fraught with problems because there are so many ways to value nature. Take the contribution of insect pollinators to the economy: this can be worked out by computing the cost of humans or machines required to carry out those tasks if bee populations vanished.

By contrast, valuing a lake is more complex. One method relies on asking people in surveys what they might pay to enjoy the lake and its surroundings — but that assumes that respondents will agree to the principle of payment for its benefits. Some might argue that public spaces are part of a shared commons, and are already paid for through taxation. Others might say that the lake's value to them is too great to be measured in dollars and cents.

Posing the question of nature's contribution to economic growth is itself contentious, considering that continued economic growth is a factor in biodiversity loss. We know that species and ecosystems can't withstand unsustainable human consumption and increases in spending — two of the variables that growth statistics record. Should we be measuring biodiversity's contribution to growth when our present form of growth is itself harming the planet?

The experiences of past assessments suggest that Dasgupta and colleagues will not be able to reconcile such a spectrum of viewpoints. But there are other things they can do. It is good to see the team consulting the international biodiversity research network known as IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services), which is also undertaking a global assessment of the value of biodiversity and encountering many of the same challenges.

The IPBES assessment team has responded to the diversity challenge by embracing it: they are seeking ideas and inspiration from a wide range of people, including philosophers and historians, alongside ecologists and economists. IPBES is itself structured in such a way that the perspectives of researchers in developing countries and of indigenous peoples' organizations are mainstream, not marginal, voices.

IPBES is not rushing things — its final report is expected in 2022. And it will be posting the text of draft reports online for anyone to comment on. All comments will be considered by the team, says its co-chair, Unai Pascual at the Basque Centre for Climate Change in Leioa, Spain. The Dasgupta assessment team should consider a similarly consultative approach as it starts to plan its work.

"Assessing biodiversity's contribution is fraught with problems because there are so many ways to value nature."

Most of the world's biodiversity hotspots are in developing countries, including areas where biodiversity is protected by indigenous peoples. For many, an economic assessment, especially one led by Britain, will bring back uncomfortable memories of the age when scientists from developed countries came to nations in Africa, Asia and Latin America and took home biological samples for research and commercialization without permission — something the Convention on Biological Diversity now prohibits.

Establishing the value of biodiversity to economies is important, in part because it will help policymakers in all countries to appreciate that there's a cost to losing nature. But at the same time, an economic assessment must take into account the perspectives of the humanities, of developing countries and of members of indigenous communities.

Getting the process right matters. Too often, big policy reviews focus on the final report. As it begins work, the Dasgupta team should keep in mind the words of the late Maurice Strong, founding director of the UN Environment Programme, who famously said, "The process is the policy." ■

The past matters

To navigate the present, we must learn from history.

To count the handful of years between the newest and oldest paper on many a citation list is to know that scientists rarely have cause to look back very far. That's a problem. Research is not just about placing one new brick on top of — or instead of — the last. It is a product, and a shaper, of people, place and society. To navigate that context wisely, the long view is essential.

Why? Because although history might not repeat itself, it often rhymes. Consider post-financial-crash rises in nationalism or the predictable cycles of hubris and horror that have attended new technologies from pesticides to plastics, artificial intelligence to gene editing and self-driving cars. Recall that evolutionary theory begat eugenics; atomic physics led to the bombings of Hiroshima and Nagasaki; and machine learning has sent democracies tottering.

We ignore our past at our peril.

So, from this week, *Nature* readers are invited to walk in the company of leading historians of science as they explore how the past century and a half has forged some of the defining features of today's scientific system.

A series of essays, the last of which will appear in *Nature*'s 150th-anniversary issue on 7 November, charts the rise of government and military funding, industrial research and development, data, ethics and the superpower that is China. The series also meditates on how what we discover alters how we think of our world and ourselves.

Each author was asked the same question: "How did we get here from there?" (with 'there' being 'science in 1869', the year that *Nature* began publishing, and 'here' being science in 2019). Although the pieces range across continents and disciplines, through ribosomes and rebellions, from steam to the stars, together they tell one story: that discovery is always political.

That the powerful have steered — and have been steered — by science is encapsulated in David Kaiser's opening essay on the funding system so familiar today (page 487). Our assumption that a government is failing its people and its future if it underspends on science has its roots in the empire-building of the late nineteenth century and the war complexes of the twentieth. And it is these sweeping, strategic injections of national cash that built the vast edifice of universities, academies, institutions and spin-offs that we take for granted.

And, of course, those who pay the piper call the tune — changing research for decades or more. Climate science — the very idea of data itself, as Sabina Leonelli will explain in a forthcoming issue — got a jump-start when the sprawling Austro-Hungarian Empire of the mid-nineteenth century invested heavily in meteorology to craft a narrative of unification that only a shared weather system could supply.

Seismology sprinted to confirm the theory of plate tectonics thanks to cold-war anxieties about clandestine nuclear tests. Repeated state investments in agricultural science 'saved' China from many fates in the mid-twentieth century, Shellen Wu relates. Early chemical and communications corporations nurtured Nobel prizewinners, Paul Lucier recalls; will Facebook or Google do the same?

We could have chosen so many other signature elements of science. The university, the journal, the laboratory, the paper; peer review, metrics or patents; disciplines, observation, inquiry, experimentation and knowledge. But many of these have origin stories much longer than 150 years.

Our choices are without doubt both idiosyncratic and debatable — do tell us what you'd have picked. Yet we feel they hold an important lesson: that to understand ourselves, our moment, our challenges, options and risks, and to plot a responsible way forward, science has to know where it's come from, the problems and solutions that went before and the mistakes it really must not repeat. ■