

How the ‘right to science’ will help to overcome today’s many crises

The Universal Declaration of Human Rights – proclaimed 75 years ago – describes science as a fundamental right. Upholding this right has never been more relevant than it is now.

“**E**veryone has the right to freely participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.”

So begins Article 27 of the Universal Declaration of Human Rights, the landmark statement on individuals’ rights proclaimed by the United Nations General Assembly on 10 December 1948.

The declaration is a remarkable statement of universal values, the writing of which was accomplished through a process of collective deliberation and compromise. Drafted by a committee of nine people chaired by the US delegate to the UN, Eleanor Roosevelt – the only woman among the nine – it was discussed and voted on by all UN member states, comprising some 50 nations at the time.

Delegates from smaller countries and from those that had just gained their independence made considerable contributions, as did non-governmental organizations. It was India’s delegate, writer and educator Hansa Mehta, who helped to ensure that Article 1 began with “All human beings are born free and equal in dignity and rights”. The original draft began with “All men”.

Article 27 is particularly remarkable, because it enshrines the enjoyment of science – as well as that of art and culture – as a fundamental right to be protected. This contrasts sharply with the current view of many people that science and culture are separate entities. But what exactly is Article 27 protecting?

The scientific landscape has been transformed since 1948, thanks to the digital revolution, the advent of Earth systems research and transformative developments in agriculture, medicine and the life sciences, to name a few examples. But does Article 27 imply, for example, that people universally have a right to enjoy a clean environment and a stable climate – issues that research has brought to the forefront of the public consciousness in the past 75 years? Does it imply that the fruits of medical science should be distributed equitably? Or that access to the Internet – and the knowledge, including scientific insights, that it opens doors to – should be regarded as a basic human right?

Today, we are all too aware that advances in knowledge



Eleanor Roosevelt holds the 1948 Universal Declaration of Human Rights.

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and the benefits that accrue from them are not getting to the people who need them the most quickly enough – or, sometimes, at all. Science is taking too long to systematically study how countries should adapt to a changing climate. Climate policy has just begun to tackle the question of who should pay for the loss and damage that nations have caused unequally through past and present greenhouse-gas emissions. And we must never forget how the governments of some high-income countries over-ordered, or hoarded, vaccines during the COVID-19 pandemic. More than one million lives could have been saved had vaccines been shared more equitably.

Over the next year, international meetings will continue on a spectrum of issues for which science is essential. Among them are talks on limiting climate change, ending plastics pollution and protecting the world from future pandemics. On the basis of what we now know, all of these issues could be framed as threats to human rights.

None of the nine committee members who drafted the 1948 declaration was a scientist, although several delegates had scholarly backgrounds in philosophy, education, ethics or law. By contrast, research is now central to most international talks, including discussions on protecting biodiversity and the ocean, and prohibiting nuclear weapons. In some cases, scientists working with human-rights advocates have made countries realize that such agreements are necessary to protect people and the planet – a victory of sorts for the right to science.

But, unlike in 1948, research now competes with larger and better-organized interests in international negotiations. Volker Türk, the UN high commissioner for human rights, did not pull his punches when he wrote in *Nature* on 1 November that “too many governments, policymakers and big-industry leaders are wilfully shutting their eyes to science” (see *Nature* 623, 9; 2023). In doing

so, they are undermining the value of science to collective action – whether they are launching new fossil-fuel projects or keep increasing the production of plastics.

Seventy-five years on, the right to science is increasingly tied to many other declared human rights. The declaration is both a result of its time and a timeless way of showing how nations drew on knowledge and experience and worked together towards a common goal. As the world stands at an inflexion point of overlapping crises, humanity's declaration of a right to research should inform how we approach the science we choose to do, and the international lawmaking that results from it.

Global science is splintering into two – this is a problem

The United States and China are pursuing parallel scientific tracks. To solve crises on multiple fronts, the two need to become one.

It's no secret that research collaborations between China and the United States – among other Western countries – are on a downward trajectory. Early indicators of a possible downturn have been confirmed by more sources.

A report from Japan's Ministry of Education, Culture, Sports, Science and Technology, published in August, for instance, stated that the number of research articles co-authored by scientists in the two countries had fallen in 2021, the first annual drop since 1993. Meanwhile, data from Nature Index (see go.nature.com/47ubofv) show that China-based scientists' propensity to collaborate internationally has been waning, when looking at the authorship of papers in the Index's natural-science journals.

Nature reported last month that China's decoupling from the countries loosely described as the West mirrors its strengthening of science links with low- and middle-income countries (LMICs), as part of its Belt and Road Initiative (see *Nature* 622, 669–670; 2023). There are many good reasons for China to be boosting science in LMICs, which could sorely do with greater research funding and capacity building.

But this is also creating parallel scientific systems – one centred on North America and Europe, and the other on China. The biggest challenges faced by humanity, from combating climate change to ending poverty, are embodied in a globally agreed set of targets, the United Nations Sustainable Development Goals (SDGs). Approaching them without shared knowledge can only slow down progress by creating competing systems for advancing and

implementing solutions. It's a scenario that the research community must be more aware of and work to avoid.

Nature Index offers some reasons as to why collaboration between China and the West is declining. Travel restrictions during the COVID-19 pandemic took their toll, limiting collaborations and barring new ones from being forged. Geopolitical tensions have led many Western governments to restrict their research partnerships with China, on national-security grounds, and vice versa. Shifting publication trends for researchers in China are also part of the mix.

Work by economist Richard Freeman and intellectual-property researcher Qingnan Xie, both at Harvard University in Cambridge, Massachusetts, has found that, between 2017 and 2022, US–China collaborations, as a proportion of all publications from China, fell by 5.4 percentage points (Q. Xie and R. B. Freeman *NBER*, 31306; 2023). China's overall number of publications grew much faster than that of the United States during this period, so this drop was much bigger in volume terms than was the change in joint US–China papers as a proportion of US production – a fall of 1.9 percentage points from 2019 to 2022. Also during that period, the number of papers with just Chinese authors increased at a progressively steeper rate.

Collaboration decades

Another part of the story is that China's researchers are no longer rewarded with promotions or bonuses if they collaborate or publish internationally, and are instead encouraged to focus on publishing in China-based journals. On one level, these trends give little cause for concern. China's scientific prowess is established, and the country is engaging with new partners, bringing expertise and experience into the global science system. But the danger is that the international research ecosystem, underpinned by a centuries-old shared understanding of how knowledge is created, built and improved on through decades of global collaboration, splits into two.

There are some signs that such a divergence will not occur, and that scientific dialogue between China and the West is beginning to be rekindled. The meeting this month between US President Joe Biden and Chinese President Xi Jinping seemed to suggest a constructive approach to relations is returning. It took place in California, a state that in October signed a world-first agreement between a sub-national government and China with the aim of deepening collaboration on climate research and policy (see page 889).

China has also been looking to work more closely with Europe. Officials, including Hou Jianguo, president of the Chinese Academy of Sciences in Beijing, toured the continent last month in a bid to improve ties.

Researchers are motivated through a mixture of incentives – one of which is to do what it takes to get on with the job. But researchers also operate in a larger context. In the words of the UN Human Development Report, the world is in “a new uncertainty complex”, and research is essential to the search for solutions. Both China and the United States need to build and work on shared initiatives such as the SDGs. Their twin paths ultimately need to become one.

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