THE UNESCO
Courier
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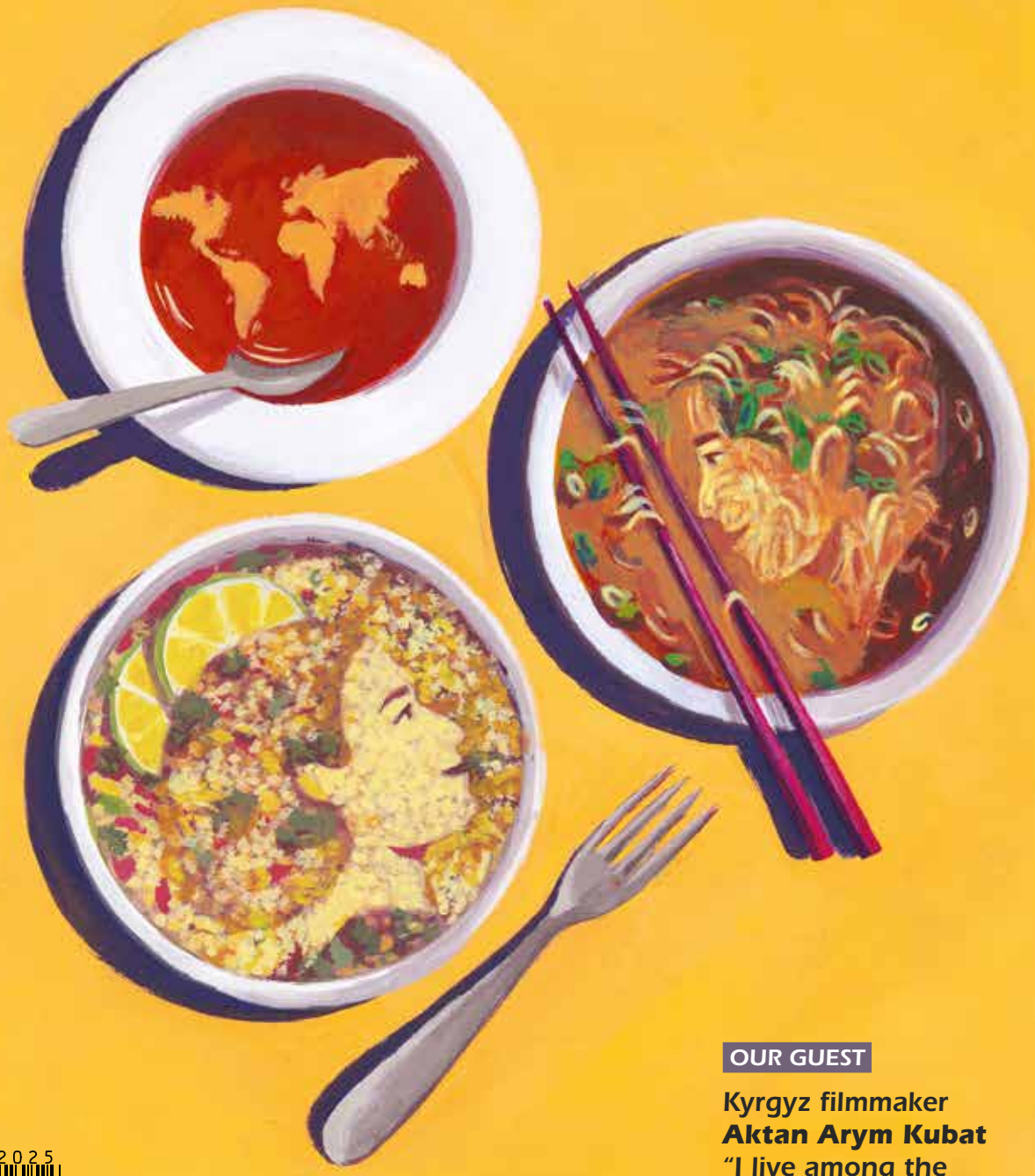
Food: what unites us



- In **Canada**, the revival of Indigenous cuisine
- In **Dakar**, street food is levelling up
- A thousand and one ingredients: medieval **Arab cuisine**'s rich heritage

OUR GUEST

Kyrgyz filmmaker **Aktan Arym Kubat** "I live among the heroes of my films"

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THE UNESCO Courier

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Editorial

"To chew and swallow food to nourish oneself." This generally accepted dictionary definition refers to the purely physiological aspect of eating. Inevitably reductive, it says nothing about the extent to which this daily act, shaped by cultural imaginaries, taboos and social representations, is at the heart of various crucial concerns.

Globalization and the expansion of the food industry since the second half of the 20th century have revolutionized our eating habits. In many societies, these habits have moved from local, seasonal consumption to the widespread use of processed and imported products. This shift has had environmental consequences, whose effects are being felt more keenly today than ever before. It also has an impact on the health of consumers, against a backdrop of climate crisis, famine and food shortages.

Each dish, each recipe, each ingredient carries within it the marks of a collective past, bearing witness to cultural influences bequeathed by history. The potato, tomato, corn and cocoa crossed the Atlantic to take root in Europe, where they revolutionized the cuisine. Conversely, Europeans also introduced new products, such as wheat, sugar cane and citrus fruits, which have transformed the habits of other continents.

It is no surprise, then, that so many culinary traditions, from the Mediterranean diet to the art of Neapolitan "Pizzaiuolo" and knowledge, know-how and practices pertaining to the production and consumption of couscous, are included on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity, as a means of "creating society", living together and nurturing dialogue between peoples. Flatbread making, inscribed in 2016 at UNESCO by Azerbaijan, Iran, Kazakhstan, Kyrgyzstan and Türkiye, offers a fine example of the social, cultural, and symbolic role that food plays in everyday life and on special occasions, such as weddings, births, funerals or prayers.

Tell me what you eat, and I'll tell you who you are. Cookery speaks of us, of our emotions, of our pleasures and of our dreams. In the *Lunyu*, Confucius already pointed out that "One never tires of delicious and flavoursome food." A few centuries later, the philosopher Gaston Bachelard asserted that "eating is . . . a feast for the senses". Cooking is an invitation to a veritable round-the-world tour – dinner is served!

Agnès Bardon
Editor-in-Chief

Food: what unites us

Damien Conaré

Secretary-General of the UNESCO Chair in World Food Systems, Institut Agro Montpellier (France)

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Over the last few decades, our food system has undergone profound changes. Food has never been available in such large quantities, or with such great diversity, even if it is not evenly distributed across the planet. Globalized and ultra-processed foods have invited themselves onto our tables, with major consequences for our health and the environment. But while modes of production and consumption have changed, food continues to shape our emotional and cultural experiences. It remains what connects us to ourselves, to others and, more broadly, to all living things.

Never before has so much food been available worldwide, in terms of both quantity and quality. This "feat" was made possible by the industrialization of our agricultural and food systems, which began in certain regions of the world at the end of the 19th century.

We have passed from a production system that relied mainly on the sun for energy, to systems based on the massive use of non-renewable mineral resources (first coal, then oil and gas), used for mechanization and the use of synthetic products – fertilizers, herbicides and insecticides.

The supply of foodstuffs has kept pace with technological developments, from refrigerating machines (1858) and food irradiation (1905) to rapid freezing (1929), microwaves (1947) and the ultrafiltration of milk (1969). The automation of labour in agri-food factories has also made it possible to increase rates of production for standardized foods.

At the end of the 20th century, a new player gained increasing power – mass retail, which is becoming established almost everywhere in the world with the emergence of the middle classes, favouring access to generally cheap food. But today, the limitations of industrialized food systems are glaringly apparent in the face of the challenges of sustainability, with implications for health, the environment, and social and economic inequalities.

> **"The limits of industrialized food systems are glaringly apparent when it comes to the challenges of sustainability**

Fats and carbohydrates

While food is more plentiful worldwide than ever before, it is far from evenly distributed. According to the latest report on the state of food security and nutrition in the world, published by five United Nations agencies, almost 730 million people were still suffering from hunger in 2023, i.e. one person in eleven in the world (one in five in Africa). This situation is linked in particular to continuing poverty, relentless food price inflation and, above all, the multiplication of conflicts and climate crises. At the same time, the growing consumption of products high in fats and carbohydrates, combined with a reduction in physical activity, is leading to an increase in the number of people who are overweight or obese, raising the risk of pathologies such as type 2 diabetes, cardiovascular disease and certain cancers. Projections suggest that, by 2030, more than 1.2 billion of the world's adult population will be obese.

In environmental terms, the cost of such a food production system is also high. It is estimated that, on a global scale, agriculture and the food industry are responsible for a third of greenhouse gas emissions linked to human activities. Added to this are water pollution, the disappearance of pollinators and the decline in soil fertility due to the massive use of chemical products, as well as a sharp erosion of biodiversity under cultivation.

Finally, on a socio-economic level, the high concentration of companies throughout the food chain has contributed to the creation of groups in dominant positions, undermining the independence and income of farmers.

New consumer practices

At the same time, major societal changes have reshaped our relationships with food. In cities, purchasing power is becoming

Eat well to learn well

The March 2025 *Learn to Eat Well* report by UNESCO's Global Education Monitoring Report team and the London School of Hygiene and Tropical Medicine emphasizes the critical link between nutrition and learning. Drawing on insights from the School Meals Coalition, which includes some 100 countries, the report highlights the importance of integrating food education and access to healthy school meals into global policy agendas. According to UNICEF, 148 million children under five suffer from stunted growth and 45 million children weigh too little for their height due to malnutrition.

Research shows that adequate early childhood nutrition has a profound impact on cognitive development, education, and even future income. For instance, the *Barbados Nutrition Study*, conducted in Barbados by Harvard Medical School researchers over several decades, found that experiencing one episode of moderate to severe malnutrition during infancy is associated with a significantly elevated incidence of impaired cognitive development in adulthood.

To tackle these challenges, the paper recommends ensuring universally accessible nutritious meals, promoting food education, and regulating unhealthy food marketing to children. The paper also calls for sustainable food systems that respect biodiversity, such as farm-to-school initiatives.

UNESCO Creative Cities: connecting the world's cuisines

As epicenters of local food culture, the UNESCO Creative Cities of Gastronomy are recognized for their commitment to preserving culinary traditions while embracing modern gastronomy. The first city to join the network was Popayan in Colombia in 2005 and today, there are a total of 56 designated cities in 34 countries, from Belém in Brazil to Buraidah in Saudi Arabia, via Kuching in Malaysia and Bergen in Norway. Each of the cities brings a unique flavour to the network.

To be approved, cities need to meet a number of criteria. Their gastronomy culture and culinary community must be well-developed and vibrant. They also need to value traditional practices, such as indigenous ingredients used in cooking. Moreover, they commit to promote sustainable local products and highlight biodiversity conservation in cooking school curricula. They host a multitude of initiatives, including festivals and conferences, training events, and awareness campaigns on food issues.

The network helps foster collaboration and the sharing of best practices between its member cities that make creativity a driving force behind sustainable urban development.

the main factor determining access to food. What is more, with people often working far from home, alongside fast-paced lifestyles, time-saving and convenience are becoming important criteria – buying "ready" meals and take-aways, outsourcing certain food-related tasks, and so on.

International migration and, more recently, the influence of social media, have enriched eating styles with new products and consumption practices. The cuisines of Mexico, South-East Asia, Japan, and Lebanon, for example, have spread to many countries. "Traditional" dishes such as tacos, tabbouleh, and pizza have been adapted or reinterpreted along the way.

Lastly, the individualization of lifestyles is leading to new eating habits – special diets, shared meals (but no longer necessarily with the same food), self-improvement through personalized nutrition linked to specific biological needs, etc.

These developments, combined with the industrialization of our farming and food systems, have led to various forms of distancing – economic, with an increase in the number of intermediaries between farmers and consumers; geographical, with more remote areas of production; cognitive, with the loss of contact between city dwellers and farmers, which generates a lack of understanding of the food chain. This distancing is also sensory – whereas we used to gauge the quality of food by tasting, sniffing or feeling it, we increasingly do so by reading the information on packaging.

A way of being in the world

Today, we need to reduce these various distances in order to re-establish the connections we have lost with our food. All the more so since, as a "total social fact", food is an essential means of building our various relationships in the world.

> **"Social media have enriched food styles with new products and consumption practices**

It plays a key role in our relationship with ourselves, as the nourished body raises questions of health, but also of emotions, pleasures and the construction of our individual and collective identities. The act of eating is both objective and symbolic – it influences the health of the eater as well as the way they assert their identity in the world.

Food also plays a decisive role in our relationships with others, through the conviviality of shared meals, the transmission of table manners and culinary skills, the cross-fertilization of food cultures, and so on. Sharing a meal is a way of connecting with others – eating the same food forges common relationships, since incorporating the food of the collective is, symbolically, incorporating oneself into the collective. It also plays a part in our spiritual relationships with the invisible worlds, where food plays a key role, through offerings, for example.

And, finally, it shapes our relationship with the biosphere, with other non-human living beings, with the animal and plant worlds, with landscapes shaped by agriculture, but also with the whole microbial universe, which not only is part of our make-up (the intestinal microbiota), but also plays a key role in the processing and preservation of our food (in fermentation, for example).

All these relationships connected by food invite us to imagine forms of commitment to change towards more sustainable food systems, which contribute to the health of individuals and ecosystems, as well as to social justice and cohesion. Food is, effectively, political – the way we eat and the way we organize ourselves to eat determine the world we want to live in. ■

Jessica Bradley
Journalist in the United Kingdom

The future on our plates

From lab-grown meat to insects and microalgae, alternative protein sources are being explored to meet the needs of eight billion people. But for these foods to become mainstream, one obstacle must be overcome: our deep-rooted fear of novelty.

"A lot of science fiction writers in the 1950s went down the route of characters pressing a button, and a small square of protein coming out," says Annie Gray, food historian (United Kingdom). Our plates haven't yet been filled with these magical food pills. However, in the face of environmental and demographic challenges, agri-food researchers today are exploring new avenues to feed a world population of eight billion.

> **"Carbon dioxide in the air could also be converted into food**

More and more new foods and methods of production have been created on farms, in factories, and in labs. Scientists and manufacturers are focused on making palatable alternative proteins that are nutritious, accessible, and more sustainable than red meat, including insects, lab-grown meat, meal replacement shakes and microalgae.

Lab-grown meat is made from a sample of stem cells taken from a live animal. The cells are put into a bioreactor that mimics the environment in the animals' body, and fed nutrients. The cells multiply and become muscle, fat and connective tissue.

Microalgae, such as spirulina and chlorella, are another possible substitute. They can be made from a single cell, or numerous cells put together in a simple structure that can multiply into a big, nutrient-rich biomass. These organisms can be grown in many environments, so they're perfect for industrial agriculture.

Ginseng and carbon dioxide

But the search for new proteins is only part of the story. The development of foods designed to improve our well-being is another big trend, says Morgaine Gaye, a food futurologist based in London. "It will be about functional ingredients that are expected to change our health state and protect us from our own emotional rollercoaster." One example of this is the rising popularity of drinks with ingredients including ashwagandha (also known as Indian ginseng), L-theanine (an amino acid found in tea), and magnesium.

Even more surprising, carbon dioxide in the air could also be converted into food. The idea is not new. It dates back to the 1970s, when the United States' space agency NASA was looking for ways to ensure astronauts ate enough protein. Air-based foods are produced with technology that converts carbon dioxide from the air into nutrients, including protein, using gas fermentation and microbial processes.

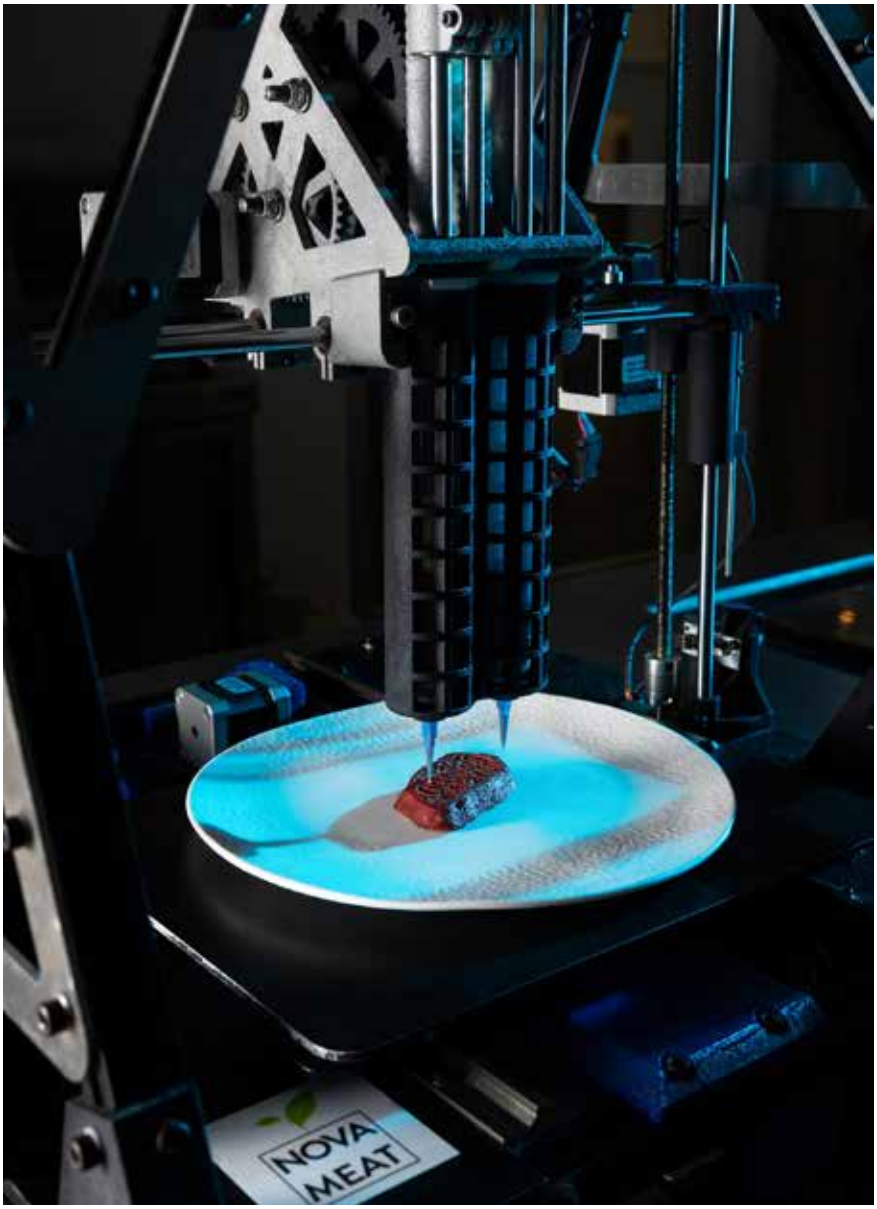
Recently, one company has produced air chicken, meat, scallops and fish, made by whisking together elements in the air with cultures, in a similar process to making cheese or yogurt. The protein produced from this process is harvested, purified and dried.

Food taboos

To become mainstream, consumers need to adopt these innovative products. However, every society has their food taboos. In the West, insects are a great example of such a taboo. Historically, they have been associated with dirt and disease, as well as pests that ruined harvests.

Many foods have faced fear and suspicion before becoming part of the general diet. "In the early modern era, a huge amount of new foods were taken to Europe from the Americas, including tomatoes, pineapples, and chocolate. Some foods were met with suspicion. An Italian physician wrote in 1628 that tomatoes were among the 'strange and horrible things' that some people tried to eat," explains Eleanor Barnett, food historian at Cardiff University in Wales and author of *Leftovers: A History of Food Waste and Preservation*.

During the Industrial Revolution, the newly invented tin can was both lifesaving (especially for sailors plagued by scurvy, a disease linked to vitamin deficiency), Barnett says, but also a source of suspicion. "For many of the public it was a scary futuristic technology that threatened supposedly healthier and more wholesome traditional methods of eating and preserving food," she says.



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3D printed vegetable meat steak from Spanish company Novameat.

Pineapple mania

Adopting new foods can also be a way of marking one's social status. "Food is an identity-maker, and is tied into class. Eating a wide variety of food is a badge of status that indicates the person is educated, well-travelled, and open-minded," says food historian Annie Gray. Pineapples, for example, were a huge hit when they were introduced to Europe. They were initially very expensive, which added associations of privilege and status. "They would become so popular, a symbol of wealth and the exotic, that the 18th century witnessed "pineapple mania," says Barnett.

For food of the future to be embraced, it seems it will need to resemble foods we already know. For example, Indian food, tea, coffee and chocolate all became acceptable in the United Kingdom because they were anglicized, says Barnett. "In its original form, chocolate was ground up, thickened with cornflour, mixed with water and chilli and drunk cold. But when it came to Britain, it morphed into a warm drink like tea and coffee," she says.

"Frankenmeat"

After all, food is not just about nutrition, it's also about representation. "When you embrace a new food, you also embrace different systems of production and the many meanings attached to that. I don't think we can yet imagine eating lab-based meat if we keep calling it 'frankenmeat'," food historian Alessandra Pino, researcher at University of Catania (Italy) says, referring to a nickname often given to lab-based meat in articles.

Food is also an emotional matter, Pino adds. "Most food we love is associated with memories, and a lot is attached to storytelling. We don't have many stories about microalgae, yet," she says.

> **"In 1628, an Italian physician described tomatoes as "strange and horrible things"**

Using the right language goes a long way to persuading people to eat new foods, argues Gaye. The word "lab", for example, does lab-grown meat no favours, she says, but other "unnatural" food without this label often go unquestioned. "People don't like the idea of food not seeming natural, and they don't like the idea of other people playing god – but seedless grapes are genetically modified, and rainbow trout is manmade".

When it comes to new food, our ancestors were right to be hesitant. Neophobia – fearing something new – is often associated with safety. But this suspicion is arguably less useful for populations with access to clean and safe food.

No one can predict with 100 per cent certainty what our diets will consist of in decades to come, or how receptive we'll be to any newcomers. One thing is for sure – we will no doubt continue to fantasize about what the future of food will look like. After all, our imaginations will never lose their appetites. ■

Interview by
Agnès Bardon
UNESCO

Two chefs come together for a good cause

A sense of responsibility, a burst of creativity, and a desire to harness gastronomy to promote a greener world. These are some of the driving forces behind Michelin-starred chefs Mauro Colagreco, chef at Mirazur in Menton (France), and Daniel Humm, chef at Eleven Madison Park in New York (United States). As UNESCO Goodwill Ambassadors they raise awareness about the considerable impact our food choices have on our health and that of the planet.

As chefs, both of you are committed to promoting sustainable food practices in your own unique ways, whether it is vegan cuisine at Eleven Madison Park or local and seasonal products at Mirazur. How did you come to realize that what we eat has a direct impact on the protection of the planet?

Mauro Colagreco: Common sense. Everything shows that our food systems impact our planet and our health – through agriculture, livestock farming, fishing, factories, waste, pollution… It is up to us to change the model. Our food is a powerful vector that can now be part of the solution.

This is what we demonstrate at Mirazur, where societal commitment is very strong through a more circular gastronomy. Over two decades, our cuisine has transformed the restaurant into an agricultural project, connected to the land and engaged in the preservation of local, sometimes endangered varieties. We no longer use single-use plastic, which has profoundly changed the way we work. Ultimately, we want to raise awareness that by choosing what we eat, we choose the world we want to live in.

> “By choosing what we eat, we choose the world we want to live in

Daniel Humm: I had been observing issues with our food system for many years, as I watched the quality and availability of certain ingredients decline, but I think the idea really sunk in for me during the COVID-19 pandemic – particularly in terms of how our industry could make a tangible impact. With Eleven Madison Park closed, we had an opportunity to pause and reimagine what our menu looked like, and what we wanted to stand for as a business.

While I'm not vegan (or even 'anti-meat') in my personal life or culinary philosophy, I do know that industrial livestock farming is a significant contributor to climate change and biodiversity loss. As a society, this means that we must adjust and re-prioritize our relationship with meat. In a way, I see restaurants like Mirazur and Eleven Madison Park as leading the way for the high-end food world to eventually make its way to the mainstream – and so we have a responsibility to push forward our ideas in their purest form. For us, this meant creating a fine dining menu that was entirely plant-based.

Does awareness of this issue seem to be increasing? What can we do to develop education on responsible eating?

Mauro Colagreco: Mindsets are evolving, and it is becoming increasingly clear to everyone that we must adopt more responsible eating habits. The real challenge is to engage all stakeholders across the value chain, beyond individual economic interests. As chefs, our role is to educate, train, and inform by all possible means – whether it be children, young chefs, guests, partners, institutions…

Today, chefs have become key figures, and we must lead by example so that society understands the impact of our food choices. We need to communicate about seasonality, different production methods, and the necessity of more responsible consumption in general. Especially since change is easier than it seems. For example, we can teach children about the freshness and ripeness of ingredients by cooking with them at home. This cultural transmission is of great importance. Cooking must remain a cultural heritage passed down from generation to generation, teaching people how to become conscious consumers.

© Jovani Demetrie

In January 2024, Mauro Colagreco and Daniel Humm co-organized a public dinner at the Eleven Madison Park restaurant in New York to promote sustainable culinary practices.

This is precisely the educational program we are developing following the appeal I made at the Conference in Cali (Colombia) on biological diversity (COP16) convened last autumn – to support younger generations throughout their schooling, so they can make informed choices. We are currently launching a pilot program, Seeds For the Future, in collaboration with UNESCO's Man and the Biosphere program, to provide schools and educational centres with the necessary tools to achieve this goal.

Daniel Humm: Responsible eating has definitely become more of a conversation topic, but we still have a long way to go. For some reason, what and how we eat has become politicized in a strange way, especially in discussions around plant-based cooking. If we are going to make progress, we need to approach both the problems and the solutions as universal, because they are. Everybody has the right to nutritious food, and all people will be affected by our changing climate.

Day to day, the actions that we can take are quite straightforward, and even small changes can make a big difference – whether that's choosing to eat one plant-based meal each day, incorporating more seasonal ingredients in your cooking, or choosing to buy local products when you shop.

In many places around the world, people have been eating responsibly for thousands of years, with regenerative farming practices and cuisines that are inherently plant-forward, so I think it's important to look to these food cultures as part of the learning process.

As much as it's important to innovate, exploring new ingredients and technologies (like fermenting microalgae for cooking oil), I have found so much inspiration in my recent travels to Greece, India, and Japan, where the foundations of the cuisines are shaped around the local environments.

> **"The more we can show that responsible eating is easy to put into practice, the more people will make positive choices**

Can social media campaigns be a way to raise awareness?

Mauro Colagreco: I believe that many things have already changed thanks to social media. It is the most accessible way to reach a wide audience and using it to promote responsible eating would be a great opportunity. The real question, then, is how to make our message more impactful in order to positively and responsibly encourage a generation that is often overwhelmed by an excess of contradictory information.

Daniel Humm: Definitely. Whether we like it or not, this is how most of the world gets information these days. The more that we can show how responsible eating is delicious, easy, and part of our own lives as chefs, the more other people will begin to make positive choices in theirs.

Last January, you co-organized a public dinner consisting of plant-based dishes. What was the purpose of this initiative?

Mauro Colagreco: With Daniel, we had long wanted to collaborate again. He is a longtime friend, and we share a deep commitment to more responsible food practices. I admire his work, and together, we showcase that there are always alternative ways to nourish our planet better. The idea behind these meals was to highlight that biodiversity starts on our plates!

Daniel Humm: Mauro and I share a lot when it comes to our culinary philosophies, and I'm very inspired by everything that Mauro has been doing at Mirazur. In a lot of ways, our restaurants have been on parallel journeys, and this January felt like the perfect time to bring them together. Last year, I was honoured to join Mauro as a UNESCO Goodwill Ambassador, so this collaboration was an opportunity to shine a light on UNESCO's mission as well as the amazing potential for plant-based fine dining.

Mauro Colagreco, you were part of the UNESCO delegation at COP16 in Colombia in October 2024. What are your main takeaways from this experience?

COP16 was a fantastic and deeply enriching experience! We organized a responsible dinner to raise awareness about the importance of preserving biodiversity and local culinary heritage. I spoke during World Food Day to reaffirm that a more respectful gastronomy can feed a growing population without depleting the planet. By changing the way we produce our food, we transform our diets, our society, and ultimately, our values.

This incredible platform also allowed me to launch a call for concrete action to create a global educational program, Seeds for the Future that I mentioned

© Ye Fan

Daniel Humm speaks with students at the UNESCO Champlain-Adirondack Biosphere Reserve in the northeastern United States to raise awareness of sustainable food practices.

© Matteo Carassale

Mauro Colagreco in the garden of his restaurant Mirazur in southern France.

earlier, in collaboration with a UNESCO French biosphere reserve with the aim of scaling it up internationally. Through a variety of educational tools, workshops, and hands-on activities, this program – hopefully – will help promote agricultural diversity, local and seasonal products, regenerative farming, sustainable fishing and raise awareness about food waste and plastic use in schools. By giving children the ability to make better food choices every day, we are turning them into guardians of biodiversity.

Daniel Humm, you initiated Rethink Food, an initiative that distributes meals to underprivileged people in New York. On a more global scale, how can we address food insecurity?

This is a huge question, and the solutions involve so many intersecting elements. Some of the areas that I see as most important, though, involve encouraging sustainable farming, supporting local agricultural economies, and preserving biodiversity and ancient cultural practices. This is why I've been so inspired by working with UNESCO and seeing the Man and Biosphere program – feeding the world requires helping communities to grow food and create industries in harmony with their local environments.

As Goodwill Ambassadors, how do you envisage your future engagement with UNESCO ?

Mauro Colagreco: I am deeply honoured by the role of UNESCO Goodwill Ambassador for Biodiversity, which fills me with hope and energy.

With Relais & Châteaux, the global hospitality association where I serve as vice president, we have committed to 12 sustainable development goals in partnership with UNESCO. We are also developing a pilot programme to turn chefs within our network into guardians of their local biodiversity by promoting the nearest biosphere reserves.

Finally, just a few kilometres from my restaurant Mirazur, in the town of Sospel, in the south of France, we are working on an ambitious project that will link food, agriculture, and education.

Being part of this action allows me to believe in a better future for our planet and our children.

> **“A more respectful gastronomy can feed a growing population without depleting the planet**

Daniel Humm: Promoting the release of the UNESCO Global Education Monitoring (GEM) Report in March 2025, focused on nutrition, was one of my recent engagements as UNESCO Goodwill Ambassador for Food Education.

I'm excited to visit and shed light on more of UNESCO's Biosphere and World Heritage sites. I also hope to gain and share more knowledge about how our everyday food choices can impact biodiversity preservation, curb climate change, and help sustain valuable cultural traditions.

I'm also pleased to participate in the UNESCO International Food Atlas project that showcases food's intrinsic links with Intangible Cultural Heritage.

Together with Mauro, we are supporting UNESCO's communication on biodiversity, and we both hope to take part in the upcoming COP Climate Summit in Belem, Brazil, in November 2025.

Last but not least, I will be launching a book for children, *Daniel's Dream*, because I feel strongly about transmitting my passion and values to the adults of tomorrow. ■

Paulina Vera Puz

Journalist in Santiago, Chile

Chile, pioneer of food labelling

Faced with one of the highest obesity rates in the world, Chile was the first country to pass a law on labelling foods high in ingredients harmful to health.

"High in saturated fats", "high in sodium", "high in sugar", "high in calories" – a series of dissuasive black, hexagonal labels on Chilean food products warn against the possible presence of ingredients considered to be bad for health.

Chile is the first country to have imposed this kind of labelling, thanks to pioneering legislation that has already inspired other countries, such as Argentina, Israel, Mexico, and Peru.

The law also prohibits advertising any product carrying these warning labels to children under the age of 14. It also outlaws certain commercial practices such as gifts, competitions, special offers, characters, stickers, or any other detail aimed at children, as well as the sale or free distribution in schools of products labelled in this way.

Difficult beginnings

Chile has one of the highest rates of obesity and excess weight in the world – 78 per cent of adults were affected in 2022, compared to 60 per cent worldwide and 67 per cent in the Americas, according to figures from the World Health Organization (WHO).

This is the context in which the country launched Law 20.606 on the nutritional composition of foods and their advertising, a process that started in the early 2000s.

The initial bill, presented in 2006, triggered an outcry from the agri-food sector. A long process of consultation involving all stakeholders was therefore initiated to allow everyone to have their say. The discussions continued for several years, and it was not until 2012 that the bill was adopted.

Industry unease

Throughout the process, discussions involving international experts, working groups, academics, and think-tanks were organized, with the aim of reaching a consensus.

> **"The sale of foods labelled as harmful is prohibited in schools**

At each of these stages, the agri-food industry insisted that labelling should be voluntary, levels should be more permissive for products containing harmful ingredients, and there should be greater discretion regarding labelling on packaging. Fear of a system that did not exist anywhere else led companies to argue that the individual should remain responsible for their food choices.

But the bill was based on solid technical foundations and supported by scientific research. In the end, the only concession made to industry was to grant companies more time, by implementing the law in three stages.

Focus on children

Today, Law 20.606 requires that a label be clearly displayed on packaging warning that the established limits for certain ingredients have been exceeded. It also prohibits advertising these products to children under 14 years of age, which has meant that certain products are no longer marketed in Chile.

Targeting products aimed at children is crucial, given that taste sensitivity first develops in childhood. Exposure to foods that are too fatty or too sweet "changes the pattern of eating behaviour at an early age and makes it difficult to correct later on," says Chilean Deputy Minister of Health, Andrea Albagli.

The school environment is the subject of the third element of this legislation, which prohibits the sale or free distribution in schools of foods labelled as harmful, a restriction that also has to apply to the state-run school food distribution programme.

Paradigm shift

The law on labelling has enabled a "paradigm shift", emphasises Camila Corvalán, a researcher at the Institute of Nutrition and Food Technology (INTA) in Santiago de Chile.

"For the first time it has been established that responsibility does

not lie with individuals but with their environment. This shift in the argument opens the way for an extremely important new approach to public nutrition policy," she adds.

In the meantime, some consumers have become familiarized with the labels and have learned how to use them. "When I do my shopping, I try to choose the foods with the fewest warnings," says Roberto, who has a teenage son, as he leaves a supermarket in the Ñuñoa district of Santiago de Chile. "The labels are very useful," adds Silvia outside the same shop. "It is important to me that the products don't contain saturated fats, especially when it comes to my daughter."

Several studies show a change in the foods on sale in Chile. "There has been a reduction in all the regulated ingredients in foods. The transformation is on a much larger scale than has been achieved by other policies," says Camila Corvalán. Products on the supermarket shelves are now generally lower in salt, sugar and fats.

The law is now widely respected, which is a victory for consumer health. But it does not cover new additives that have entered the composition of foods on sale in supermarkets. There has been an increase in calorie-free sweeteners, as well as other chemical additives that are used to improve the flavour, colour, stability or shelf-life of foods.

> **"Hexagonal labels in dissuasive black warn against possibly harmful ingredients**

"The use of these products is generally allowed, but the question is now whether they might cause metabolic disorders in the mid- or long term," emphasises Camila Corvalán. "It is a genuine concern," acknowledges Andrea Albagli. Which is why the regulations are currently under review.

In 2025, the law on food labelling in Chile will have been in force for nine years. Although at this stage there is no scientific evidence regarding its impact on levels of obesity, it has already managed to open consumers' eyes to the harmfulness of certain additives in ice cream and instant soups. And that's already a lot. ■

Lucia Iglesias Kuntz
UNESCO

Food and intangible heritage, a flavourful relationship

Some fifty traditional culinary practices are inscribed on UNESCO's lists of intangible cultural heritage.

No, the French baguette is not listed as intangible heritage, nor is couscous or Neapolitan pizza, despite what some online publications or social media may say. In fact, what distinguishes the lists of the intangible cultural heritage of humanity are not dishes, but cultural practices passed down from generation to generation, many of which are related to food and drink. Nor are they products, but the ways of cultivating, preparing or consuming them.

"Traditional culinary practices, whether related to everyday life or to special occasions, such as rituals or festive events, constitute an important part of intangible heritage throughout the world," explains Fumiko Ohinata, Secretary of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage. "The Convention lists can be seen as a recipe book, in which we can share everything, from starters to desserts – all kinds of dishes, drinks, breads... No fewer than fifty culinary practices are now inscribed and eight of them are multinational," she adds.

Culinary practices make up an increasingly important part of the lists of intangible heritage. They include such items as the art of the Neapolitan "Pizzaiuolo", the craftsmanship and culture of the French baguette and the traditions associated with the production and consumption of couscous, shared by Algeria, Mauritania, Morocco, and Tunisia. Other examples include the Mediterranean diet (Croatia, Cyprus, Greece, Italy, Morocco, Portugal, and Spain), traditional Mexican cuisine, the preparation and consumption of Peruvian ceviche, a marinated raw fish recipe, and Haitian *soupe joumou*.

Promoting sustainable food systems

Through its various networks and programs, UNESCO promotes sustainable food production systems, in particular by promoting biodiversity and preserving traditional knowledge for landscape management.

Several agro-pastoral landscapes are inscribed on the World Heritage List. From terraced fields with rice paddies and wine-growing areas to pasture and harvesting sites, they are essential to the livelihoods of local people and their access to clean water and food. For example, in Indonesia, the subak system in the Cultural Landscape of Bali Province, inscribed in 2012, ensures prolific rice production through democratic and egalitarian farming practices.

UNESCO also supports biodiversity conservation and sustainable development via the 213 Global Geoparks around the world as well as via the Man and the Biosphere (MAB) programme, launched in 1971. The World Network of Biosphere Reserves currently includes 759 reserves that serve as learning areas for sustainable development. To prevent the rapid degradation of soils – that support 95-98 per cent of the world's food supply – a pilot project was launched in summer 2024 for the sustainable management of soils and landscapes.

In addition to the establishment of a "world soil health index", the project aims to implement an assessment of the sustainable management of soils and landscapes in around ten biosphere reserve sites.

Resource for development

Beyond their cultural dimension, these practices also have in common the promotion of a varied diet that respects →

◥ *The knowledge, know-how and practices related to the production and consumption of couscous were inscribed on UNESCO's List of Intangible Cultural Heritage of Humanity in 2020.*

Preparation of Tomyum Kung, traditional prawn soup from Thailand, in Ayutthaya, north of Bangkok. Tomyum Kung was inscribed on the Representative List of the Intangible Cultural Heritage of Humanity in 2024.

© Gingthong Mahapornpaisan / Department of Cultural Promotion, Thailand, 2019

ecosystems and maintains genetic biodiversity. "Many culinary practices are based on respect for seasonality, the use of local products and the recycling of food leftovers. They are also opportunities for exchange, conversation and dialogue, thus reinforcing social cohesion," explains Pier Luigi Petrillo, director of the UNESCO Chair in Intangible Cultural Heritage at the Unitelma Sapienza University of Rome (Italy).

A study conducted by this Chair between 2018 and 2023 shows that, following the inscription of the art of the Neapolitan "Pizzaiuolo" on the Representative List of the Intangible Cultural Heritage of Humanity, pizza-making courses have increased by 65.3 per cent, and the number of accredited schools by 33.5 per cent (with 85 per cent of them outside of Italy).

Luis Benito García, professor of contemporary history at the University of Oviedo (Spain), believes that the inclusion of Asturian cider culture on the Representative List is likely to "promote its integration at all levels of education. Furthermore, as it is linked to a production sector, it should facilitate its development through the planting of apple trees, which can retain a young rural population, and protect a sustainable, artisanal and family industry".

> **"Many culinary practices are based on respect for seasonality and the use of local products**

UNESCO is also currently working on an International Food Atlas and a digital platform to safeguard, promote and transmit foodways to future generations. This project, funded by Saudi Arabia, aims to highlight the diversity of food practices as living heritage and their links to sustainable development, by sharing examples of safeguarding from communities and countries around the world. It should be available by the end of 2026.

As anthropologist Miguel Hernández puts it, "culinary practices combine history, memory, management of the environment, cultural exchanges, the economy, gender roles and particular tastes, which allows us to think of intangible cultural heritage as a resource for development that can enable communities to be resilient in the face of the challenges of globalization and climate change". ■

Raphaëlle Maruchitch

Freelance journalist in Nova Scotia, Canada

In Canada, the revival of Indigenous cuisine

Projects led by First Nations communities in Canada seek to revive ancient practices and recipes that respect the sacred dimension of food and are more sustainable. Among them are the Mi'kmaq of Nova Scotia.

"Winter is when I feel the most alive", smiles Joef while putting his bare hands in the freezing water of the Bras d'Or Lake. Yet, it feels like -15°C on this day of February 2025 on Cape Breton Island in Nova Scotia, Eastern Canada. Joef is Mi'kmaw, the people native to the areas of Canada's Atlantic Provinces.

On this day, he wants to catch a beaver for his sister. "She is planning a big mid-winter feast," he explains. Joef is out trapping every day. More than a hobby, harvesting wild food (geese, deer, moose, eel, salmon, berries, plants) is the traditional way of living for native people.

"For us, food is sacred, at the centre of our culture," Joef explains. "It's a vessel for spirituality and celebrations. Once you catch the animal, you thank and acknowledge the spirit of the land. You're reminded of the sacrifice, that's why you will utilize as much as possible of the creature: the meat will be eaten, the pelt used for clothing, etc." Indeed, this traditional food system ensures food security not only for Joef and his family, but also for other members of his community. "I don't like to stock up, so I keep enough meat for a meal and give away the rest," he explains.

Joef learned how to harvest in the wild from his father. His six-year-old son plays in the snow, absorbing his dad's knowledge and language, helping at times set the trap. But when it comes to the rest of his community, Joef deplores the extent of the damage: "Natives' poverty rate is above average in the country mostly because we don't know how to use the land anymore." A range of community-led projects are emerging across Canada to inverse the trend.

Back to the roots

The term "food sovereignty" was first coined in 1996 by the international movement La Via Campesina, which defends peasant agriculture and stands for the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.

> **"For us, food is sacred, at the centre of our culture**

In Canada, a large part of ancestral knowledge and languages were lost following colonization. Bamidele Adekunle, researcher at the University of Guelph in Ontario, has been working on access to cultural food for urban Indigenous people. He identifies several factors that have led to the disappearance of indigenous food sovereignty: migration, capitalism, and lack of confidence of native people in the value of their skills. "It is linked to health, rituals, sense of belonging and sense of community. When food is compromised, you lose all of this," he says. In the absence of traditional foods, Indigenous populations are turning to processed foods. "One way to achieve food sovereignty in cities would be to give communities support to grow Indigenous food on their own plots or re-skilling the younger generations through programs."

The Mohawk seedkeeper

First Nations communities traditionally excel in so-called companion planting, where plants are paired in a mutually beneficial way, producing more than when cultivated separately. For example, corn can be associated with climbing bean and squash. The bean plant can climb around the cob whereas the squash covers the ground and keeps it moist and free of weeds.

"Traditional gardens are part of Indigenous culture," explains Chief Stephen Silverbear McComber, a seedkeeper who belongs to the Mohawk →

Nation and has been growing seeds since he was a boy, working with his grandparents in the garden.

He keeps acquiring and selecting seeds, trading between tribes, handing traditional varieties of bean, squash, corn, sunflower, and tobacco for families to grow. According to Silverbear, farming is also associated with rituals: "Seeds are alive, it's all connected to the Universe. Planting ceremonies ensure good luck, and we plant, harvest and even can according to the phases of the moon."

"Eating the right kind of food is survival," declares the Elder Anita Joseph. She was the liaison with the Elsipogtog First Nation community for the cookbook *Mitji-Let's Eat! Mi'kmaq Recipes from Sikniktuk*. Thanks to this initiative, Anita's recipe of a Mi'kmaw caviar that she grew up preparing with her aunt is now ensured not to be lost, as well as the language associated with it. Called *nijinjk*, Anita's recipe is based on salmon roe, served chilled as an appetizer with crackers. It can be accompanied by capers, dill sprigs and a sliver of preserved lemon. It's a beautiful example of the Mi'kmaq way, which is to eat all parts of the animal so nothing goes to waste.

Written by Margaret Augustine and Dr Lauren Beck, the book gathers 30 recipes from this Mi'kmaw territory located in New Brunswick: for example Qonesuwe, a stew with meat and potatoes or the Four Cents, a versatile fry bread close to a pancake. Ahead of the project, the authors got permission from the Elders and ensured that the book's intellectual property remains in the community, as well as royalties. "Cooking is a celebration of resilience. This book isn't a romanticization of Mi'kmaw food, we wrote about recipes that are currently prepared in the community," tells Margaret Augustine.

Community-based initiatives

Chelsey Purdy, dietitian and member of Wasoqopa'q First Nation, works with the Union of Nova Scotia Mi'kmaq, a well-connected tribal council that has for example been collaborating with the Confederacy of Mainland Mi'kmaq and Kejimkujik National Park: "Last year we hosted a *mawiomi* (gathering) in the park. We camped and hosted food related activities, with the participation of Mi'kmaw harvesters, caterers, food producers, and community members," notes Chelsey.

> **"We plant, harvest and even can according to the phases of the moon**

This year, they hope to pilot their own food service at the event. "We are identifying plants we want to harvest this spring and summer that we can incorporate into the menu we offer at the event in the fall," adds Chelsey. To ensure proper identification and harvesting of the plants according to Mi'kmaw values, the union is leaning on the Nuji Kelo'toqatijik Earth Keepers, who are part

Nijinjk (salmon roe)

Serves 4

Preparation time:
2 hours, 10 minutes


© Lauren Beck

- 1/lb (225g) fresh or frozen salmon roe
- ¾ cup (175 ml) water
- salt and pepper, to taste
- 1 tbsp (15 ml) softened butter
- 1 small onion, sliced into rings

1. Preheat the oven to 250°F (120°C).
2. Place salmon eggs in a greased casserole dish. Gently pour water into the bottom of the dish. Sprinkle with salt and pepper.
3. Spread butter along the top of the salmon eggs and layer the onion on top.
4. Cover the casserole dish with foil or a lid and bake for 2 hours.
5. Serve chilled as a side with fresh tomatoes and cucumbers, or warm with roasted salmon, potatoes, and vegetables.

© Raphaëlle Maruchitch

◥ *Joef and his son, Indigenous Mi'kmaq people from Canada, set a beaver trap on Cape Breton Island in Nova Scotia.*

of a larger movement of Indigenous-led land conservation and protection across Canada.

Four hundred and fifty kilometres northeast, Joef the trapper is also an Earth Keeper, employed by the Unama'ki Institute of Natural Resources to share his deep knowledge of the land – for instance, observations on animal populations – and thus contribute to scientific research that supports land protection. As a result, it was decided not to allow moose hunting this winter, as the population was too small.

"Viewing food sovereignty through an Indigenous lens places the land at the centre, shifting our mindset to view our decisions in its timescale, rather than our human one. It also emphasizes community care, sharing, and local food networks – essential in a world of rising food costs and environmental threats," concludes Chelsey Purdy. Joef, seamlessly in tune with his wild environment, is a living example. "We have to constantly adapt," he says serenely. ■

Interview by
Anuliina Savolainen
UNESCO

Peter Singer: "Considering animals as commodities seems completely wrong to me"

Animals raised on factory farms often live in deplorable conditions. Knowing this doesn't stop us from eating meat. Why are we so indifferent to their suffering? Australian philosopher Peter Singer, one of the most influential intellectuals of his generation, has been addressing this blind spot in ethical thinking for more than fifty years. He has authored dozens of books, including *Animal Liberation*, a classic that continues to be a reference in the field of animal rights.

Best known for his work in bioethics and his role as one of the intellectual founders of the modern animal rights movement, Peter Singer is Ira W. DeCamp Professor of Bioethics, Emeritus, at Princeton University (United States) and visiting professor at the Centre for Biomedical Ethics, National University of Singapore. His many books include The Ethics of What We Eat, *and* The Life You Can Save: Acting Now to End World Poverty.

As a postgraduate philosophy student in the mid-1970s, you started writing about animal rights and ethical eating and have never stopped since. Can you pinpoint one decisive moment that triggered this?

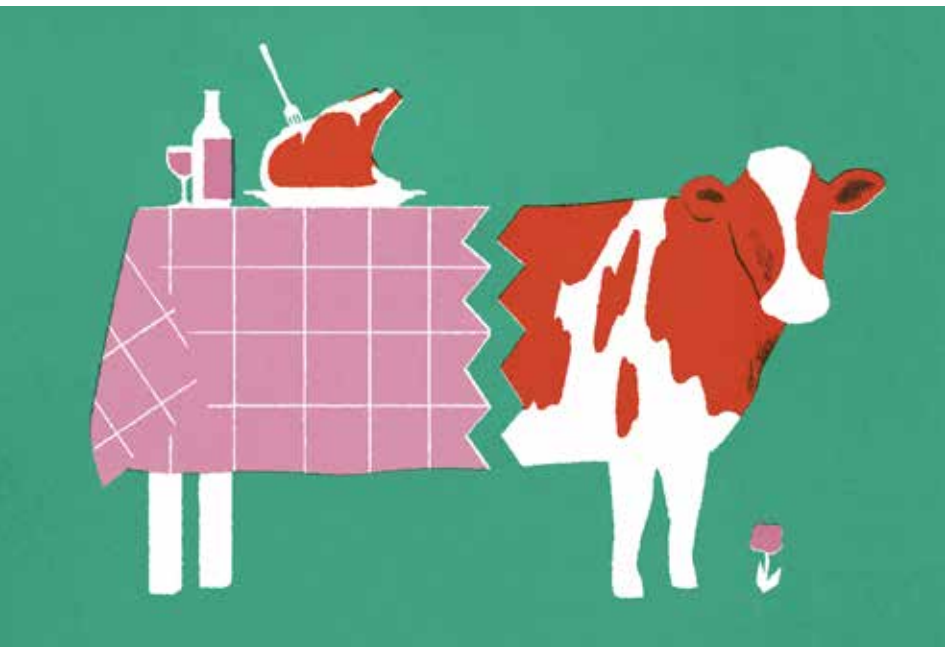
There was a very key moment that led to my new interest in the ethics of what we eat and that was having lunch with a Canadian graduate student called Richard Keshen. We were in a class together which had nothing to do with eating or animals – it was about freedom and responsibility. When we entered the dining hall at Balliol College at Oxford University (United Kingdom), there was a choice of either a vegetarian salad plate or spaghetti with a brown sauce over it, and Richard asked if the sauce had meat in it. When he was told it contained meat, he took the salad. This was in the 1970s, you didn't meet many vegetarians back then. He was the first person to get me to think about what I was eating and how the animals were treated.

I had assumed that the animals had reasonably good lives outside grazing in the fields, but Richard told me that many of them were indoors all their lives, in extremely crowded conditions, and that there was no concern for their welfare. The producers would do whatever would enable them to produce the animal product more cheaply, which meant that the lives of these animals were miserable. And that made me think about what would justify us treating animals in this way when we don't need to eat meat to survive.

In your book* Animal Liberation, *first published in 1975 and still available in an updated version called* Animal Liberation Now, *you argue that we have the moral obligation to consider the interest of animals, and therefore minimize the suffering of farmed animals. Why is that?

I don't treat killing lightly, but I think nevertheless that it's not really a question of whether it is wrong to kill an animal. But it's very hard in any way to defend inflicting a lot of suffering on animals just because we enjoy the taste of their flesh more than we enjoy the taste of some equally nutritious food available to us that didn't cause suffering. Animals are other sentient beings; we share the planet with them, and we bring them into existence, in enormous numbers now. And the question is, what sort of lives do we give them?

If we let cows graze in the fields, or chickens peck around outdoors, maybe that would be tolerable. But when you put



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them inside, in vast, crowded sheds, that in itself causes them stress. For instance, chickens normally live in small social groups where they can recognize every other bird. They know their place in the group, so aggression is rare. But if you put 20,000 birds in a shed, more aggression is likely to occur. They are also bred to put on weight extremely quickly, while their still immature bones are not able to bear that weight, which causes them pain. Producers make more money when their chickens grow faster. This well-documented evidence shows that we're not really concerned with their welfare. That whole attitude that animals are just commodities seems completely wrong to me.

Is your action driven by emotion or intellectual reasoning?

I think for me it's more an intellectual drive. When I first learned about the conditions in which we raise animals for food, I was already specializing in ethics, and so I started reading what some philosophers had said. But in this area, their reasoning was weak. It became obvious to me that this was just one of those moral blind spots. We know that the slave traders and the slave owners had a terrible moral blind spot about racism. Men in patriarchal societies had a blind spot about sexism. But many people still don't recognize this blind spot. I call it speciesism. We still accept the idea that our species somehow has the right to exploit members of other species in whatever way suits us. I think that in 50, 100 or 200 years, people will look back at our time and say, well, in some respects they were trying to live decent, ethical lives, but when it came to animals, what they did is just appalling.

> **"Speciesism consists of accepting the idea that our species somehow has the right to exploit members of other species**

Is the world today more receptive to the cause of farmed animal welfare?

I think it is. There is now a large animal rights movement and the conditions of animals have improved in many countries, especially in the European Union, but also in some of the states of the United States, that have passed better legislation, and some other countries are slowly moving towards better situations. But there are still countries where there aren't really any laws protecting the welfare of animals in factory farms.

Vegetarianism and veganism are gaining ground especially in affluent countries. However, meat consumption is on the rise globally. What would be the ethical solution here?

Meat consumption is on the rise globally partly because many countries are more prosperous today than fifty years ago. More people can afford meat. Of course, it's a good thing to lift people out of poverty and give them more choices, but it's unfortunate that this results in the purchase of products that involve such a lot of animal suffering.

Having more vegan options is an important improvement also for the planet because raising so many animals significantly contributes to climate change. We could easily decrease our greenhouse gas emissions by reducing the number of farmed animals. This would also allow us to reduce major public health risks caused by viruses that develop in factory-grown animals, such as the swine flu pandemic, or bird flu that has already spread to other animals and, in some cases, humans.

We have obesity in some parts of the world and hunger in others. Isn't this a huge moral failure?

Absolutely. The fact that there is still hunger on this planet is itself a moral failure because we have the resources to produce enough food for everybody. And in fact, one of the reasons why people are hungry is that vast amounts of grain and protein-rich soybeans are cultivated to feed animals. If we were to eat the grains and the soy directly, we would need less cropland to feed ourselves. The price of those crops could come down, and we could have surpluses to distribute where necessary – and thus have a more equitable distribution of food on the planet as well.

Could in-vitro produced meat be part of the solution?

Because it has proven so hard to get people to stop eating animal meat, solutions like cultured meat could be a way forward. But this option is still rare and rather expensive. So we're unfortunately still a long way from that kind of technology helping us to solve the food problems. ■

Interview by
Anuliina Savolainen
UNESCO

China: the story of a movable feast

Five thousand years of Chinese culture of food and drink are on display in the exhibition "A Movable Feast: The Culture of Food and Drink in China" in Hong Kong. Its lead curator, art historian Nicole Chiang, explains how ancient food vessels reveal social practices and rituals that continue to resonate today.

"Movable Feast", held at the Hong Kong Palace Museum (HKPM) from March 19 to June 18, 2025, traces the Chinese culinary evolution from Neolithic times to the Qing dynasty (1644-1911 AD). How did this exhibition come about?

My area of specialty is the art and material culture of China's Qing imperial court, and I was fascinated by the fact that the emperor did not have his meals at a specific place in the Forbidden City — wherever he was at mealtime, the imperial kitchen carried the food to him. It inspired me to explore the concept of movement and mobility in Chinese culinary traditions.

Hong Kong, as a vibrant melting pot where East meets West and an international culinary capital, is the perfect location for this exhibition, which brings together precious artefacts from the HKPM, the Palace Museum (Beijing, China), and other esteemed museums in Hong Kong and around the world.

What are the fundamental principles that define the Chinese culinary tradition, and how do they manifest themselves today?

In China, we could approach this question through the concept called *li* that is often translated as ritual, rite, or ceremony in English. *Li* governs proper behavior of all members of the society. And by setting various regulations through rituals and ceremonies, people's social status and corresponding duties and power were defined.

Many Chinese ritual vessels were related to food and drink. The first part of our exhibition features food and drink vessels from the Neolithic period to the Han dynasty (206 BC–220 AD). Two types of ritual vessels are on display: the *ding*, a vessel used for cooking meat already in the Bronze Age, and the *gui*, used to contain grains like rice or millet. The ruler, the Son of Heaven, could own nine *ding* and eight *gui*. Other members of the society could own different amounts of these vessels. This illustrates how food vessels were used to reinforce the regulations underlying Chinese society and to manifest social hierarchy. They are also symbols of power and authority and this still stands true today: there's a big *ding* vessel standing at the Great Hall of the People in Beijing which symbolizes that power belongs to the people.

Many ritual vessels were made to offer sacrifices to ancestors and communicate with the spirits. One of the bronze vessels on display, dating back to the Western Zhou dynasty (about 1100–771 BC), contains an inscription saying that the Marquis of Lu made the vessel to hold a specific type of alcohol for worshipping his father. Such objects tell us about how ancient Chinese tried to communicate with the deceased. Still today, people in China make offerings to ensure their late relatives have sufficient food and drink in the afterlife.

What are some examples of how cultural exchanges and movement of people have influenced Chinese cuisine through the centuries?

From the 2nd century BC to the 10th century AD trade between China and Central and West Asia became increasingly frequent. New ingredients and practices were introduced through the Silk Roads. Chinese silk, tea, and ceramics were widely sought-after and exported to Central and West Asia, even as far west as Europe.

> **"The imperial kitchen carried the food to the emperor, wherever he was at mealtimes**

Foods from Central Asia gradually entered China's Central Plains and were given names with the prefix *hu*, which means foreign, for example, *hujiao*

◥ *Detail from* A Night Banquet at the Peach and Plum Garden*, by Ding Guanpeng (active 1726–1770), Qing dynasty (1644–1911), preserved in the Beijing Palace Museum.*

(black pepper) and *hutao* (walnut). These names are still used today. With frequent contacts and exchanges along the Silk Routes, the culinary customs of the nomads influenced dietary practices in China. As an example, to accommodate flatbread introduced by nomads, large, footed platters emerged during the Tang dynasty (618–907 AD).

China's Intangible Cultural Heritage includes practices around traditional tea culture and the Spring festival celebrations. What do the objects from the past tell us about the evolution of these practices?

The transition around tea practices is reflected in the vessels from the past, from ladles from the Bronze Age to ewers from later times. *The Classic of Tea*, composed by Lu Yu in the 8th century, recommends cooking ground tea leaves with boiling water in a pot. The ladle was used to scoop water and to distribute tea. But in a later book called *The 16 Ways to Tea*, probably composed around the 10th century, tea preparation was described as pouring boiling water on ground leaves before whisking. The ewer, back then, was the new vessel introduced to China through the Silk Routes.

> **“With frequent contacts and exchanges along the Silk Routes, the culinary customs of the nomads influenced dietary practices in China**

Nowadays, during the Spring Festival, a celebration of traditional new year that falls on the first day of the Chinese calendar and involves a variety of social practices, Chinese families prepare sweets contained in trays or boxes with compartments. Picnicking at scenic spots is an important tradition in Chinese culture and in the past, such portable boxes were used to hold not only sweets but also savory dishes, often used at picnics. Larger versions with several layers and a handle were used as picnic sets. Dining on pleasure boats was a popular activity. During the Qing dynasty, these boats were often followed by another boat carrying food and beverages, called a “moving kitchen” or a “water banquet”. Dishes could also be carried to the pier in portable boxes by house servants or restaurants when the boat passed by.

From the 16th to the early 20th century, the imperial court used compartment boxes to serve different types of foods from dumplings to mooncakes. They would use them to serve dried fruit during the Spring festival as well as various ingredients that would be wrapped in a spring roll. With different types of sweets or ingredients displayed in a box, organized by compartments, the dish looks visually coherent, appealing, and abundant and I guess this is why compartment boxes and trays are still ideal today to be associated with the Spring Festival. ■

Emma Henderson

Freelance journalist based in London

Using AI to track down leftovers

To reduce food waste, catering kitchens and restaurants are using artificial intelligence (AI) to analyze the leftovers thrown into the garbage can. They can adapt their menus and purchase orders based on the data collected.

"It's so important for us chefs to know what's going in the bin. But it's not possible to keep track of everything, especially the weight," explains Vijay Nair, the associate director of culinary operations at the University of Guelph in Ontario, Canada. He is concerned about the issue of food waste, a challenge he faces every day.

And he's wise to be, in a context where 50 million tonnes of food is wasted in Canada every year. Globally, an estimated one-fifth of food produced for human consumption is lost or wasted, which equals one billion meals every single day, according to the UNEP Food Waste Index Report 2024.

The problem isn't only what actually goes into the bin though. There is also the issue of food loss in which deterioration or loss during transportation, lack of refrigeration, etc., prevents products from reaching our plates at all. Food loss and waste affect not only food prices, but also the energy used to grow, process, distribute and cook the food.

And it doesn't end there. Much of this wasted food ends up in landfill without the right conditions to properly decompose. Starved of oxygen, it rots anaerobically creating methane, which once in the atmosphere is 80 times more potent at warming than carbon dioxide.

Low-tech methods

Vijay Nair and his team had previously tracked food waste using time-consuming manual methods of using pen, paper and

Winnow, an AI tool developed in the UK, analyzes food waste using a camera installed above a bin.

spreadsheets. But since November in one of the university's prep kitchens he's been using software by Winnow, a British AI solution company that uses data analysis to reduce food waste in commercial kitchens.

The tool, born from the idea that food is simply too valuable to waste, is currently used in more than 40 universities around the world. It consists of a small terminal with a camera inside that's fitted over a normal kitchen bin and has a set of scales beneath it.

> **An estimated one-fifth of food produced for human consumption is lost or wasted**

Thanks to the data provided by AI, kitchen managers can anticipate and adapt their purchase orders and menus. "Considering that, by value, nearly 70 per cent of wasted food is wasted before it gets to the customer or the student, this is crucial," says David Jackson, director of marketing and public affairs at Winnow. The company aims to cut food waste in half in 12 to 24 months.

Identifying the causes

Using "computer vision tech, which is the same tech found in driverless cars," says David Jackson, the AI can identify and analyse more than 1,000 different food items. Since there aren't many photos of food in bins on the internet, the team had to create the images themselves to train the AI model.

Once food is put into a bin, a photo is taken to identify it, then it is weighed and the system assigns a monetary value to it, allowing chefs to identify the most important sources of food waste.

The data collected showed Vijay Nair that the residues of certain vegetables were massively discarded – for instance, 14 kilograms of broccoli cores were thrown away every two days. This realization encouraged his team to find ways to reuse them. Today the cores are grated and used to make vegetable fritters.

© Silo

Thanks to an AI-assisted leftover fermentation programme, Silo, a restaurant in London, has almost completely eliminated food waste.

Programmed fermentation

Catering services aren't the only ones looking to reduce the amount of food waste they generate. Some other food establishments have also begun to use AI, notably to better master the fermentation process of leftovers. This is the case of Silo, a restaurant in East London, renowned for its zero waste policy. "Using such a tool allows us to streamline and refine our approach to surplus ingredient utilisation.

> **AI assigns a monetary value to wasted food**

This enables us to analyse and predict outcomes more efficiently, particularly in long-term fermentations. We can reduce waste by optimizing how we repurpose ingredients," says Ryan Walker, head of fermentation at Silo.

He worked together with the owner of Silo, Douglas McMaster, to put in place an in-house fermentation program with the help of the ChatGPT AI model. It proved to be so successful – reducing the 10-15 per cent of food composted down to less than 1 per cent – that they opened a "fermentation factory" in a small building near the restaurant. Here they're further reducing waste by "converting surplus ingredients into high-value food products," explains Ryan Walker. They're using often-thrown away items such as meat trims and egg whites and turn them into *koji* (an ancient Japanese starter culture), which is used in fermentation to make *garum* (fermented fish sauce) and fermented miso soybean paste.

Building on their success, they plan to expand the scheme to repurpose food waste in the same way from nearby businesses, such as coffee grounds from cafes, spent beer grain from breweries and bread from bakeries.

If rolled out more widely across the hospitality sector, this pioneering solution could greatly contribute to reducing the amount of food waste. Ryan Walker believes that this is only the beginning. "We've only scratched the surface of its potential." ■

Sophie Douce

Journalist in Dakar, Senegal

In Dakar, street food is levelling up

The residents of Senegal's capital did not wait for street food to be trendy to adopt *tangana*, informal canteens that offer, at any time of day, snacks and dishes as tasty as they are cheap.

In Dakar, street stalls offer fast, affordable food.

Under a makeshift tent made of sheet metal and dusty tarpaulins, Omar Diop bustles around his steaming hotplate. He cuts a baguette in half, cooks an omelette, warms up some potatoes, adds chili. All in one minute flat. It's almost noon and the line is getting longer. In the heart of Dakar's historic district, everyone knows him by "Omzo", his nickname, the king of sandwiches. "Omelette bread", with cowpeas, green peas or liver: Omar Diop composes his homemade recipes according to his inspiration.

"It's the best! It's clean, substantial and cheap," sums up Bassirou Thioune, a 24-year-old student who never misses his morning *café touba*, the Senegalese coffee drink mixed with Guinea pepper, nor his sandwich for "11 o'clock break" before returning to class next door.

Teachers and students, workers and executives alike crowd around the eatery. "All social classes eat here, it's like a family," says Paul Gomis. The insurance company employee works in the neighborhood and does not have time to go home for lunch in the suburbs, 25 kilometres away.

Jay taabal culture

While street food has enjoyed worldwide popularity in recent years, the culture of *jay taabal* (table service, in Wolof) is deeply rooted in Senegal, where many people make a living in this informal sector. In Dakar, street food has long been a part of everyday life for the city's approximately four million inhabitants, or a quarter of Senegal's population.

True, in this country where the average monthly salary is around 120,000 CFA francs (€180), the stalls offer fast, filling and inexpensive food. According to a study published in 2021 by the Laboratoire de recherches sur les transformations économiques et sociales (Laboratory for Research on Economic and Social Transformations), which is part of the Université Cheik Anta Diop in Dakar, 50 per cent of Dakar residents' meals are eaten outside the home.

Over the last few decades, the phenomenon has increased with the evolution of lifestyles and the introduction of the continuous workday in offices. "Traditionally, Senegalese people eat every meal with the family and from the same dish, but this custom is tending to disappear as people move to the cities, into smaller apartments, and eating habits become more individualized," explains Moustapha Sèye, a socio-anthropologist and researcher at the Institut fondamental d'Afrique Noire in Dakar.

Fritters and flambéed skewers

Sweet fritters, accras, meat fatayas, or grilled peanuts: there is something for everyone in these canteens at any time of day. At afternoon snack time, vendors' pots simmer on every street corner and outside schools. In the evening, the Hausa *dibiteries* take over and flambé their meat skewers coated in peanut and chili powder, a Nigerian specialty. Dakar's street food – offering shawarmas imported by the Lebanese community, Cape Verdean pastries and spring rolls – is rich and multicultural.

Over the last few decades, the capital has also seen the proliferation of fast food outlets, favoured by more and more young people, to the detriment of traditional rice and millet. But the *tangana*, the street canteens, are putting up resistance. A few steps from the Kermel market, in a circular wrought-iron hall dating from the colonial era, dozens of customers eat seated in tight rows on benches.

> **"Dakar street food is rich and multicultural**

Since 1986, the women of the Ndiaye family have been passing on their recipes from generation to generation. On the menu, as every Thursday: *soupou kandja*, a stew with okra, and *thiéboudiène* (or *ceebu jën*), a dish made with rice, fish and vegetables that has been on the UNESCO Representative List of the Intangible Cultural Heritage since 2021. "My mother taught me how to make it when I was ten," says one of the cooks. Next to her, her sons bring two large bowls of rice and her 65-year-old grandmother tends the *ataya*, the Senegalese mint tea.

"We grew up eating these dishes every day, they're better than burgers. There are vegetables and fresh fish and above all, they're prepared with love," declares Sami Diouf, an accountant, as he devours his meal, priced at 1,200 CFA francs (€1.70). For some 30 years, chef Tamsir Ndir has been fighting to protect and promote Senegal's culinary heritage. This defender of local products founded the Senegal Street Food Festival in 2019. His objective: "To restore the reputation of street food and of the forgotten workers who feed millions of Senegalese every day." ■

Daniel Newman

Chair of Arabic Studies at the University of Durham (UK), he specializes in medieval Arab culinary history. His books include The Sultan's Feast: A Fifteenth-Century Egyptian Cookbook *(2020) and* The Exile's Cookbook: Medieval Gastronomic Treasures from al-Andalus and North Africa *(2023).*

A thousand and one ingredients: medieval Arab cuisine's rich heritage

As the central hub of a vast network of civilizations, the medieval Muslim-Arab world left a legacy of recipes and cooking techniques that continue to impact global food traditions today.

Spanning over six hundred years (9th-15th centuries), the medieval Arab culinary tradition was the richest and most diverse in the world, as evidenced by medieval cookbooks which contain close to 4,500 recipes from across the Islamic world – from Muslim-controlled Spain (known as al-Andalus in Arabic), to North Africa, Egypt, Syria and Iraq.

The huge body of culinary literature is all the more extraordinary since it was only preceded by one Roman cookery book from the 4th century, and a handful of recipes from ancient Mesopotamia. While there is evidence of a gastronomic culture elsewhere, such as ancient Greece, no recipe collections have survived.

The mobility of ingredients in the medieval Arab world was the result of the expansion of the Islamic world and the concomitant growth in trade routes spanning the Mediterranean, the Indian Ocean, and the Silk Road. Arab merchants acted as intermediaries, bringing exotic spices and fruits from East Asia and introducing them to the Middle East, North Africa and Europe. From within the Muslim empire, pomegranates, rice, and roses arrived from Persia; saffron and olive oil from North Africa; melons from Samarkand; pistachios, quince and leeks from Syria. Cinnamon, cassia, nutmeg, and cloves were sourced from India, sandalwood and camphor from Vietnam, and musk and silk from China.

From *sikbaj* to *ceviche*

After the fall of the Sasanian empire (the last Persian imperial dynasty) in the 7th century CE, the Arab Muslim conquerors adopted some of its courtly etiquette, including the sophisticated cuisine – both ingredients and dishes, most notably the sweet-and-sour stews. One of the most popular dishes from the 8th century onwards was called *sikbaj* (a Persian word meaning "vinegar stew"), which is no longer part of the modern Arab culinary repertoire but has survived in the Spanish *escabeche* and travelled to Latin American through the Spanish colonial Empire (16th century onwards) and re-emerged as *ceviche*. Early Abbasid cuisine (9th century) mediated another Persian dish, called *lakhsha*, which may well lay claim to being the oldest pasta recipe as it requires cooking dough in a broth.

The Turkic and Mongol migrations between the 11th and 14th centuries introduced various dough- and yoghurt-based dishes to Arab cuisines across the region. Examples of how global influences were absorbed and reinterpreted include *kumaj*, a thick flatbread, or *jajaq*, a yoghurt dish with herbs, which is the ancestor of the modern Greek tzatziki and the Turkish *cacık*. From the Muslim West came the Berber speciality couscous, which already spread to the Near East by the 13th century. Its popularity clearly continued to grow over the centuries as a 17th-century Ottoman traveller to Egypt reported that it was one of their staple dishes.

> **"The Berber speciality couscous spread from the Muslim West to the Near East by the 13th century**

Pool of recipes

Some influences go back much further, as in the case of the most frequently used fermented condiment in medieval Arabic recipes, *murri*, which was made from rotted cereal or, less

© Source gallica.bnf.fr / BnF

Detail of a painting depicting a meal during the Abbasid dynasty (750-1258) from the 11th-century manuscript al-Harīrī's Maqāmat, *copied and illustrated by painter and calligrapher al-Wasiti in 1236-1237.*

> **The quintessentially British fish and chips can be traced back to a very similar 13th-century Andalusi recipe**

frequently, fish, and was a descendant of garum, the fermented fish sauce used in Greco-Roman cuisine. The taste and use of *murri* are not dissimilar to those of our modern soya sauce.

The literature shows a remarkably stable pool of recipes across the Arab-Muslim world, some of which are still enjoyed today in many Arabic-speaking countries, such as shish *barak* (meat dumplings in a yoghurt stew), *mulukhiyya* (jew's mallow stew), samosas, or *qatayif* (filled crepes). The texts reveal overlapping influences, with dishes appearing in multiple traditions but incorporating regional adaptations. Local preferences and the availability of ingredients explains, for instance, why only Andalusi sources have recipes for rabbits as they were indigenous in the region, but fewer with rice since this was only cultivated in the Valencia area. Naturally, the emergence of regional cuisines also resulted in the creation of new dishes, such as the Andalusi *mujabbana*, a fried cheese fritter.

Taste for the sweet and savoury

Very early on, Arab culinary ingredients, recipes and techniques spread to Europe through three main routes: Muslim Spain, Sicily (under Muslim rule from the early 9th century until the middle of the 11th), and the Crusades. Ingredients such as sugar, rice, almonds, cinnamon, saffron, ginger, cloves, lemons, and sour oranges were originally introduced by the Arabs.

Their predilection for sweet-and-savoury dishes and the abundant use of spices was copied in European cuisines and was a crucial feature of what has been termed *le goût medieval* ("the medieval taste"), which was exported at the other end of the world, to Mughal India in the 16th century. The medieval European staple blancmange, a rice pudding with meat, was, actually, the Arabs' *muhallabiyya*. The present-day blancmange (associated with British cuisine) and *muhallabiyya* are made without meat, with the closest descendant of the medieval original being the Turkish *tavuk göğsü* pudding.

Unsurprisingly, the Andalusi culinary tradition left a lasting impact on Spanish cuisine and food terminology. The Spanish meatballs, or *albóndigas*, get their name from the Arabic word *al-bunduqa* ("the hazelnut"), in reference to the original size of the meat. With the expansion of the Spanish empire, many of the Arab dishes also travelled to the New World, further undergoing changes, and so the Mexican *albóndigas* became a meatball soup.

The metamorphosis of *murri*

Even the fried fish in the quintessentially British classic fish and chips can be traced back to a very similar 13th-century Andalusi recipe for a battered fish coated with flour, breadcrumbs and spices before being fried. And it was even served with a vinegar-based sauce (added with olive oil and *murri*). Some three centuries later, this method of frying fish was imported into England by Sephardic Jewish immigrants from the Iberian Peninsula.

These are just some of the many examples showing the pivotal role played by the medieval Arab world in shaping gastronomy. Through trade, conquests, and cultural exchanges, Arab cuisine influenced the Mediterranean, European, and South Asian culinary traditions. The use of spices, sugar, and almonds – hallmarks of Arab cooking – remain integral to global cuisine today. ■

Photos:
Saul Leiter Foundation

Text:
Agnès Bardon,
UNESCO

Saul Leiter, the master of colour

Saul Leiter (1923-2013) never sought to conquer the world. In fact, he spent most of his life in an apartment in the East Village in New York. He enjoyed staying at home, painting and drinking coffee. Despite his disdain for the ambitious, he left behind a body of work that makes him one of the major figures in American photography.

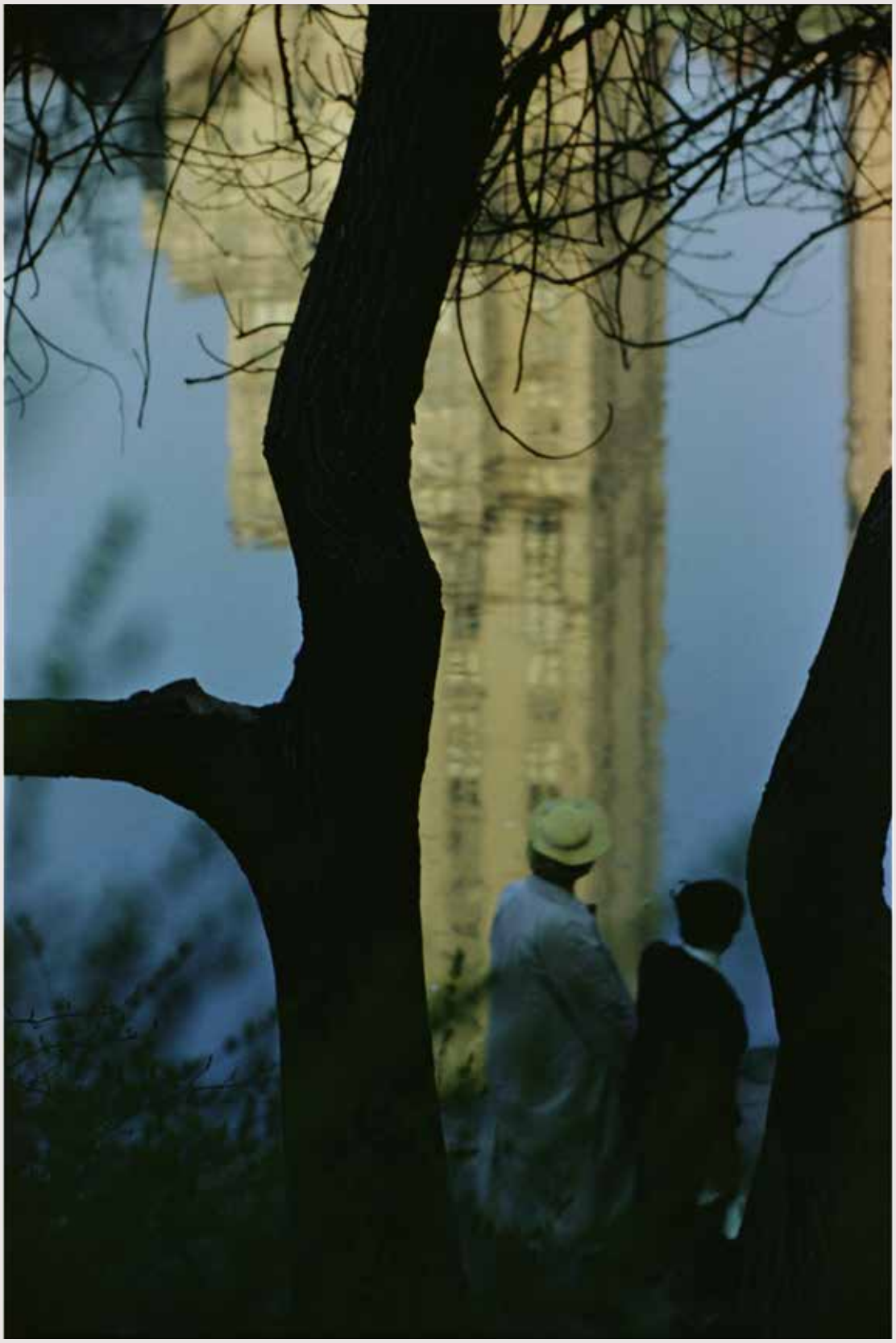
Saul Leiter was a lone rider, a man who refused to conform to any category or follow paths mapped out by others. He came to art through painting, a practice he pursued for the rest of his life, and eventually made a name for himself as a fashion photographer, notably for the American magazines *Esquire* and *Harper's Bazaar*. He became a pioneer of colour photography at a time when newsrooms and museums swore by black-and-white aesthetics only, considering colour as vulgar and reserved for advertising.

The pictures he took in his neighbourhood and on his travels, in cities such as Paris, do not follow classic street photography style. A sense of elusion pervades here. His audacious framing creates disorienting compositions of ordinary scenes. A pond in Central Park and shop displays become the pretext for a play of mirrors that hints at an intriguing presence beyond what is visible. The faces are captured disappearing into shadows, blurred by mist or seized from such a distance that the essential is never forgotten: the pulsating city around them.

Saul Leiter didn't want to conquer the world. Nevertheless, he is celebrated today as the master of colour, exhibited at many great institutions and cited as a main influence by a number of photographers and filmmakers. A kind of legacy that would undoubtedly have made him want to just go home, to paint and drink coffee. ■

Canopy, *1958.*

Hanging Butterflies, *1960s.*



A pond in Central Park.

Taxi, *1957*.

Reflection variant, *1958*.

Red Curtain, *1956.*

Paris, *1959.*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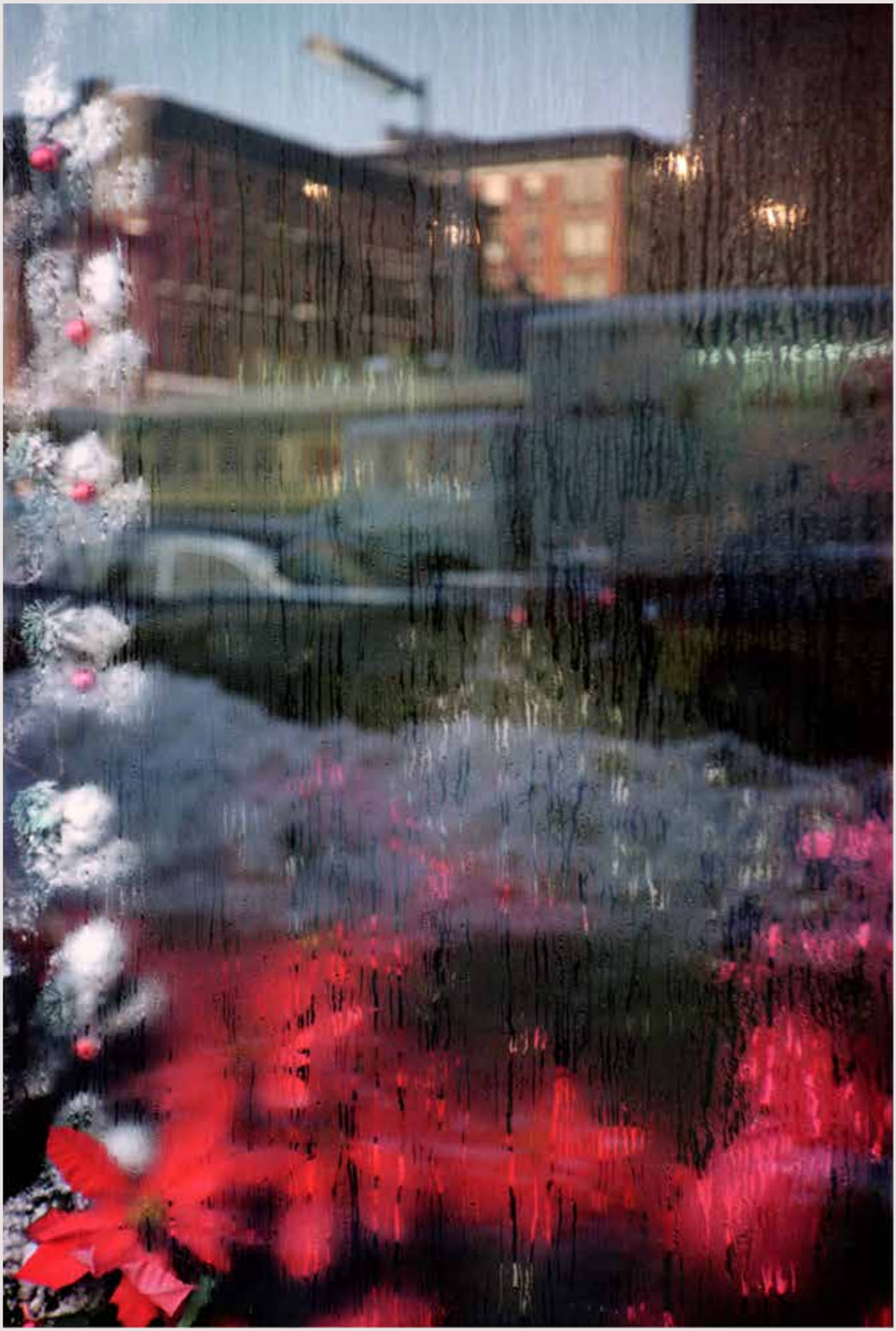
Phone Call, *1957.*

Blue Skirt, *1950s.*



Christmas, *1950s.*

Michael Pardo

Postdoctoral researcher, K. Lisa Yang Center for Conservation Bioacoustics, Cornell Lab of Ornithology, USA

Do you speak animal?

It has been demonstrated by numerous studies that animals communicate with one another. But is their communication sophisticated enough to call it a language, and if so, could we understand it one day? Their signals may someday be analyzed using artificial intelligence (AI). The use of machine learning tools has already led to the discovery that elephants call each other by name, and that whales communicate in a complex way.

In 2023-2024, I spent over 14 months bouncing around the Kenyan savannah in a Toyota Landcruiser, clutching a microphone reminiscent of a furry blimp. I had a hypothesis that elephants have names for each other, and I was trying to get the data to test it. Fortunately, the elephants were well-accustomed to researchers and allowed me to get close enough to obtain recordings of their deep, rumbling calls.

There is nothing quite like the thrill of watching wild elephants up close, but it was nearly equaled by my excitement when I analyzed my recordings and found that calls addressed to different individuals were acoustically distinct. Moreover, when I played some calls back to the elephants, they responded more to calls that were originally addressed to them, further supporting the conclusion that these calls contain a name-like component.

When my colleagues and I published this study, it ignited a firestorm of media attention. Part of the appeal was undoubtedly elephants' inherent charisma. In addition, the timing was right: there was a surge of interest in how nonhuman animals communicate. In past decades, scientists attempted to teach human language to apes and parrots with mixed success, but, recently, some have suggested that we could use AI to talk to animals in their own language. Of course, this presumes that nonhuman animals have a language in the first place.

> **"Japanese tits combine meaningful calls into phrases in a specific order**

Communication vs. language

Animals certainly communicate with many diverse signals, but communication and language are not the same thing. Communication encompasses any behavior or trait that evolved to convey information from one individual to another. It need not even be voluntary – the warning colors of a poison dart frog are a form of communication even though the frog does not choose to produce them. Language is a specialized system of communication that can be used intentionally to express virtually any concept, including abstract ideas.

Key features of language include words with specific meanings, acquisition via learning, intentional choice to inform others, communication about things removed from the present in time or space, and combination of sounds into words and words into sentences according to grammatical rules. While these features were once thought to be unique to humans, each has now been documented to at least a limited degree in animals.

Many mammals and birds produce alarm calls that listeners perceive as meaningful references to specific types of predators. While alarm calls are largely hardwired in the brain rather than learned, nonhuman analogs of personal names *are* learned, and have been discovered in dolphins, parrots, and marmosets in addition to elephants.

Waggle dance

Some primates adjust their communication according to the recipient's prior knowledge, indicating that they communicate intentionally. Honeybees perform a "waggle dance" to communicate the distance, direction, and quality of resources to their colony members, a rare known example of nonhuman animals communicating about something removed from the present in time and space. Some birds and monkeys even exhibit simple grammatical rules in their calls. For example, Japanese tits combine meaningful calls into phrases in a specific order and Campbell's monkeys add a suffix to their alarm calls to make them less urgent and less specific.

However, we have never found all these components together in any nonhuman species, leading most scientists to conclude that language is uniquely human. But what if we have failed to uncover language in nonhuman animals not because it doesn't exist, but because we have been using the wrong tools for the job?

Traditionally, researchers have tried to determine the meaning of signals by associating them with the immediate context in which they are produced, but a defining feature of language is that it is often used to communicate about things unrelated to the speaker's current behavior. In fact, if an alien scientist tried to characterize the human vocal repertoire using the same analytical tools, they might reasonably conclude that all speech is a single call type, since most words can be produced in almost any context!

> **"AI could provide major breakthroughs in decoding animal communication**

Fruit bat alphabet

In my study about elephants, I used a simple machine learning algorithm model, but modern artificial intelligence (AI) may revolutionize our ability to study animal communication. Although AI models cannot substitute field observations and experiments, they can process much larger datasets than human analysts could manage on their own.

AI has already helped us understand the structure of animal signals, identifying, for instance, a potential "alphabet" of sounds that comprise fruit bat calls, and more. The next challenge is to determine what these signals mean and whether there is any evidence for abstract meaning.

AI models for human language can automatically infer grammatical rules and even translate between two languages without any "dictionary" that explicitly relates them to each other. Similar models might provide major breakthroughs in decoding animal communication, if enough data can be gathered to train them. With new recording technologies and AI algorithms to automatically process long audio streams, such datasets are increasingly within reach.

If any nonhuman animal has language, I would put my money on a whale or dolphin. Some species have brains that rival our own in complexity, and we still know very little about how these animals communicate. Sperm whales, who have the largest brains of any species on Earth, communicate with clicks grouped into temporal

◥ Lockdown bees (Sonoma Fields), *2022, is a composition work produced in the San Francisco Bay area by American artist Doris Mitsch. It is made up of hundreds of photos shot over the course of a couple of minutes and assembled to reveal the trajectories of the bees.*

Female elephants use their trumps to communicate.

patterns like Morse code, and exchange these click patterns back and forth in a conversation-like manner.

Project CETI, an international group of whale language researchers, is attempting to use AI, swimming robots, drones, and underwater microphones to understand what these clicks mean. They have already discovered that sperm whales produce many more click patterns than previously realized, suggesting the potential for extensive information to be encoded in these utterances.

Sentient beings

If we ever discover language in other animals, the societal implications could be monumental. Being able to hear another species' perspective would likely drastically change, for the better, how we relate to them. There is already a growing movement spearheaded by several Indigenous groups to grant legal rights to whales, in part due to recognition of their complex communication.

However, language should not be a prerequisite for having rights. After all, we rightly consider nonverbal children to have the same inherent worth and basic rights as other humans. Many moral philosophers argue that what really matters for the purposes of equal moral consideration is not language or even intelligence per se, but rather sentience, the capacity to have conscious feelings.

The truth is that we don't need to be able to talk to other animals to determine if they are sentient. Compelling evidence already exists. Cleaner fish can recognize themselves in a mirror, a sign of self-awareness that human children take years to develop. Rats will refuse to press a lever to get food if they see that doing so causes another rat to receive an electric shock. Chickens are capable of keeping track of which other chickens have communicated truthfully or deceptively in the past. The list goes on.

If we want our ethics to align with the scientific reality of animals' capabilities, then we must radically change how we treat all these species, not merely a few charismatic ones like whales and elephants. This would require significant transformation of our society, especially our food system. ■

OUR GUEST

Aktan Arym Kubat: "I live among the heroes of my films"

© Aisedora Alymkul

Interview by
Katerina Markelova
UNESCO

A figurehead of Kyrgyz cinema since the early 1990s, Aktan Arym Kubat came to international attention with *The Adopted Son* in 1998. As a director, as well as set designer, scriptwriter, producer and actor, he has won numerous international awards. Highly realistic, his films give an intimate yet universal view of his country and the world around him.

At the age of 68, you have made nine films, each in its own way depicting ordinary life in Kyrgyzstan, particularly in the countryside. Why are you so drawn to these places in particular?

I think it stems above all from my first vocation. I trained as a painter and only became a filmmaker through a combination of circumstances. I love artistic truth. The countryside is a metaphor for my country, which has remained on the margins. I made a film about it, *Bus Stop* (2000), after the fall of the Soviet Union. I remember that, at the time, there were only a few cars passing by, even on the main roads. But people stood and waited by the roadside. We waited for a long time, not knowing what would come next. Each of my films reflects the times in which I live.

I've made six major films divided into two trilogies. The first is about childhood, adolescence and youth. The second is almost entirely about my present life. Although I'm sometimes called the poet of the ordinary, these are pretty tough films.

Even if my films were to lose their artistic value over time, they would still be of anthropological interest because I try to film authentic stories, with real people rather than actors. You can see how people live, how they dress, what their relationships are, what their daily lives are like. I work at the frontier between documentary and fiction.

In the trilogy of* The Light Thief *(2010),* The Centaur *(2017) and* Esimde *[This Is What I Remember] (2022), the characters are innocent, honest men, with integrity and a concern for justice. What are you trying to show through them?

We Kyrgyz are a debonair people, still largely untouched by the influence of globalization. I say of the electrician Svet-ake in *The Light Thief* that he is a modern-day Prometheus. Sometimes it seems to me that men like Svet-ake have disappeared, but you can still find men like Centaur, a former projectionist working on building sites. He's trying to change the country by going back to the traditions and legends of the ancients. I called him Centaur to signify that there is still a part of animality in us. Centaur has ceased to be what he was, a projectionist. Many cinemas have closed. Zarlyk's loss of memory in *Esimde* is also a metaphor. We seem to have collectively lost our memory: we think we are intelligent but we lack wisdom.

In fact, I try to understand myself through my films. I also try to capture my country through a personal lens. The visual interpretation of my surroundings, combined with my emotional feelings and my understanding of things, lead me to tell simple and beautiful stories that nevertheless act as a mirror of Kyrgyz society

You have won several international awards, including the Silver Leopard for* The Adopted Son *at the Locarno Film Festival in 1998 and the Jury Grand Prize at the Asia Pacific Screen Awards (APSA) in 2022 for* Esimde. *Have these awards changed anything for you?

It's a recognition that brings me new funding opportunities. I'm not looking for honours. When I make a film, sometimes it gets rewarded. Presenting a film at a festival is hard work. You have to promote it and, in my case, represent your country. For a small country like ours, this is a necessity.

> **“Each of my films reflects the times in which I live**

I'm sometimes accused of not portraying my society in the best light. I film the harshness of rural life. Why should I portray a better life? I don't think that's the role of the artist. The artist shows what disturbs them.

The writer Chinghiz Aitmatov played a major role in the advent of the "miracle of Kyrgyz cinema" in the 1960s, insofar as many films were inspired by his works. Do you see yourself as an heir to that golden age?

Literature is often a source of inspiration for cinema. Aitmatov, as an exceptional phenomenon in our literature, certainly inspired many filmmakers. The Kyrgyz miracle is largely associated with his name. His works have been adapted by our masters, Tolomush Okeyev, Bolot Shamshiyev, Gennady Bazarov, and a host of Russian and Soviet directors, including Larisa Shepitko, Andreï Mikhalkov-Kontchalovsky and Irina Poplavskaya.

I am perhaps closer to Aitmatov than anyone who has brought him to the screen, not so much for his literary output as for his relationship with the world around him. Many of his stories evoke his village of Sheker, and his heroes are people he knew. Like him, I live among my heroes.

You act in several of your films. Your son Mirlan Abdykalykov, who is also a director, also appears on screen. Why this choice?

My films are very personal. When I set out to make my first film, I naturally turned to my childhood. It was an unconscious appeal to myself. Federico Fellini also had this idea – if you can't talk about yourself, how can you talk about others? And when I talk about myself, the only man who resembles me is Mirlan.

◥ *Photo taken during the filming of* The Light Thief *(2010).*

© Erkin Bolzhurov

> **"I try to capture my country through a personal lens**

He played in the first trilogy and in particular in *The Adopted Son*. But the adopted son is me. The hero learns that he has been adopted but stays with his family. In my country, we say that you're not the child of those who fathered you, but of those who raised you. The same is true of *The Chimp* (2001). Although a large part of the population does not have the physiognomy of Suimenkul Chokmorov, a Kyrgyz man is expected to look like our famous actor. If I don't look like him, then I'm not Kyrgyz? *The Chimp* was a form of reaction to the diktats of beauty. All artists have a flaw that they seek to overcome.

◥ *Photo taken during the filming of* The Centaur *(2017).*

© EpicentreFilms

> **"The artist shows what disturbs them**

These were the circumstances that led me to play in *The Light Thief*. I'd remembered the electrical engineers of my childhood. We all admired these men who could effortlessly climb to the top of a pole and connect the electricity. A man who brought light into houses had to be good, different from his fellow men. I needed an actor who could convey that,

◥ *Photo taken during the filming of* The Adopted Son *(1998).*

but I couldn't find him, so in the end I had to decide to play him myself. The film won several awards, notably Best Actor.

The number of films produced in Kyrgyzstan has increased considerably in recent years. What does this say about the national film industry?

The Kyrgyzfilm studio was one of the most poorly equipped in the Soviet era. Kazakhfilm, which had benefited from the evacuation of the Mosfilm studio to Kazakhstan during the war, had a much more solid base. When the Soviet Union collapsed, we fell on hard times. We came out of it thanks to the advent of digital technology, which helped democratise film production. My films used to require an average of 30,000 metres of film, which cost around US$ 90,000. Today, with that amount of money, you can make three films.

On average, around 50 films are produced each year in Kyrgyzstan, sometimes more. All means are good in order to make a film – some borrow money, others find sponsors. This is a film industry that is oriented above all towards making money, and there's nothing wrong with that. Commercial cinema and auteur cinema must be able to coexist if the industry is to prosper. Commercial films attract audiences, which encourages the opening of cinemas. This gives us the opportunity to be distributed and to bring our films to the attention of the public. In time, quantity will produce quality.

The problem with Kyrgyz cinema is that it lacks analysis. It seems to me that neither audiences nor sometimes we ourselves know what our cinema should be. We should study the cinematographic process, talk about it and describe it. But there are only two professional critics in our country.

Many of your films have been made with the support of European funding. How does this influence your work?

All the money invested in the production of my films comes from funds that do not require a return on investment. Without these funds, they wouldn't exist. One of my first films, *The Swing*, shot in 1993, won several awards. It was shown at festivals. The French producer, Cedomir Kolar saw the film and, in 1994, came to Bishkek to meet me. At the time, we didn't even have a suitable hotel to put him up in... We corresponded for three long years. In each letter, I tried to prove to him that I was capable of making films. During this time, he was putting together a budget. In 1997, we started shooting *The Adopted Son*. After the release of *The Chimp*, I had to wait eight years to take on a new project. It's getting harder and harder to make auteur films. But investing in art and culture is more necessary than ever.

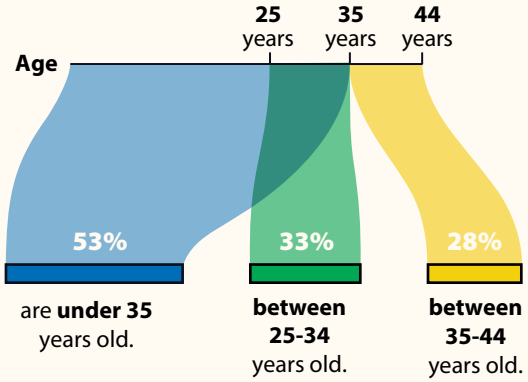
Laetitia Kaci
UNESCO

The new faces of influence

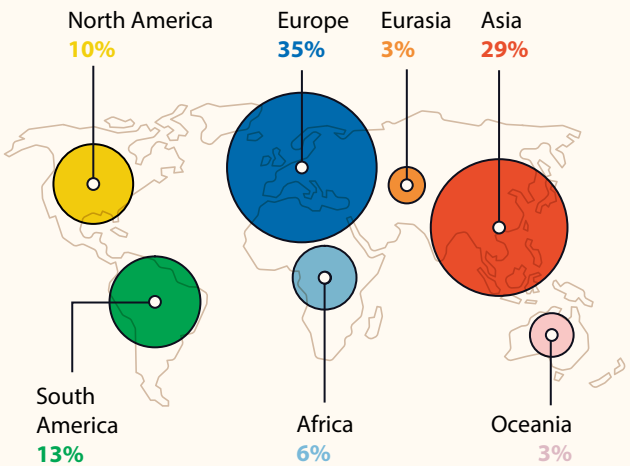
Digital content creators, also known as "influencers," are increasingly shaping how information is presented and shared. Whether they engage millions of followers or focus on niche communities, these influential voices reach global audiences, especially younger generations who are moving away from traditional media to social media.

A recent UNESCO survey of 500 influencers from 45 countries, *Behind the Screens*, published in November 2024, provides an overview of this new way of accessing information.

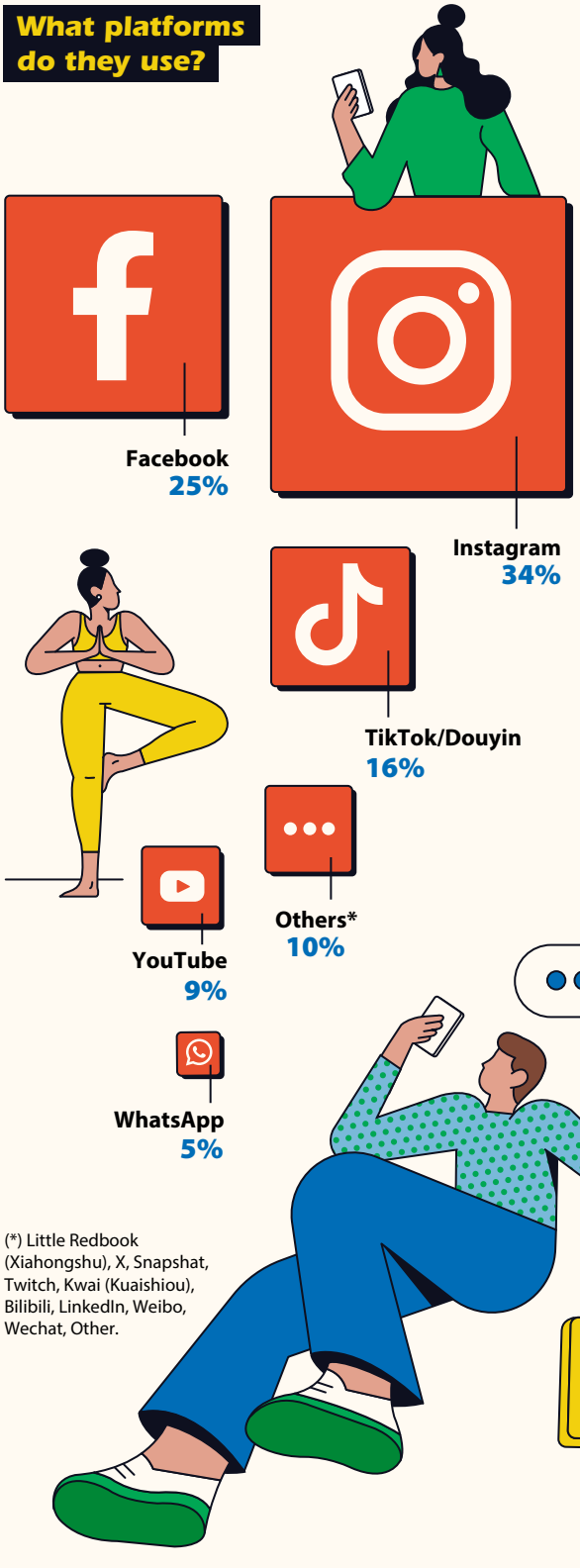
How old are digital content creators?



Where do they come from?

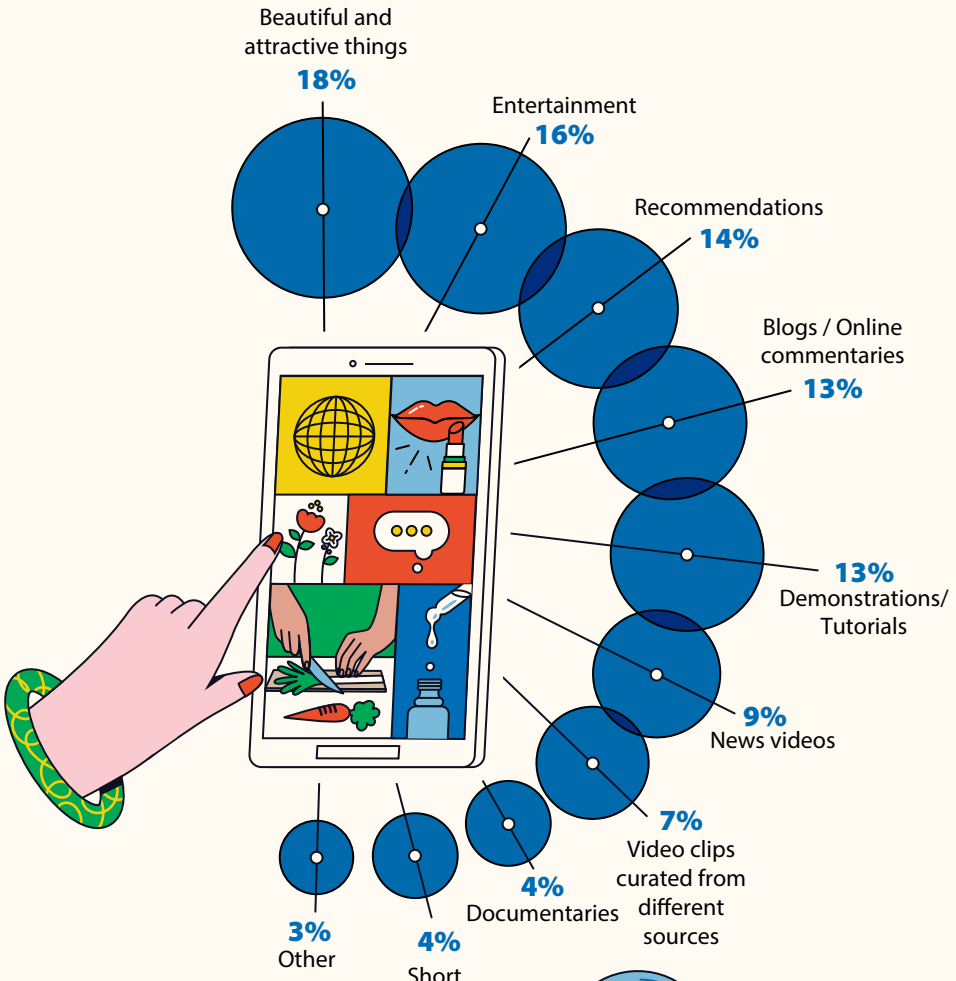


What platforms do they use?

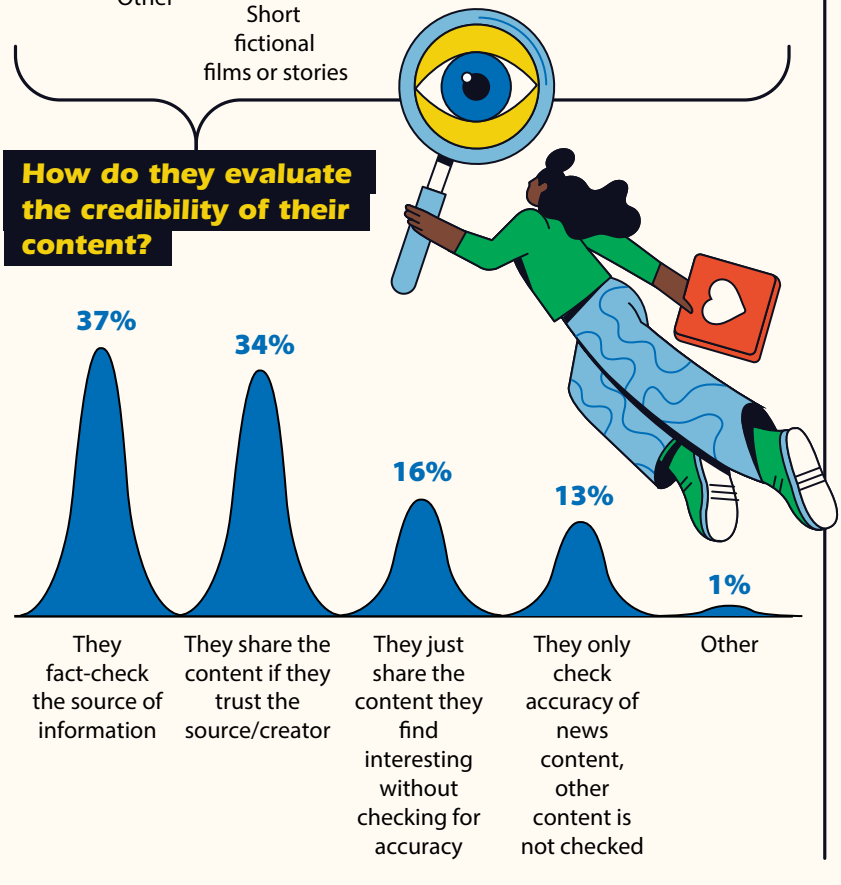


(*) Little Redbook (Xiahongshu), X, Snapshat, Twitch, Kwai (Kuaishiou), Bilibili, LinkedIn, Weibo, Wechat, Other.

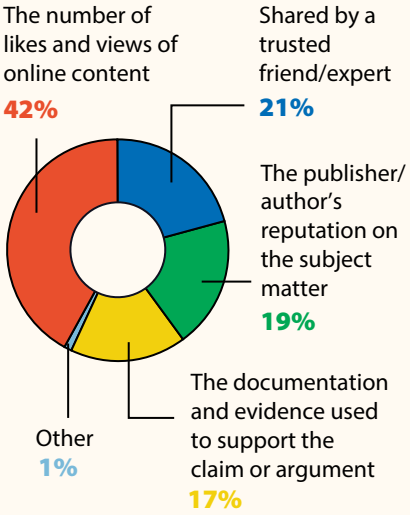
What type of content do they publish?



How do they evaluate the credibility of their content?



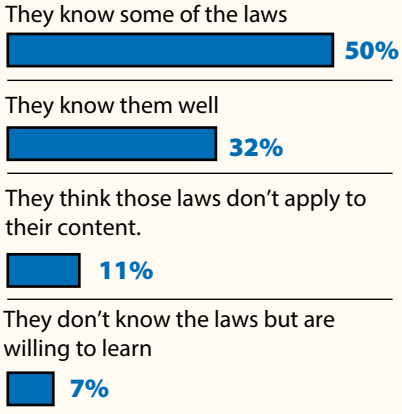
How do they evaluate the credibility of online content?



What sources do they rely on?

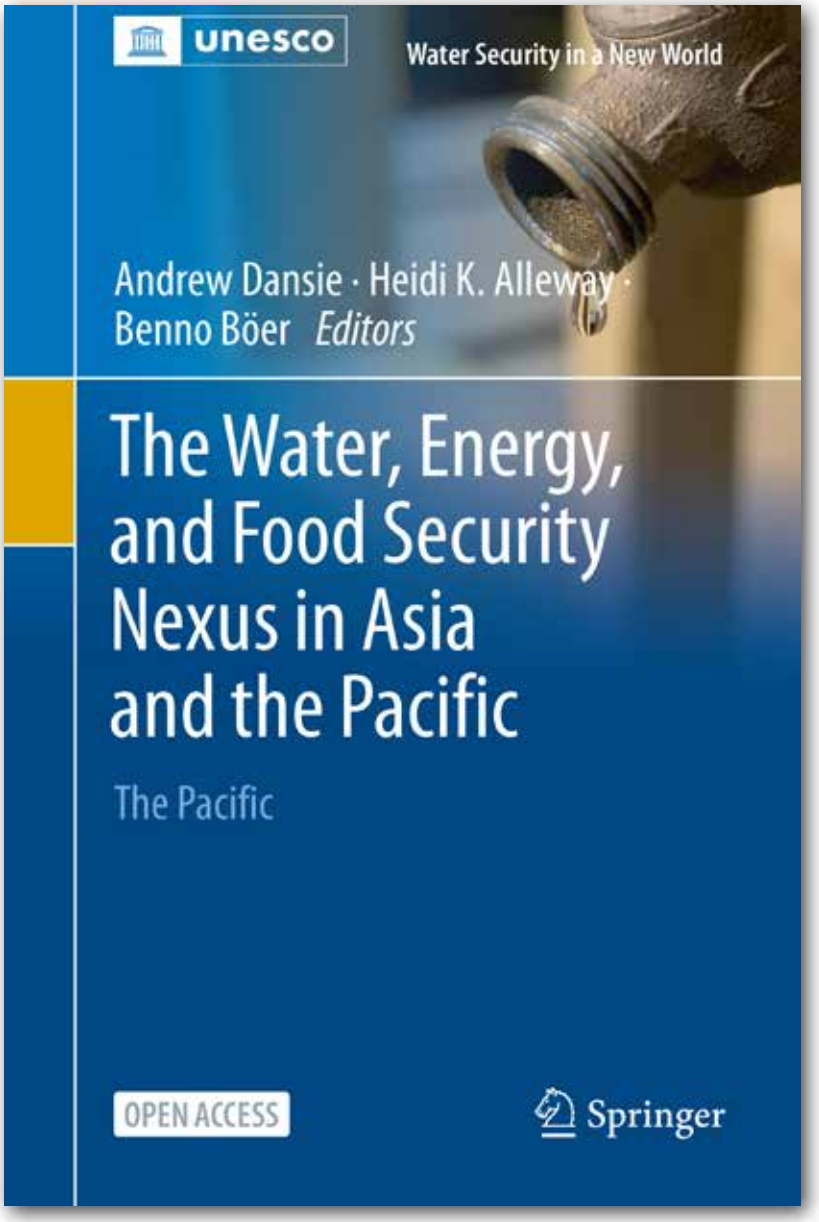
Personal experience/encounter	58%
Own research and interviews with knowledgeable experts	39%
Online sources only, not from mainstream media	37%
Mainstream news media	37%
Tips and leads from followed followers and friends	30%
Official sources (government...)	13%
Others	1%

What do they know about national laws related to freedom of expression, defamation and copyright?



The Water, Energy, and Food Security Nexus in Asia and the Pacific

(The Pacific)



This volume of the three-volume book series "The Water, Energy, and Food Security Nexus in Asia and the Pacific" offers expert insight into future scenarios and challenges for the Pacific region. This region comprises seventeen sovereign countries and seven territories spread across the Pacific Ocean, a blue expanse that covers a fifth of the world's surface area but contains only 0.5 per cent of the population – or 44.5 million people.

This volume is focused on the challenges produced by the impacts of anthropogenic climate change and human population pressures. The diversity of culture, traditional knowledge and ways of life across the Pacific are united by similar geographies and opportunities to apply a coordinated approach to manage water, energy and food that is centred on active decision-making across the three sectors to increase the security of each.

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Education and nutrition

Learn to eat well

A new Global Education Monitoring (GEM) Report and London School of Hygiene and Tropical Medicine (LSHTM) paper, *Learn to Eat Well*, published in March 2025, highlights the deep connection between education and nutrition. At a time when obesity rates are rising sharply worldwide, while 22 per cent of children under five suffer from stunted growth and 7 per cent weigh too little for their height due to malnutrition, the publication calls for urgent action. It emphasizes the need to integrate nutrition education and access to healthy school meals into global policy agendas.

www.unesco.org/gem-report/en

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Sustainable Development Goals

London School of Hygiene & Tropical Medicine | Research Consortium for SHN

Global Education Monitoring Report