of the Hongshan culture jade dragons

In 2024, archaeologists unearthed some of the most important vestiges of ancient settlements in Chifeng, in the Inner Mongolia Autonomous Region of China. To date, over 700 sites of Hongshan culture have been found. The archaeological discoveries unveil the narrative of a vibrant Neolithic culture rooted in the worship of ancestors, heaven, and earth.

In the sweltering heat of mid-July 2024, the efforts of archaeologists excavating the stone mound tombs at the Yuanbaoshan site in Aohan Banner, Chifeng City, Inner Mongolia Autonomous Region, finally paid off. After removing the top stone slabs and internal fill from one of the tombs on the southern side of the mound, a set of jade artefacts came into view, including a jade coiled dragon, a hoof-shaped jade, and a headdress-shaped ornament.

When the archaeologists unearthed the dragon, a deep sense of history rushed forth – like shaking hands across 5,000 years with a solemn leader from the Hongshan culture.

The Hongshan culture was named after the excavation of the site at Hongshanhou in Chifeng City, Inner Mongolia Autonomous Region. It was a Neolithic culture based mainly on agriculture that dates back approximately 6,500 to 5,000 years. To date, over 700 Hongshan sites have been found in Chifeng.

Prayers for rain

Jade dragons are iconic of the Hongshan culture and symbolize the formation of over 5,000 years of Chinese civilization – the dragon is a totem of the Chinese nation and, according to legend, possesses divine power to summon rain. The area of Hongshan culture is primarily mountainous and hilly, with drought being a major obstacle to agriculture. The appearance of jade dragons is closely related to rituals for praying for rain and bountiful harvests.

The dragon discovered in the Yuanbaoshan tomb is carved from tremolite jade. It features an elegant design: the head and tail form a continuous curve; the head is large, the ears rise in rounded arcs, and the eyes bulge prominently. Measuring 15.8 centimetres high and 9.9 centimetres wide, it is the largest and best-preserved example of its kind ever unearthed. Similar jade coiled dragons, treasured as Hongshan masterpieces, are held in the Musée Guimet in France and the British Museum in the United Kingdom. These examples date to late Hongshan culture, about 5,500–5,000 years ago.

The C-shaped jade dragon is another classic artefact of Hongshan culture. Two such artefacts presenting soaring, curved-shape dragons with raised, hook-like horns were found by local farmers as they ploughed their fields: a yellow jade dragon was discovered at the Dongguaibangou site, Ongniud Banner, Chifeng, in 1949, and a jasper dragon at the Saqintala site in the same area in 1971. Today, these artefacts hold a central place in the Wengniuteqi Museum and the National Museum of China.

Since June 2024, more than 100 jade artefacts have been unearthed from the Yuanbaoshan mound tombs, showcasing refined craftsmanship and a well-developed ritual system. The jade is primarily tremolite from Xiuyan in Liaoning Province. The material is smooth and lustrous, and its colors appear in yellow-white, yellow-green, green and dark green.

Sacrificial pits

In summer of 2021, heavy rain fell over the Ma'anqiaoshan site in Jianping, Liaoning Province. After the clouds cleared, archaeologists noticed patches of dark soil in the excavation area. The team understood that a large number of remains from the daily life and production activities of the ancestors of

the Hongshan culture were buried here. Over six months of systematic excavation around this area, they uncovered a large sacrificial area containing 42 ritual pits. The pits yielded an abundance of artefacts – painted pottery jars, stone shovels, grinding stones and hand stones.

> "When the archaeologists unearthed the dragon, they were shaking hands across 5,000 years with a solemn leader from the Hongshan culture

© The Chinese Archaeological Museum

This jade dragon, merging a pig's head with the coiled body of a dragon, was discovered in a tomb at the Yuanbaoshan site in northeastern China. It represents an iconic artefact of the Hongshan culture, which thrived around 6,500–5,000 years ago.

The Ma'anqiaoshan site is a large settlement of the early to middle Hongshan culture, dating to approximately 6,400 to 6,000 years ago. The sacrificial area was carefully planned and constructed in two phases: three terraced levels were first created on the east, west, and north slopes of a small northern hill to form the sacrificial platform, and then, a separate ritual space was formed in the southern part by laying new soil. This marks the first discovery of a distinct, large-scale sacrificial area within a settlement of Hongshan culture.

The goddess' head

Discovered in the early 1980s, the Niuheliang site, which spans 50 square kilometers in Chaoyang, Liaoning Province, served as the largest burial and ritual center in the late Hongshan period. The temple yielded a life-sized sculpture of a goddess's head. Renowned Chinese archaeologist Su Bingqi called her the "female ancestor of the Hongshan people – and the common ancestor of the Chinese nation". In May 2012, a full-body clay statue was excavated at the Xinglonggou site in Aohan, further affirming ancestral worship traditions in Hongshan culture.

> "Since June 2024, more than 100 jade artefacts have been unearthed from the Yuanbaoshan mound tombs

Evidence indicates that worship of ancestors, heaven and earth, and Chinese dragon totems is the spiritual core of the formation of Hongshan civilization. The living honoured the dead to seek ancestral protection, fertility, and agricultural abundance.

The archaeological finds also reveal that throughout its development, the Hongshan culture maintained close ties with neighbouring Neolithic cultures: the Yangshao culture (7,000-5,000 years ago) of the Central Plains, the Lingjiatan culture (5,800-5,300 years ago) of the Yangtze-Huai River area, and the Liangzhu culture (5,300-4,300 years ago) of the Lower Yangtze River. As an example, the vibrant painted pottery of the Yangshao culture spread northward to Hongshan culture, while the imagery of Hongshan jade figurines and coiled dragons influenced both Lingjiatan and Liangzhu cultures. Through these early interactions, integration, and exchanges, the Chinese pluralistic unity emerged in prehistoric China – laying a solid foundation for over 5,000 years of Chinese civilization. ■

A clay statue unearthed at the Xinglonggou site in Aohan in 2012. Its discovery confirmed the presence of ancestral worship traditions in the Hongshan culture.

© The Chinese Archaeological Museum

Jørgen Hollesen

Senior researcher, National Museum of Denmark

The impact of climate change on archaeological sites

Thawing permafrost, coastal erosion, flooding, and droughts are some of the phenomena that threaten potentially millions of ancient sites around the world. Integrating archaeology into global climate policy is crucial for the preservation of the world's archaeological heritage.

In the Arctic, where snow covers the ground for much of the year, permafrost has long preserved the region's archaeological record. Acting as a natural deep freeze, it has kept bones, wooden artefacts, and even traces of human skin and hair in extraordinary condition – sometimes for millennia. But now, the permafrost is thawing, and with it, the stories it once held are melting away.

In South Greenland, the very region where Erik the Red, the Norwegian explorer who founded the island's first European settlement in the 10th century, famously settled, archaeologists are already facing the consequences of rising ground temperatures. The recovery of well-preserved organic materials at sites from the Norse settlers is becoming increasingly rare – and what is exhumed is often in a state of advanced or complete degradation.

Climate change is accelerating the loss of archaeological sites and buried remains worldwide. While sea levels have naturally fluctuated over time, human-induced climate change is causing an acceleration in coastal erosion due to rising sea levels and an increase in the number of storms. This poses a serious threat not only to coastal communities but also to countless archaeological sites.

Coastal erosion can indeed lead to the gradual disappearance of sites over several decades or cause their destruction in a single event. In 2005, for example, a large part of a prehistoric settlement on Baile Sear in the Outer Hebrides of Scotland was destroyed when the sandy coastline retreated by up to 50 metres overnight – causing structural collapse, exposing archaeological deposits, and scattering cultural material along the beach.

> **"Coastal erosion poses a serious threat to countless archaeological sites**

Droughts and wildfires

Sometimes the primary threat is not the excess of water but its absence. In the wetlands of northern Europe, longer and more extreme droughts lead to lower water tables and the drying out of saturated soils, exposing organic materials to oxygen and speeding up microbial decay.

At the wetland Stone Age site of Ageröd in Sweden, decades of drainage and climate-related drying have already degraded the site's preservation conditions. The lack of water also increases the frequency and intensity of wildfires, posing a serious threat to heritage sites. The devastating fires that ravaged Greece in the summer of 2007 had a very serious impact on the site of Olympia, threatening to destroy the museum and archaeological area of this World Heritage site.

These are just a few examples of how climate change is impacting archaeology – many more exist, with both immediate and long-term consequences. The scale is staggering. In the Arctic alone, where warming is occurring twice as fast as the global average, over 180,000 archaeological sites are registered. We are confronting a scenario in which entire landscapes are subject to system-wide environmental processes, placing thousands of sites at risk simultaneously.

Ropes, tools and animal remains

Paradoxically, as ice melts, forests burn and coastlines erode, new archaeological sites and materials are being uncovered. Climate change is revealing the past even as it destroys it. In the high mountain zones of western Mongolia, such as Tsengel Khairkhan, retreating glaciers

have exposed ancient hunting sites — frozen for millennia — revealing relics such as ropes, animal remains, and tools used in high-altitude hunting. In Wyoming (United States), wildfires are estimated to have uncovered hundreds of previously undocumented sites.

> “Paradoxically, climate change reveals new archaeological sites and materials

While such discoveries provide rare insights into past ways of life, the window for recovery is brief. Once exposed, artefacts are often fragile and prone to rapid degradation unless quickly stabilized and preserved.

Yet heritage management systems are rarely designed for speed. In the context of climate change, where natural processes drive destruction rather than construction, no dedicated funding streams or mitigation programs currently exist.

Traditional policies have emphasized *in situ* preservation. But today, it is fair to question whether existing management frameworks are equipped to meet the scale and urgency of this crisis. We must ask: What information do we need to gather from these threatened sites before it's too late? What actions are required to recover them? And how long will the window of opportunity remain open?

Difficult choices

Heritage professionals and policymakers face difficult choices. Which sites can we save? Which must we let go? To make informed, transparent decisions, we must understand where and when climate impacts will occur and what kinds of archaeological resources are most at risk. Yet predicting how different types of materials will respond remains a formidable challenge. It is a challenge archaeologists must accept, and one that demands interdisciplinary collaboration.

Importantly, efforts to preserve archaeological sites can also contribute to climate adaptation. Wetland sites, for example, are not only cultural archives but also carbon stores. When they dry out or are disturbed, they release greenhouse gases. Preserving them is not just a heritage concern – it is a sustainability imperative.

Despite growing recognition of these links, archaeology is still largely absent from global climate policy. Cultural heritage connects people across time and space and can give meaning to scientific data by anchoring it in human experience. In a world grappling with environmental loss, that connection may be more vital than ever. ■

© W. Taylor and P. Bittner

◥ *Argali sheep remains emerged from a melting glacier at Tsengel Khairkha in western Mongolia.*

Sophie Douce

Journalist based in Dakar (Senegal)

Moustapha Sall, a life spent exploring the past

Senegal has only a few archaeologists to explore the country's numerous sites. One of them is Moustapha Sall. For decades, he has roamed the region in search of traces left by the people who once lived there.

Moustapha Sall developed a taste for history at an early age. Already as a high school student he was devouring history books, particularly those by Cheikh Anta Diop, a politically engaged Senegalese historian who set out to highlight Africa's contribution to world culture. "Together with other students, we started a debate club named after him. What I really wanted was to understand our history," recalls the 61-year-old professor, who now heads the history department at the Faculty of Arts and Humanities at Cheikh Anta Diop University in Dakar. For him, history is more than a discipline; it is a genuine quest for meaning. Decades of reading, research and fieldwork have led him to conclude that "we are all cultural hybrids".

From Senegal to Guinea-Bissau by way of Gambia, he has spent his long career traveling the region's bumpy roads in pickup trucks, an old Peugeot 404 and bush taxis, searching for traces left behind by former civilizations. His ambition was to return to the origins, beyond official historiography. "African history," explains this ethno-archaeologist — a discipline that studies ancient ways of life — "has almost always been written from the outside or told from the point of view of those in power. But we can try to reconstruct it based on what populations have left behind."

From this perspective, he took part in the discovery of metallurgical sites dating from the first millennium BCE in the Saloum Delta and identified ceramics belonging to the Baïnouks, considered to be the first inhabitants of Lower Casamance, a region bordered by present-day Gambia to the north and Guinea-Bissau to the south.

Although little studied until now, these remains bear witness to the wealth of ancient kingdoms and trans-Saharan trade in West Africa. Paleolithic sites, Neolithic tools, megaliths, shell mounds, old furnaces dating back to the Iron Age... In Senegal, more than 20,000 sites have been catalogued by the laboratory of the Institut fondamental d'Afrique noire (IFAN), which is responsible for preserving archaeological collections.

Ceramics and skeletons

A history buff, Moustapha Sall caught the archaeology bug during his studies. In 1990, he was selected to participate in a large-scale research project in the middle valley of the Senegal River with Susan and Roderick McIntosh, an American anthropologist couple famous for their work on the city of Djenné-Djeno in Mali, one of the oldest in sub-Saharan Africa. At the age of 25, he unearthed his first bones in this region, which was the cradle of the ancient Tekrour kingdom in the 8th century and a crossroads for the gold trade. "We found a lot of pottery, iron objects and skeletons," he remembers.

But with no specialized courses available in Dakar, he left to study in Paris and then Brussels, where he impressed the jury with his thesis on ceramic traditions in the Senegambian region. But he never considered a career in Europe. "I wanted to go back and train others. Senegal needs us," Sall insists. At the time, there were only eight archaeologists in the country, compared to twelve today.

> "Little known, the profession of archaeologist attracts few young Senegalese

If the profession still attracts few young Senegalese, it is primarily because it is little known. "When I started working, my uncle thought I was a bricklayer... In the villages, people thought we were crazy when they saw us scratching the ground. They thought we were digging through trash," he recalls with a laugh.

The profession's lack of appeal is also due to a lack of funding – researchers are most often dependent on international projects to carry out their work. "Many stu-

© Nicolas Réméné for *The UNESCO Courier*

Senegalese ethno-archaeologist Moustapha Sall in a laboratory at Cheikh Anta Diop University in Dakar.

dents drop out because they can't afford to do fieldwork. We risk having a problem with the next generation," worries the professor, who is close to retirement. Of the twenty or so students enrolled in the first year of the master's programme at the university, only a few on average pursue their studies.

Hidden treasures

In the university's archaeology laboratory, a small group of doctoral students work in the midst of dusty cardboard boxes. A shelf is filled with casts of skulls. The red and ochre soils of Senegal conceal many hidden treasures, but they must be preserved in a country where preventive archaeology, which studies and conserves remains threatened by development, has no legal framework. "Unfortunately, many remains are disappearing because of construction projects and mining companies. The law only protects sites that have already been excavated," says Moustapha Sall, who is campaigning for a change in regulations.

> **"There are more than 20,000 archaeological sites in Senegal**

A few years ago, he managed to get a highway construction project suspended at the last minute so that preventive excavations could be carried out – a victory in a country where archaeologists cannot easily make their voices heard in the face of demographic pressure and rapid urbanization.

Yet the country has much to gain, he believes, from promoting its archaeological heritage. "We did not inherit castles from our kings, but they did leave us a vast intangible heritage and vestiges of great scientific value. Don't forget that in the 13th century, the richest empire on the planet was located on the border between Senegal and Mali!" he enthuses. The richness of this heritage could even become an economic lever in the long term. "In addition to documenting the past, these assets can be a means of developing tourism and creating jobs," argues the man who is also vice-president of the West African Archaeology Association. And perhaps they can also inspire new vocations. ■

WIDE ANGLE

Guillermo G. Espinosa

Journalist, Mexico City, Mexico

Mexico: laser technology is revealing Teotihuacan's secrets

The largest metropolis in pre-Columbian America is now yielding valuable information thanks to lidar, a revolutionary laser mapping technology that is opening up new perspectives for archaeologists throughout the region.

Teotihuacan means "where humans become gods" in Nahuatl, the language of the Mexicas or Aztecs. Located some 40 kilometres from Mexico City, Teotihuacan was a dynamic metropolis for eight centuries, with, at its peak, a population of 125,000 spread over 22 km^2. Seen from below, the imposing structure of its Pyramid of the Sun appears indecipherable.

> **"Lidar remote sensing technology delivers information unobtainable by conventional archaeological methods**

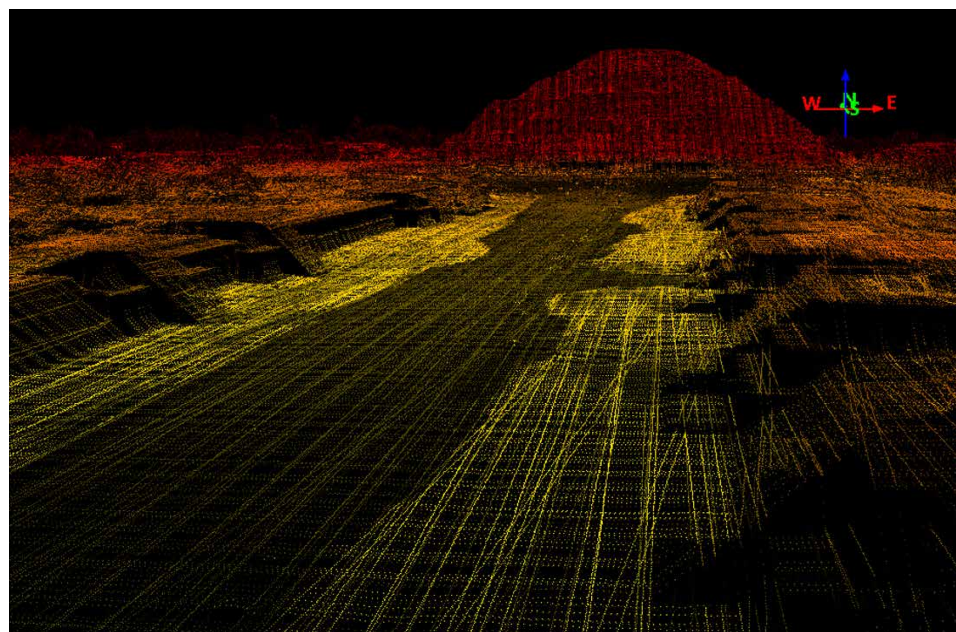
For over a century, the site has been the focus of scientific research and excavation, ever since Mexican archaeologist Leopoldo Batres established a permanent camp and museum there. Yet researchers admit they still know very little about this UNESCO World Heritage metropolis, the seat of a civilization that dominated much of Mesoamerica between 250 and 550 CE.

To unlock some of its mysteries, archaeologists now have at their disposal a new laser remote-sensing tool called "lidar" (an acronym for light detection and ranging) that delivers valuable information unobtainable by conventional archaeological methods. Placed aboard an aircraft or satellite, lidar allows us to see beneath the forest canopy and build a 3D map of the areas flown over. Surveying the tropical forest of the Teotihuacan area, observing it with topographical maps, compasses and excavation instruments, and carrying out sampling cuts would not have been enough.

A revolution in research

Against this backdrop, in 2015 specialists from the National Center for Airborne Laser Mapping at the University of Houston in the United States, with permission from Mexico's National Institute of Anthropology and History, used this tech-

An image obtained using lidar technology of the pre-Hispanic site of Teotihuacan in northeastern Mexico. By using this technology, buried or vegetation-covered structures can be detected on a large scale without the need for excavation.



© Proyecto Complejo Plaza de las Columnas, Teotihuacan

nology to produce images. These images have since undergone meticulous study by institutions in both countries.

"Lidar has revolutionized archaeological research. It allows examination on a scale that is difficult to cover on foot, and provides precise measurements to detect subtle topographical changes which would be difficult to discern on the ground," explains University of California archaeologist Nawa Sugiyama, whose experience of the site is extensive.

The data collected by lidar provide precise information on the works carried out by the Teotihuacanos to modify their environment and build their city. We know, for example, that they redeveloped 372,056 m^2 of land to prepare the ground for the emblematic Plaza de los Colonnes, and that they altered the course of a river over three kilometres to align it with the orthogonal layout of the city, in addition to controlling other waterways.

Even today, the farmlands and adjacent suburbs follow the contours of the ancient city located on the central Mexican high plateau, just 45 kilometres north-east of Mexico City.

"Given the dynamic nature of the landscape, including the imminent threat of urbanization, lidar also provides an important digital archive of these inherited features, which are disappearing at an alarming rate," emphasizes Nawa Sugiyama.

New perspectives

Some 1,200 kilometres from the ancient metropolis lies an area of dense tropical forest, home to a group of Mayan cities called Puuc that left behind no great urban achievements or spectacular pyramids, but who shared the same architecture.

This region, located in the center of the Yucatán Peninsula, saw an increase in population density between 700 BCE and 750 CE, with several hundred settlements. Thanks to lidar images taken in 2017 by a team from the University of Houston, researchers at the Bolonchén regional archaeological project were able to uncover, virtually, countless data on the layout of agricultural terraces and water storage methods, which probably shaped economic and demographic integration.

Some 350 kilometres south in what is now northern Guatemala lies Tikal, one of the emblematic cities of the Maya and of Mesoamerica as a whole. Around 600 BCE, the first inhabitants enjoyed the cool shade of high ceibas and hardy trees such as mahogany and cedar. They built pyramids and palaces where they recorded events in the form of petroglyphs.

> **"The Teotihuacanos altered the course of a river to align it with the orthogonal layout of the city**

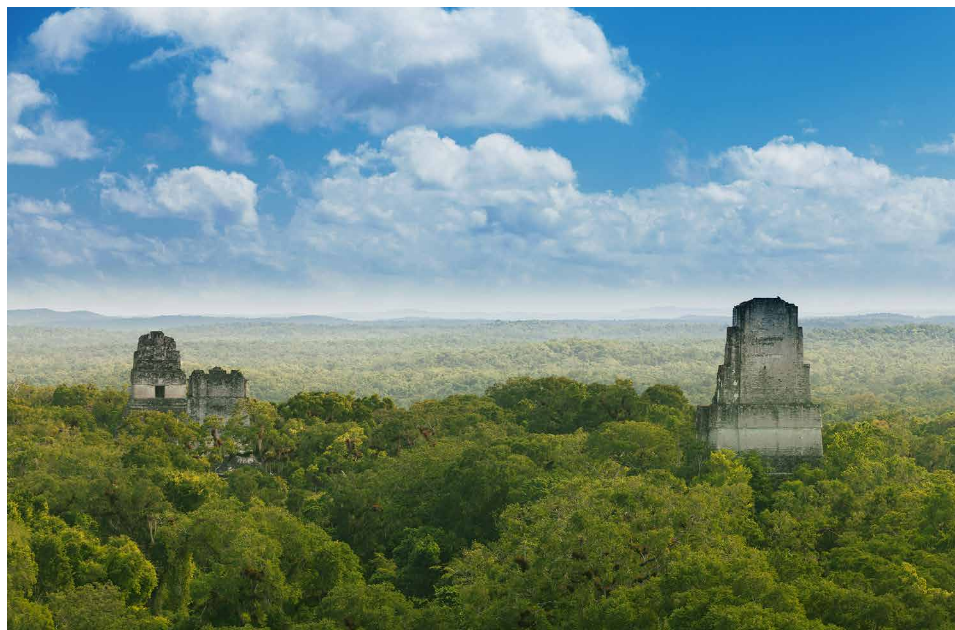
Thanks to aerial lidar images, archaeologists have been able to confirm the many links between Tikal and the distant Teotihuacan. Other major ancient Mayan sites have also been examined using this technology, including Chichén Itzá and Cobá in Mexico, and Copán in Honduras, sites that were teeming with life in the first millennium CE.

The lidar technique revealed that a hill in the urban area of Tikal was in fact a building covered in earth and vegetation, a replica of a representative Teotihuacan building with the same orientation, albeit of more modest dimensions. "Everything is visible: roads, buildings, every detail," says Stephen Houston, an expert on the Mayan world at Brown University, the United States. "Lidar shows us clearly where to focus our attention when we go out into the field."

This new evidence confirms earlier research carried out in the 1980s by Guatemalan archaeologist Pedro Laporte, which already pointed in the same direction – that the Teotihuacanos dominated Tikal between the 3rd and 4th centuries.

The possibilities offered by the new technology not only enhance our understanding of these two cities, but also of their many regional connections. Across the region, lidar is opening new perspectives for archaeologists, deepening their knowledge of known sites and paving the way for new discoveries, such as the recent uncovering of a mysterious civilization deep in the Ecuadorian forest, in the Upano Valley, which is revolutionizing our understanding of pre-Columbian Amazonia. ■

Lidar images have confirmed numerous connections between Tikal, a Mayan site (pictured) located in northern Guatemala, and Teotihuacan in Mexico, which are separated by hundreds of kilometres.



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Interview by
Agnès Bardon

UNESCO

André Delpuech :
"Looting a site means irreparably destroying unique sources of information"

Highly prized by collectors, pre-Columbian relics are the object of intense trafficking, fuelled in particular by "huaqueros", the grave robbers who operate in several Latin American countries. These clandestine excavations deprive archaeologists of information essential to understanding civilizations that have now disappeared, laments André Delpuech, a French general curator of heritage. He is also a researcher at the Alexandre Koyré Centre of the École des Hautes Études en Sciences Sociales in Paris.

When did the trade in pre-Columbian artefacts begin?

It goes back a long way. You could say it almost began with the Spanish and Portuguese conquests. At that time, the conquistadors were primarily driven by the quest for precious objects, especially gold. In Europe, a taste for exotic objects began to develop as early as the Renaissance, with the proliferation of cabinets of curiosity and private collections among the aristocracy and royal families. Later, the development of scientific missions attracted numerous explorers, who returned with cargoes laden with objects collected locally. But it was only in the 19th century that the market for pre-Columbian objects really began to develop.

How do you explain the frenzy for relics from Latin America?

This is no doubt due to the fact that pre-Columbian America has a strong resonance with our imagination, evoking ideas of El Dorado, hidden treasures and mysterious civilizations. That said, it's not the only example. Other ancient civilizations, such as Egypt, Sumer, Ancient Greece and the Etruscan period, have exerted – and continue to exert – a fascination on the public. Interest in pre-Columbian objects may also have something to do with the existence of some spectacular pieces. Indeed, in the Amazon region, which is more difficult to access and contains fewer spectacular objects, looting has not been on the same scale.

> "Some Andean sites are no more than a series of craters left by the looters

Who is behind this looting?

In regions where poverty is widespread, clandestine digs provide a livelihood for many people and supply local and international art markets. Looting is carried out by people who know the terrain very well, and for whom this activity represents an additional source of income. They are known as *huaqueros*. The term comes from *huaca*, which refers to a sacred place in the Quechua and Aymara languages of the Andes. By extension, it refers to grave robbers.

Alongside what we might call this "artisanal" trafficking, there is also larger-scale trafficking by international mafias, particularly those linked to the drug trade. These are highly organized teams who loot sites that are being excavated. There are terrible images of Andean sites that are now no more than a series of craters left by the looters. It's a massacre. Unique sources of information have been irretrievably destroyed.

© The Naachtun Project / CNRS-Paris 1 University

The Mayan site of Naachtun, located in northern Guatemala, was looted by digging a trench to access one of the site's edifices.

It should be added that the market for pre-Columbian objects has been tarnished from the outset by another phenomenon – the production of fakes. There isn't a single museum that doesn't have some in its collections. Among the most famous are the rock crystal skulls claimed to be Aztec. There are examples in the Musée du Quai Branly in Paris and the British Museum in London. However, recent analyses have shown that they were made using metal tools unknown to the Amerindians, and that they date from the late 19th century. Analyses have also shown that the crystal came from Brazil, not Mexico. There are also many Zapotec urns from Mexico that are not authentic.

What consequences does this looting have for the work of archaeologists?

It's a disaster! An object stolen from a museum is identified and catalogued. It has a history. But a looted object, by definition, is unknown. It's what we call an orphaned object. A looter armed with a pickaxe will extract a fine vase or statuette from a site and leave the rest aside. The archaeologist, on the other hand, doesn't only see the intrinsic interest of the object. He or she seeks to understand the context in which it was found. They will note that the unearthed statuette may have been next to a skeleton, providing information about the

Nicknamed "Garçonne", this piece — which has since disappeared — is recognized by experts for its hairstyle inspired by women's fashion of the 1920s.

© The Bellon collection

A fake Aztec skull preserved at the British Museum in London. Made from Brazilian quartz rather than Mexican, this piece bears traces of European metal tools unknown to the Amerindians.

© The British Museum, London, Dist. GrandPalaisRmn / The Trustees of the British Museum

> **Removing objects from their context is a bit like cutting out images from a unique manuscript**

period, or even about a funerary rite. Removing objects from their context is a bit like stealing a single manuscript from a library, cutting out the images and discarding the rest of the work. It's the same thing, because an archaeological site is unique and cannot be recreated. That's why we try to record as much information as possible, to be able to reconstruct the past.

What resources are available to combat this traffic?

There are international laws, such as the 1970 UNESCO Convention on illicit traffic in cultural property, or the UNIDROIT Convention on stolen or illicitly exported cultural property. Public institutions such as museums are becoming increasingly cautious. National legislation in some countries, such as Mexico, has become much tougher in an attempt to curb this traffic. Similarly, museums today are far more vigilant than they used to be about the provenance of the pieces that enter their collections. We're also seeing a decline in public sales in the major auction houses, because they've come under a lot of criticism for putting dubious pieces on the market. This has had a dissuasive effect on bona fide collectors, who are more reluctant to acquire pieces that might be seized. But there is also a downside to these advances – tougher controls might curb trafficking, but they also fuel the underground market.

The 1970 Convention to fight illicit trafficking

The UNESCO 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property urges countries to take measures to prohibit and prevent the illicit trafficking of cultural property.

To date, it has been ratified by 147 states. It emphasizes the importance of enhanced cooperation between countries and gives a central role to prevention, which can be implemented by establishing inventories and export certificates, and by applying controls and sanctions.

The return and restitution of cultural property is at the heart of the Convention, whose history dates back to the 1950s, when many newly independent countries sought to create an international treaty to combat illicit trafficking in cultural property.

Martin Dumas
Primbault

Journalist in Cairo (Egypt)

The undiminished glory of the pharaohs

Ancient Egypt has fascinated people for centuries. Synonymous with blockbuster museum visitors, the history of the kings of the Nile Valley occupies a special place in the collective imagination. The aura of mystery that surrounds this period, this civilization's spectacular monuments and its links with the afterlife partly explain this.

Public domain / Fox film

Scene from the American silent movie Cleopatra by J. Gordon Edwards, 1917.

On the concourse of the historic Egyptian Museum in Tahrir Square, the beating heart of Cairo, the ballet of tour buses is incessant. Bearing evocative names like Sphinx, Cleopatra and Nefertiti, they funnel a steady stream of visitors past the entrance to the emblematic building.

The museum, which houses the famous Mask of Tutankhamun, is a must-see for most of the 15 million tourists who visit the country every year. Abdallah, 47, stands in front of the ticket office with a display case overflowing with brochures, offering travellers a customized tour in exchange for a small fee of around 15 euros. "In twenty years in the business," says the tour guide, "I've never seen the crowds get any smaller – except perhaps during the hottest months of the year."

But public interest in this antique heritage extends far beyond the banks of the Nile. Ancient Egypt occupies a

Preserved at the British Museum, the Papyrus of Ani is one of the most remarkable examples of Egyptian funerary art. Dating from the 19th Dynasty, around 1275 BCE, this Book of the Dead, intended to accompany the deceased to the afterlife, is believed to have originated from Thebes, present-day Luxor.

special place in the collective imagination. A fertile breeding ground for artists, it exerts a major influence on popular culture, particularly in the cinema, where adaptations of certain historical episodes fuelled the golden age of Hollywood.

> “
> **15 million tourists visit Egypt every year**

Meanwhile, exhibitions on the great pharaohs guarantee record attendance for the world's great museums. In 1967, "Tutankhamun and His Time", an exhibition organized at the Louvre Museum in Paris, with exceptional loans from the Cairo Museum, attracted over 1.24 million visitors – a record in France, only beaten in 2019 by the exhibition "Tutankhamun, the Pharaoh's Treasure". Against this backdrop, it's easy to understand why the Supreme Council of Egyptian Antiquities is regularly called upon. Just recently, it announced the loan of 130 artefacts to Italy for the "Treasures of the Pharaohs" exhibition in Rome this autumn.

Mysteries and pyramids

The mystery that surrounds this vanished civilization, the presence of spectacular built monuments, the incredible wealth of a heritage that has yielded a host of animal-headed divinities, statuettes and death masks, partly explain a fascination that continues to be nourished by regular discoveries from new excavations. "The Egyptian terrain is in a way infinite. I'm not sure there's anywhere else in the world with such a concentration of monuments," says Pierre Tallet, Director of the French Institute of Oriental Archaeology in Cairo (IFAO).

As recently as January 2025, tombs dating back over 4,000 years were unearthed near the temple of Queen Hatshepsut in Luxor. Beyond their media impact, these discoveries are revealing new aspects of this advanced civilization. "The precision of the sculptures and drawings, the colours and techniques used, together with the magic of ancient history, have made each discovery an event in itself," explains Khaled Azab, historian and researcher at the Bibliotheca Alexandrina until 2019. "But above all, Egypt defied the technologies of its time with simple means. Imhotep [26th century BCE architect and physician] laid the foundations of medicine, so much so that nitrate extracted from mummies was used in Europe until the 18th century to treat illnesses."

The Egyptians' link with the afterlife, spectacularly manifested in the monumentality of their tombs and the care taken with embalming, is another subject of fascination. "In an increasingly profane world, where death is a forbidden subject, the principle of mummification can appear as a substitute for immortality," considers Pierre Tallet.

Egyptomania

The scientific expedition that accompanied Bonaparte's Egyptian campaign between 1798 and 1801 is often considered the starting point of the "Egyptomania" that subsequently spread throughout Europe. In the United Kingdom, the creation of the Egypt Exploration Fund in 1882 enabled the country to amass an immense collection of artefacts, many of which are still on display in its museums, not least the famous Rosetta Stone that enabled French linguist and historian Jean-François Champollion to decipher the hieroglyphs. This taste for the age of the Pharaohs would influence European architecture, art and furniture for decades.

But for Khaled Azab, Egyptian civilization had already infused the collective imagination long before. "It shaped the foundations of Greek philosophy, so

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much so that Plato himself developed an interpretation of the symbolism of hieroglyphs. Then the Ptolemies, who ruled Egypt as Alexander's heirs, integrated Pharaonic religion into the Hellenistic heritage," he explains. "But what's even more astonishing is that the cult of Isis was transmitted to Europe as early as Antiquity."

> **Egypt defied the technologies of its time with simple means**

While not new, Egypt's desire to reappropriate its ancient heritage is now clearly being asserted. "Since the beginning of the 20th century, attempts have been made to Egyptianize Egyptology and preserve antiquities," insists Khaled Azab. "Egyptian archaeology is alive and kicking, with some very good excavators. Although foreign missions were predominant for a long time, there is now a desire to promote a national archaeology," says a delighted Pierre Tallet, who also notes a growing interest in the discipline among Egyptian students.

Shipwreck mapping in the Mediterranean under the auspices of UNESCO

In 2022, an archaeological mission under the auspices of UNESCO collected data from two sites in the Mediterranean: the Skerki Bank (Tunisia) and the Sicilian Channel (Italy). The goal was to model shipwrecks alongside one of the Mediterranean's most traveled maritime routes and improve underwater mapping of the area.

Based on the principles of the Underwater Cultural Heritage Convention, twenty archaeologists from eight countries (Algeria, Croatia, Egypt, France, Italy, Morocco, Spain and Tunisia) explored this zone where many ships have sunk. In recent decades, certain wrecks have been plundered by amateur divers, putting this historic heritage at risk.

At Skerki Bank, the area of Keith Reef was scanned for the first time, and three new shipwrecks were documented, dating from ancient times to the 19th century.

The mission took place aboard the Alfred Merlin, provided by France, a state-of-the-art archaeological research vessel equipped with underwater mapping and imaging technology. Over 14 days the team collected over 400 hours of video and 20,000 photos.

The excursion was a first step in a lasting relationship of multilateral cooperation in the Mediterranean, designed to foster reflection on how to best protect the sites.

Built in the shadow of the Giza pyramids, the Grand Egyptian Museum, due to open soon, will offer visitors from all over the world a new showcase for some 100,000 historic objects, including the treasure of Tutankhamun and Queen Hetep-Heres. A journey through 7,000 years of history that will nurture a taste for ancient Egyptian history for generations to come.

WIDE ANGLE

What will remain of us for tomorrow's archaeologists?

Jan Zalasiewicz

Emeritus Professor of Palaeobiology at the University of Leicester (United Kingdom), and author, with Sarah Gabbott, of Discarded: How Technofossils will be our Ultimate Legacy *(2025).*

Sarah Gabbott

Professor of Palaeobiology at the University of Leicester, she researches the fossil record of ancient life.

Man-made minerals, synthetic plastic, concrete blocks, and inked sheets of paper are among the remnants of our civilization that future archaeologists will uncover, according to Jan Zalasiewicz and Sarah Gabbott, professors of paleobiology and authors of a book on the subject.

When tomorrow comes, what will remain of our towns and cities, of supermarkets and shopping malls (and everything that's in them), of roads and airports and harbours? Will there, indeed, be anything to find and study – or will everything have mouldered away?

As palaeontologists, we have spent our careers studying the fossil remains of the past: bones, shells, and carapaces from up to half a billion years ago. Now we have applied that knowledge to working out what is going to happen to our modern constructions, of plastics, steel and concrete. Many of these artefacts of today, like ballpoint pens, subway tunnels and mobile phones, will become, we think, the technofossils of a far tomorrow.

Built to last

Fossilization is the preservation of the remains of animals and plants, or of the physical traces that they make like footprints and burrows, in rock strata. One factor that helps fossilization is abundance, with common organisms getting into the fossil record more frequently than rare ones.

Presently, the dizzying production of modern materials tilts the scales in favour of their future fossilization: more than 10 billion tons of plastics have been produced in the last 70 years, and over half a trillion tons of concrete. The manufactured world as a whole, in that time, has grown to outweigh all of the living things on Earth combined.

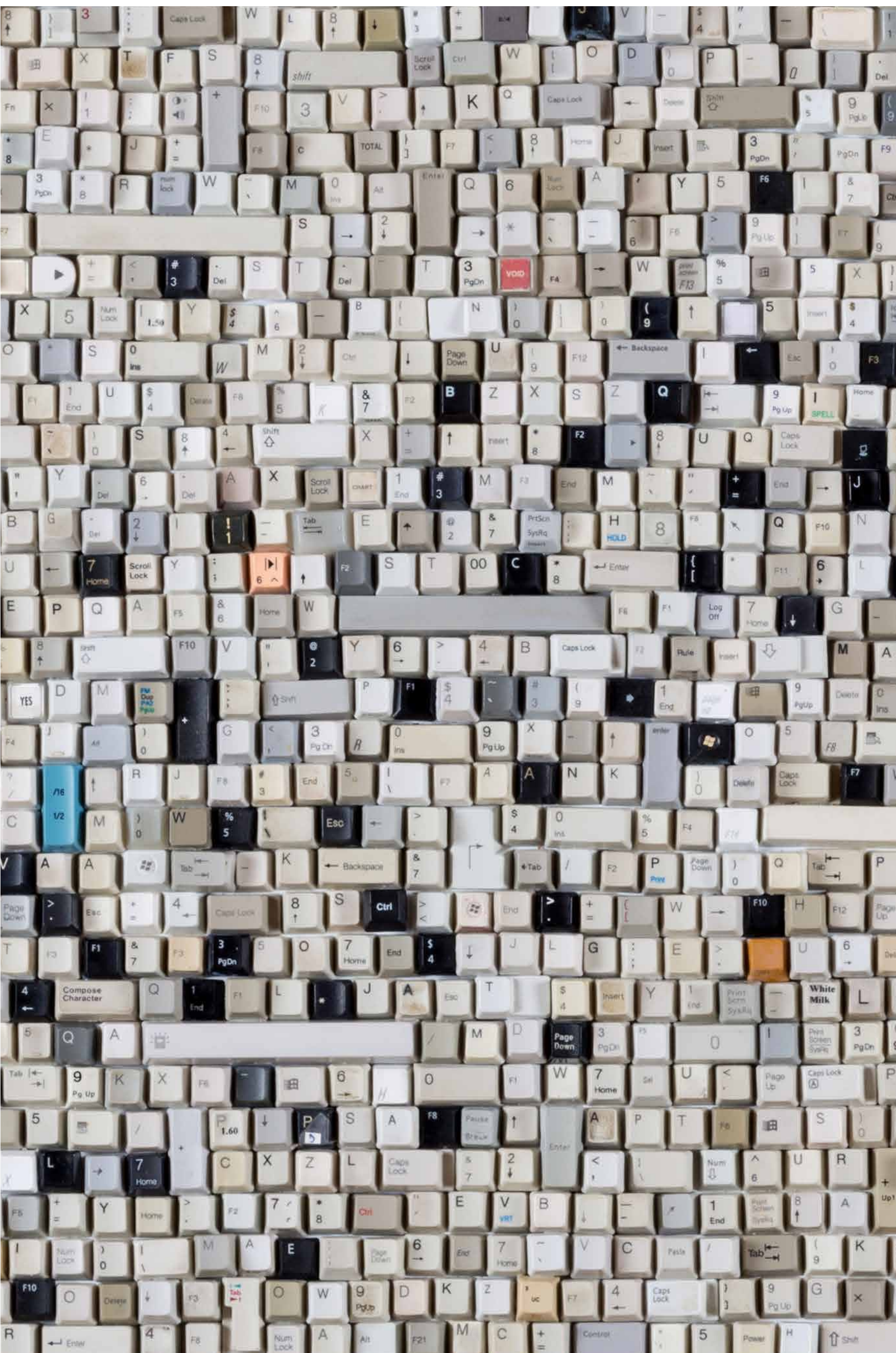
> **“Our plastic discards can endure over truly geological timescales**

And, these materials are designed to be hard-wearing, to resist wind and rain and decay. Once they are no longer useful to us and are discarded, those properties remain. And, very often, we simply bury our discarded waste objects, in burgeoning landfill sites. In beginning this journey through time, our discarded artefacts can still interact with the living world, some being swallowed by birds, others entangling fish or releasing toxins. Such effects on the wider environment can persist for many years. Even deeply buried, our waste can affect groundwater and create new mineral growths.

Microplastics

In trying to use the geological past as a guide to the far future, one obstacle is the plethora of new minerals and new materials that human ingenuity has produced, substances that have no geological pedigree at all – and mostly no archaeological one either. Thus, the Earth has about 5,200 natural minerals – but humans have now created more than 300,000 synthetic mineral compounds. Very few have been considered as regards to their longevity.

Synthetic plastics are a new, and now abundant material, essentially a post-1950 phenomenon. Published estimates of how long they might endure typically quote a few centuries, most being no more than educated guesses. And modern observations show that at the surface and in the presence of sunlight and oxygen, plastics slowly degrade – but mostly into scatterings of microplastic debris. Where protected from these agents of plastic decay, little change is seen. But observations so far cover only a matter of decades, not millions of years – and this is where palaeontology can give insights.



© Sarah Frost

Detail from QWERTY, *a work by American artist Sarah Frost, 2012.*

Microscopic alga

Living in the seas today is a microscopic marine alga, called *Tetraedron*, which secretes a tough outer wall of a biopolymer that chemically closely resembles synthetic polyethylene. In the 48 million-year-old strata of the Messel shales of Germany one can find fossil Tetraedron specimens which, moreover, have retained their plastic-like chemical structure. It's giving a clue that, once buried and protected from sun and air, at least some of our fossil plastic discards can endure over truly geological timescales.

One can make more such comparisons. The synthetic cement that binds modern concrete is rich in minerals that are rare in nature; over time, these will likely transform into more common minerals. But the sand and gravel that give concrete its framework are among nature's most resistant materials that can keep their form for billions of years underground. The silicon of our silicon chips is vanishingly rare in nature, but may transform into the silica of common quartz – though the information within their nano-scale architecture will likely be lost. The paper pages of our books, with their inked messages, have a better survival chance, for they are composed of plant material that we know can fossilize exquisitely.

Far-future puzzles

Thousands of years from now, a rich and stupendously diverse record of our modern infrastructure will be present worldwide, dwarfing the archaeological record we now study, of our pre-industrial ancestors (though future archaeologists may need to explore underwater too, among remains of coastal megacities drowned by sea-level rise).

> **Humans have created more than 300,000 synthetic mineral compounds**

Hypothetical chroniclers, tens to hundreds of millions of years hence, will need to seek our record in strata, exposed in cliffs and mountainsides, much as we dig for dinosaur bones today. They, too, would encounter rich, complex technofossil accumulations, to surely amaze and perplex them – and make them ponder, deeply, the species that constructed them. ■

The inner seasons of

"Attention is the rarest and purest form of generosity." Few ideas resonate more deeply with *The Gift*, the still life photography series by the artist Han Feng, than this reflection by French philosopher Simone Weil. Created in the quiet of her New York home during the pandemic, the photographs are intimate compositions of fruits, vegetables, stones, ceramics and treasured objects collected from around the world, assembled on an antique Chinese wooden table.

There, the everyday becomes extraordinary. A precariously balanced pumpkin, a chipped porcelain bowl, a motionless yet swimming ribbonfish, a withering flower – each is not merely a subject, but a gesture, a moment suspended between memory and play. In Han Feng's lens, the language of cuisine, vessels, and lights wave into a visual diary that is both personal and universal.

Photos:
Han Feng

Text:
Xiaorong Chen,
UNESCO

Han Feng

There is no need for vast landscapes. Her theatre is domestic, her light humble yet precise. These images breathe. They whisper of seasons and kitchens, of joy found in texture and imperfection. In this quiet shadow-play, the boundaries blur – between stillness and movement, art and ritual, the world outside and the world within.

Exhibited in cities from Boston to Shanghai, *The Gift* series reminds us that beauty may not lie in grand gestures, but in the quiet presence we offer to the seemingly small.

Having grown up in Nanjing and Hangzhou, Han Feng draws lasting inspiration from the cultural richness of her roots. Since moving to New York in 1985, she has built a distinctive practice across fashion, design and photography – marked by refined textures and craftsmanship. Her work has been exhibited internationally, including at the Victoria and Albert Museum in London and Neue Galerie in New York. ■

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Rachel Franks

Doctor of Philosophy, she holds PhDs in Australian crime fiction (Central Queensland University) and true crime narratives (University of Sydney).

When reality bites: what draws us to true crime?

Borrowing narrative elements from both investigative journalism and the crime novel, true crime – often called "crime documentary" – has long fascinated the public. Today, streaming series and podcasts are putting a huge boost on this deeply rooted popular culture genre. Its success stems partly from a human need to comprehend the inexplicable, confront our fears, and draw a clear line between good and evil. However, these criminal narratives also bring significant ethical questions to the forefront.

Truman Capote's book, *In Cold Blood* (1966), is generally considered to have popularized the genre. In it, the American author recounts the murder of a family of farmers in Kansas, delving into the lives of the victims and, for the first time, their killers, in an attempt to understand the crime.

While true crime has experienced a renewed interest in recent years, the appetite for it isn't new. In fact, one of our most ancient storytelling traditions is the crime story. For as long as we have told each other tales, we have gossiped, lectured and warned each other about crime in our communities.

The cheaper distribution of stories from the 15th century onwards ensured affordable access to a range of topics including crime. The early successes of mass-produced crime narratives, across Europe, were ballads and broadsides which described crimes that were quickly followed by punishments (usually at the gallows). In the United Kingdom in 1849, a broadside covering the hanging of Frederick and Maria Manning, who were accused of murdering Maria's lover, sold an astonishing 2.5 million copies. Such tales taught us that if you did the wrong thing, then justice would be swift and brutal.

From ink to interface

Consumption of crime stories grew in line with worldwide increases in literacy rates that have made it easier to access these tales, with newspapers, magazines and books allowing us to take terrible offenders to our workplaces, on weekend excursions and into our homes. Over time, we grew obsessed with the murderer while becoming interested in daring robberies, large-scale frauds and drug offences. We became fascinated, too, with crimes that centre celebrities such as the athlete Oscar Pistorius who was convicted of the 2013 murder of his girlfriend Reeva Steenkamp in South Africa.

Print is still a successful medium for true crime, but it has been supplemented by fictionalized adaptations and documentaries for large and small screens, and online news outlets and internet discussion boards dedicated to the unresolved mysteries of the world – such as Unresolved Mysteries which has an extraordinary 4.4 million members on the online social media forum Reddit. We have seen, too, the phenomenal rise of the true crime podcast.

Retellings of crimes have also become global events, taking local issues and generating international sensations. New York-based filmmakers Laura Ricciardi and Moira Demos

profiled Steven Avery, accused of murdering Teresa Halbach in rural Wisconsin in 2005, in *Making a Murderer* (Netflix, 2015), which was watched by over 19 million people within 35 days of the show's release. Sarah Koenig's podcast *Serial* (2014), made in the United States, showcased the power of audio with the first two seasons of her work downloaded over 340 million times.

In Australia, in 2024, First Nations women accounted for around 3 per cent of the adult female population, but made up 16 per cent of all murder victims

Need to know

Modern crime stories, regardless of format, still showcase punishment but within a broader educational remit. Nowadays, true crime contributes to debates on *how*, and *how much*, we punish people. We also, through these stories, learn about the theories attempting to explain causes of wrongdoing. True crime, critically, facilitates our natural curiosity: as humans, we want to understand. This "need to know" makes the resolution of these tales essential with most consumers fascinated by the story but focused on its ending. It is this focus that feeds our interest in cold cases where there is no concluding chapter. Or, in cases of wrongful convictions, there is a chapter of punishment but one where we feel the wrong person has been blamed, giving us an unsatisfactory cliffhanger instead of closure.

One of the central learning outcomes in this informal curriculum of crime is personal preservation. Yes, for some people, engaging with news stories dedicated to crime is a simple matter of keeping up with current affairs. For many, there is a desire to learn about what leads to crime, how criminal investigations are undertaken and how the justice system does, or does not, work. For yet others, including increasing numbers of women, there is also a strategic element to learning about the criminals who live alongside us.

Ethical biases

These stories, dominated by the female victim, allow women to use these narratives to refine survival strategies and give them a sense of control. They help answer questions like: Would I recognize someone who wants to hurt me? What would I do if that happened to me? This raises an ethical issue, insofar as true crime, by its extraordinary dimension, can overshadow the real sources of danger. The risk of being murdered by a serial killer is comparatively low, but the risk of harm by an intimate partner can be so high that domestic spaces are often more dangerous than any poorly lit car park.

Another ethical issue with the genre that requires urgent resolution is the attention given to the "ideal victim" who is traditionally female, young, attractive and, usually, white. The 2021 murder of Gabby Petito, a 22-year-old American vlogger, is one of the best examples of a crime story going viral on social media, with people obsessed with the case and efforts to solve it. All crimes are worthy of our attention, but the attention given to Petito's murder as she travelled with her fiancé across the United States, was disproportionate to the coverage of similar crimes such as the violence committed against Indigenous women.

In Australia, in 2024, First Nations women accounted for around 3 per cent of the adult female population, but made up approximately 16 per cent of all murder victims in the country. The statistics in Canada, also in 2024, are similar with Indigenous women representing 16 per cent of all female homicides despite being only 4.3 per cent of the population. In the United States, the podcast *Black Girl Gone* (2021), has a mission "to shed light on the true crime stories of missing and murdered black women that have been overlooked and forgotten by society". The bilingual *Cuento Crimen* (2020) also works to bring attention to cases that have been neglected by mainstream media as a popular podcast in English and Spanish.

Some people are drawn to crime stories to experience different, more dangerous, worlds. Murders and other dreadful crimes committed "somewhere else" can highlight the comfort of their own lives. Disturbingly, there will always be those who enjoy the horrors these stories can offer.

It is this voyeurism, and the unsettling knowledge the victim was real, that is subject to criticism. The exploitation of the pain and suffering of victims or their loved ones is regularly denounced. But not all stories are unworthy. As American author and critic Charles Graeber has noted "… among the thugs of the genre you'll find master craftspeople holding dirt but wielding the same literary toolkit available to the investigative journalist, the novelist and the poet…" In other words: criminal cases also inspire serious narratives which shed light on our dark side and turn it into something meaningful.

From shocking headlines to complex narratives

Indeed, many true crime titles today are produced by biographers, coroners, detectives, historians, journalists, lawyers and psychologists. We see creators interviewed in the mainstream media, walking the red carpet at big events and winning awards. Perhaps the most important success of true crime is in the approach that provides nuanced tales of serious social issues. This is seen in how more and more contemporary true crime narratives privilege complex storytelling and diligent research over grainy crime scene photography and

© Boris Séméniako for *The UNESCO Courier*

attention-seeking headlines that offer simplistic stereotypes of people as being either "bad" or "good".

> **Perhaps the most important success of true crime is in the approach that provides nuanced tales of serious social issues**

Crime is timeless and universal. Despite the persistence of the criminal, our increasingly sophisticated treatment of crime – as investigators, punishers and storytellers – allows for the tracking of how we think about crime. The very concept of crime and the penalties associated with it have also evolved over time. For instance, rules have relaxed in many countries since the mid-20th century regarding alcohol sale and consumption. We see, too, the definition of new crimes in response to advances in technologies that present increasingly innovative types of frauds and online offences.

Today, in an era that can feel increasingly chaotic and overwhelming, crime stories allow us to draw a clear line between right and wrong. We can take comfort in knowing the majority of us accept certain acts as wrong and will share our outrage when the worst crimes are committed. The success of crime stories, rooted in popular culture and often decried, ultimately works as a sublimation of our aggressive impulses, a form of catharsis. It's not an expression of imbalance, but rather a way of protecting ourselves and others.

Samir Sayegh: “Calligraphy is the art of abstraction par excellence”

© Nicole Hamouche

Interview by
Nicole Hamouche
Journalist in Beirut

Lebanese thinker, poet, and art critic Samir Sayegh is also one of the undisputed masters of contemporary Arabic calligraphy. In an attempt to liberate calligraphy beyond the meaning of each letter, he uses geometric forms to develop a universal language. His work, influenced by the minimalism of modern art, is exhibited by major international institutions such as the British Museum (United Kingdom) and the Barjeel Art Foundation (United Arab Emirates).

How did you get into calligraphy? Was it an obvious choice?

I came to calligraphy in two stages: first as a child, thanks to teachers who thought I had beautiful handwriting and encouraged me, and I began to take a closer interest in the discipline. I consulted the Al Mounjid dictionary, where I found a page by calligrapher Fouad Estephan on Arabic calligraphy, its different styles and formats. I started imitating them.

Later, I returned to calligraphy when I was an art critic, studying in particular the modernity of Arab heritage. I was researching Lebanon and the Arab world in general. That's when I realized just how great an art form Arabic calligraphy was, conveying a philosophy distinct from the Western tradition that spans from ancient Greece to the 20th century. When I realized that Arabic calligraphers were mainly interested in its ornamental dimension, I decided to devote myself to it also, and couldn't stop.

> **"I realised just how great an art form Arabic calligraphy was, conveying a philosophy different from that of the West**

Where do you work? What does a typical day look like for you?

I work from my home in Gemmayze, a traditional Beirut neighbourhood, in a separate area set aside as my studio. I get up at daybreak and make myself a coffee. My wife and I listen to music and the daily news, and then I get down to work. I always have some paper to hand so I can jot down whatever comes spontaneously to mind. In fact, you could say I have a second studio – my imagination. Indeed, before I can draw a letter, I must first see it in my mind. For this, I need to be lying down, or have my eyes closed.

What are your sources of inspiration?

They are many and mysterious. Sometimes they spring from ancient sources from the depths of time. At other times, inspiration comes from a flower, a herb, books, photos or dreams. It's the fruit of constant contemplation.

Inspiration can also come from world events that strike me indirectly. For example, my work on Anchored/ancestral cities was born out of my reflection on the wars witnessed in recent years by ancient Middle Eastern cities such as Mosul, Aleppo and Beirut. The pain I felt at the sight of this destruction led me to use predominantly black ink and abstract forms to express the silent cry within me.

My inspiration also stems from the laws of geometry, balance, symmetry and perfection in form.

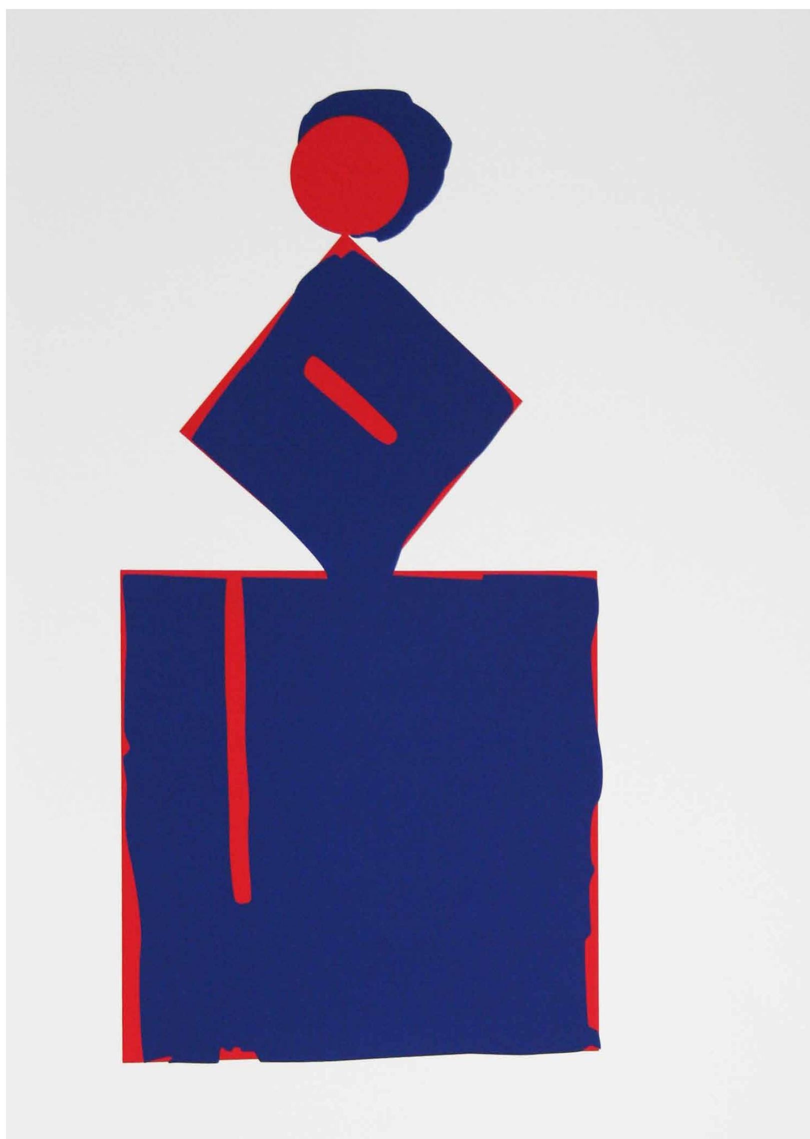
How would you define calligraphy for someone who knows nothing about this art? Can we call it a language?

Calligraphy is an art of form. Ibn Mouqla, one of the greatest calligraphers of the Abbasid caliphate, who lived in the 10th century, defined it as a discipline characterized by both the beauty of form and the correctness of letter position. He applied the laws of geometry to this art.

Calligraphy played an even greater role in the Arab world because the language was not written. Its purpose was not writing, but rather to give form to inspired speech. When this art evolved, it created a language in itself, born of the diversity of forms that make up Arabic letters. But when these shapes are organized in a certain order, they create a visual language that is accessible not only to those who speak Arabic, but also to everyone else, because the language of shapes is universal.

You are also a poet. How do writing and calligraphy feed each other?

In my experience, there is no dichotomy between the poet and the calligrapher in me. Like poetry, calligraphy emanates from an



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Work from the series In Praise of Letters*, 2011.*

Modernity, conveyed by the educated and cultural circles of the West, spread from the world of the arts. In particular, it manifested itself through abstraction. And calligraphy is an art of abstraction par excellence. It is not a reduction of what exists, of what we see, but an embodiment of what we don't see.

> **"The essence of calligraphy is above all aesthetic**

The more I mature, the more I free myself from influences inherited from the past, from rules and customs. In fact, the more I emancipate myself from these rules, the more I tend towards a form of modernity.

In what ways is calligraphy universal?

It is universal because it's a visual art based on geometry and form. It takes on its full meaning when it meets the viewer's eye, without the need to understand the meaning of the words. Like Chinese calligraphy, Arabic calligraphy does not seek to translate reality. It seeks to render the artist's experience, to express his conflict with himself, with life or with the so-called hidden order of the world. Both calligraphies are based on form and image. The techniques, however – the use of brushes in China, reeds or feathers in the Arab world – differ.

In an increasingly digital world, is there still a place for calligraphy? Are young people still interested in this ancient art?

To answer this question, I would distinguish calligraphy from typography and graphic design. Digital letters have precise functions, linked to writing. Calligraphy, on the other hand, is a matter of aesthetics. It's an art freed from function.

I think that calligraphy retains its relevance in this digital environment, and I can say with confidence and conviction that today's young artists hold it in high esteem. They often see it as a magical art form, with meaning for them. In the Arab world today, we are witnessing the emergence of a new generation of calligraphers. They may not be numerous, but they are driven by ambition and a passion for this art, and don't hesitate to experiment. I support them wholeheartedly. ■

inner, innate impulse. The relationship between these two modes of expression is, as a result, harmonious, almost amorous.

After the publication of my first collection of poetry, I stopped writing because of the war and its consequences. Beirut was isolated and destroyed, and nobody read or published anymore. It was a time when there was no place for poetry. So I devoted myself fully to calligraphy.

Later, when I started teaching graphic design and typography, I began writing poems about letters, which I called Memoirs of Letters, as if they were living creatures that transformed themselves into poetic symbols.

Very early on, you embodied a form of modernity. How is this translated in your work?

My reading and practice have enabled me to separate calligraphy from the function of writing. The essence of calligraphy is above all aesthetic, arising from form and geometry. But this world of imaginary form is far more vast than that of the dictionary.

◥ *Work from the series* Inveterate cities*, 2015.*

© Image BeMA - The Beirut Museum of Art

Anuliina Savolainen

UNESCO

Ocean science: youth dive in!

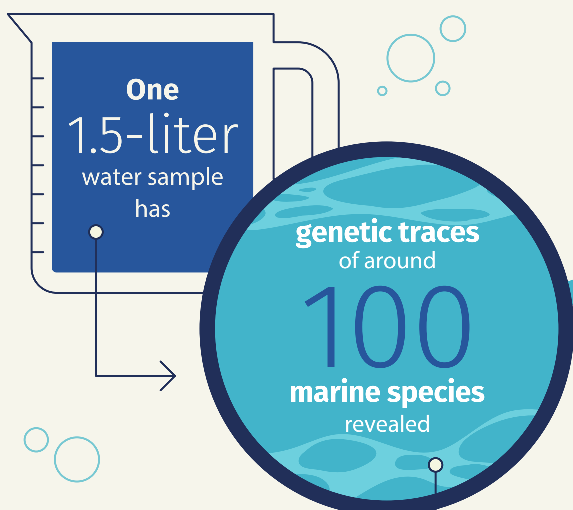
Launched in 2021, the **Environmental DNA (eDNA) Expeditions**[1] have allowed to mobilize hundreds of students and schoolchildren across marine World Heritage sites to collect water samples with **kits for recording species' presence. The goal is to study the impacts of climate change among global marine biodiversity hotspots. A second phase of the eDNA project was launched in June 2025.**

Non-invasive data collection

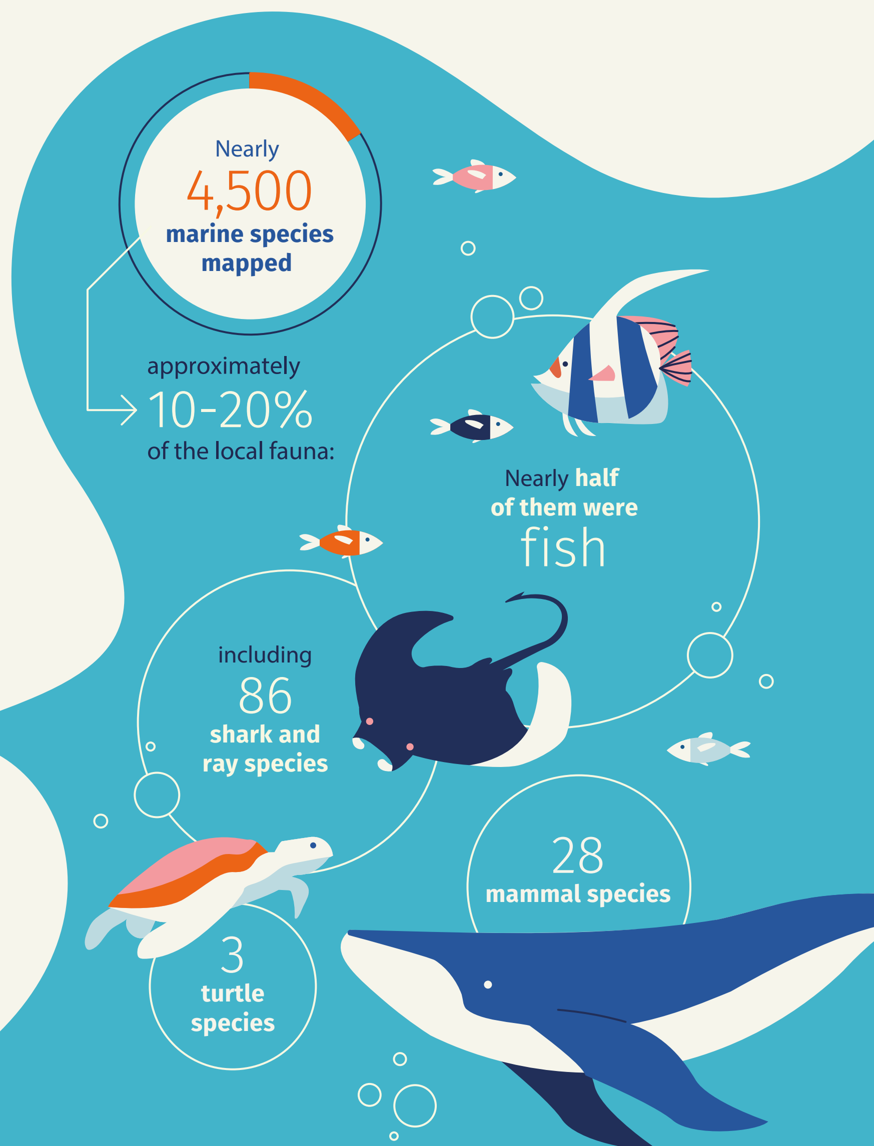
Over the course of **3 years,**

250 **young students** | in 19 **countries** | across 21 **marine World Heritage sites**

contributed to the gathering of 400 **eDNA samples.**



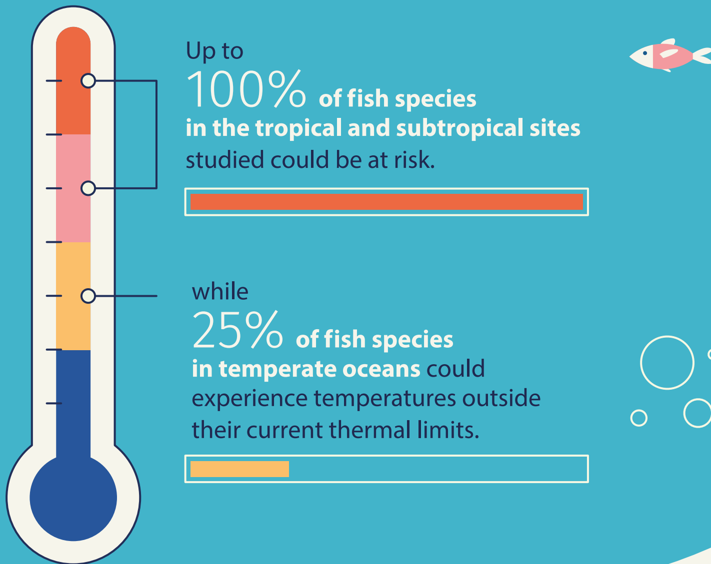
The samples were sent to a central laboratory where the **eDNA was extracted, analyzed, and cross-checked for identification.**



[1] A collaboration between the Intergovernmental Oceanographic Commission and the World Heritage Centre, supported by the Government of Flanders.

A worrying finding

Warming oceans risk pushing many species outside of their known habitats.



A snapshot of the state of ocean life

The results of the eDNA project **provide insights** on how climate change affects marine species, to better protect them.

Data from UNESCO-IOC's Ocean Biodiversity Information System (OBIS) provide important indicators for global ocean biodiversity: **According to OBIS, UNESCO's world heritage marine sites are home to over a third of the world's vulnerable and threatened marine species, they also host one-fifth of the world's blue carbon and 15% of the world's coral reef area.**

UNESCO sites as sustainability learning hubs

The implementation guide *UNESCO sites as partners for Education for Sustainable Development* (2025) provides **35 practical ideas for educational activities.**

UNESCO designated sites

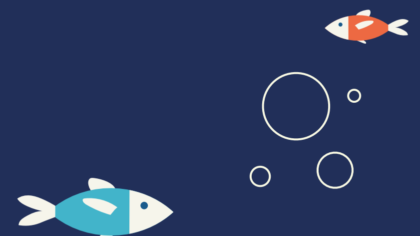
(as of May 2025):

759	biosphere reserves
229	Global Geoparks
1,223	World Heritage sites (including 51 marine sites)
51	ecohydrology demonstration sites
113	Water Museums

Covering

roughly 6%

of the Earth's land area



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Homage to Milan Kundera

HOMMAGE À
MILAN
KUNDERA

DISCOURS
PRONONCÉS À L'UNESCO
LE 30 MAI 2024

nrf

Gallimard

On 30 May 2024, UNESCO paid tribute to the Czech and French writer and playwright Milan Kundera, a towering figure of contemporary literature, during an exceptional evening dedicated to remembrance and the transmission of his legacy.

Editors, translators, and friends came together to celebrate the polyphonic work of the author of *The Unbearable Lightness of Being*, and to highlight the universal resonance of his reflections on exile, memory, and European identity.

This publication brings together the speeches delivered during the event — a literary and intellectual tribute worthy of a body of work that has left a lasting mark on generations of readers around the world.

UNESCO Publishing/Gallimard
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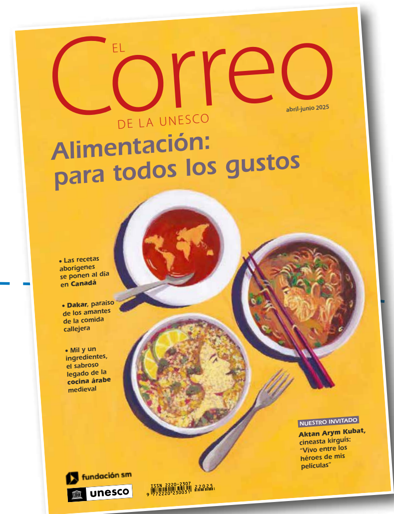

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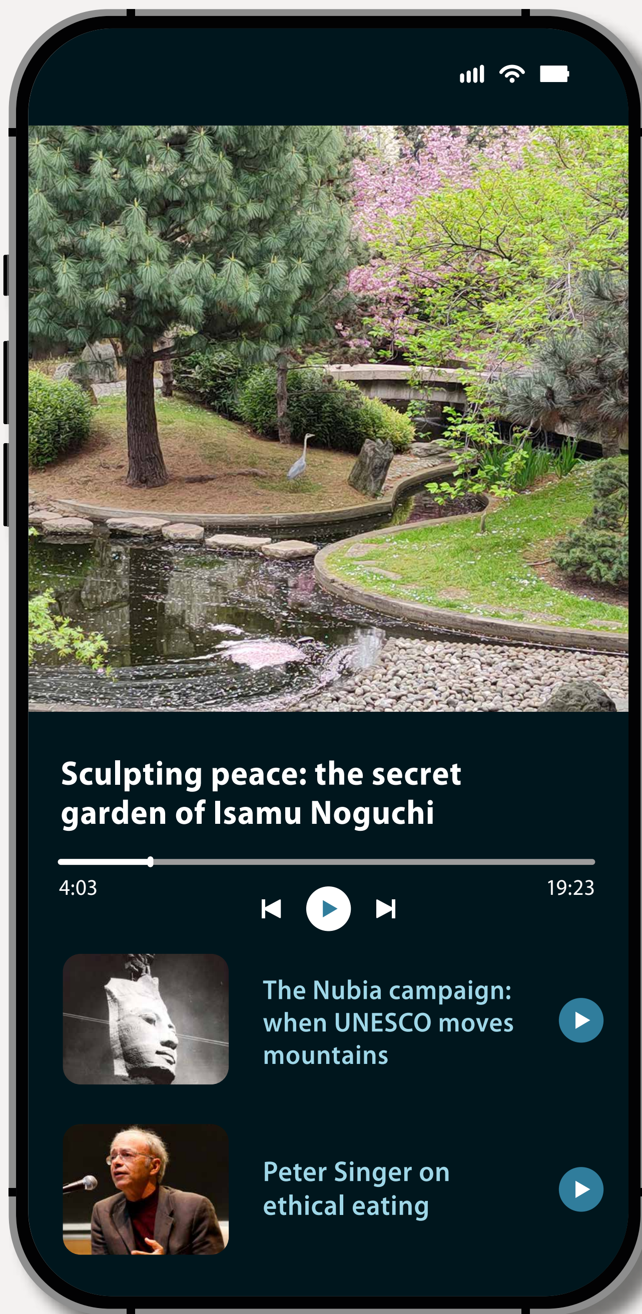

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