
INTERNATIONAL RELEVANCE OF THE AYALA AWARD¹

La relevancia internacional del Premio Ayala

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Esteemed leaders and guests,

I am honored to recognize the Honorable Rosaura Ruiz Gutiérrez, currently Mexico's Secretary of Science, Humanities, Technology, and Innovation, and to congratulate her as the awardee of the 2025 Hana & Francisco Ayala Medal that will be bestowed on her by and at Comillas Pontifical University during tomorrow's ceremony. I am also very pleased to acknowledge the presence of His Excellency Quirino Ordaz Coppel, Ambassador of Mexico to Spain. Today, allow me to focus on the international relevance and momentum of the aspiration behind this award, with much gratitude to Casa de América for hosting this magnificent prelude to the award itself.

The Ayala Medal pays tribute to "extraordinary accomplishments in bridging disciplines and nations to bolster the intellectual, spiritual, and humanitarian contribution of science."

This ambition is emblemized by the award of one of the inaugural 2024 Ayala Medals to Dr. Robert Hauser, then Chief Executive Officer of the preeminent American Philosophical Society founded by Benjamin Franklin in 1743 and excelling as an unparalleled venue to bring sciences, arts, and

¹ Speech given by Hana Ayala at the Casa de América in Madrid on October 2, 2025 on the occasion of the 2025 Ayala Medal awarded by the Hana and Francisco José Ayala Center for Science, Technology, and Religion at the same university.

humanities in service to humanity. It is backed by a powerful precedent set by Francisco J. Ayala, a mastermind and architect of bridges among science, religion, and art that he built with the conviction that "only under the prism of evolution it is possible to understand...the possibilities that the future brings us" (Ayala, 1999, p. 15).

The painting *Juan de Pareja* by the great Spanish master Diego Velázquez and the *Dagger of Aurangzeb*, a weapon shaped by an unknown Muslim craftsman into a treasure of Indian decorative arts, are among the art masterpieces that Francisco Ayala used in his comparative celebration of human creativity and the creativity of evolution that brings novelties into being (Ayala, 1994, 1970). He blurred the line between the wonder of discovery and the paradigm shifts he accomplished by revolutionizing our understanding and prospective cure of Chagas, malaria, and other tropical diseases that afflict millions of people (Ayala, 1993). His laboratory was a cradle of "science diplomacy" well before the term was coined, a crossroads of brilliant young minds from different cultures, and an engine of collaborations fueled by the desire to better the world, as iconized by Dr. Rosaura Ruiz's distinguished career.

Disclosing and harnessing the ever-greater relevance of Francisco Ayala's immense legacy as an antidote to global geopolitical rivalries is integral to the Ayala Medal's mission and to the aspiration behind the legacy I strive to leave in union with Francisco's.

Let's enter today's geopolitical landscape, as shaped dramatically by rare earth elements (REE). China currently dominates the market of these 17 metal elements that are environmentally hazardous and chemically intensive to extract and refine but that are essential to the manufacture of many high-tech products and to the production of medical and defense technologies. The Exclusive Economic Zones (EEZs) that grant coastal states sovereign rights for exploration, exploitation, and management of natural resources within 200 nautical miles from their coastlines are acquiring unprecedented significance in the face of the growing demand for the mining of subsea minerals and metals, rare earths in particular. The eight Arctic states have continental shelves and EEZs extending into the Arctic Ocean, which harbors a bounty of rare earth deposits. As climate change is opening new resource extraction opportunities, they offer a preview of territorial disputes and

geopolitical competition over rare earth.² Across the world oceans, many questions and tensions frame the future of deep-sea mining in international waters, in part because of concerns about its environmentally destructive consequences and contested authority over its governance (Alger, Green, Neville *et al*, 2025).

At the same time, a megatrend is emerging that is powered by vanguard transnational science and that contrasts with the unfolding geopolitical trends. It uniquely builds on a world-changing discovery. Following in the footsteps of Christopher Columbus' encounter with the New World, Vasco Núñez de Balboa became—in September 1513—the first European to sight the Pacific Ocean from the New World, during his trip across the Darién Isthmus of today's Panama. According to *The Britannica Guide to Explorers and Explorations that Changed the Modern World* (Pletcher, 2010), "the discovery of the Pacific Ocean made possible the unification of the geography of our planet."

At present, the world-unifying Pacific is becoming a prime nurturing ground for new-generation research that is unmasking the vital role of the borderless evolutionary and ecological linkages for humanity's progression into a sustainable future. The *Tara* Pacific research expedition, which involved more than 200 scientists and spanned three years, merits a special mention for championing a pan-ecosystemic approach to sampling coral reefs and their surrounding waters throughout the entire Pacific Ocean (Lombard, Bourdin, Pesant *et al*, 2025). All the obtained dataset are being publicly released, thus expanding the reach and benefits of science across political lines, not in the interest of one nation but of all humanity.

Another transnational endeavor of globally transformative significance is unfolding in the Eastern Tropical Pacific, a marine region endowed with exceptional biodiversity along the convergence of major marine currents from the west coast of Mexico to the southern tip of Peru. Four countries—Colombia, Costa Rica, Ecuador, and Panama—have collectively charted the Eastern Tropical Pacific Marine Corridor, an ever-expanding transborder marine protected area network consolidated by cutting-edge research and boasting four UNESCO World Heritage Sites. In 2022, Mexico's Revillagigedo National

² <https://www.livescience.com/who-owns-the-arctic.html>; https://theowp.org/crisis_index/arctic-circle-territorial-conflicts/

Park of World Heritage rank was formally included in this visionary marine conservation corridor.

I see an even grander promise of this multi-country marine corridor in its potential to pave the way for taking the World Heritage instrument into the future. This pioneer endeavor illuminates the fact that the current “lists” of World Heritage Sites within individual nation states fall short of proactively charting the globe-crisscrossing bonds among these sites. It begs to be valued in its capacity to ignite high-profile “legacy investments” geared toward harnessing the evolutionary pathways rich in natural knowledge capital to redefine the world’s economic geography in support of global sustainability (Ayala, 2025). The economic empowerment of the transnational dimension of the World Heritage paradigm is a powerful dividend of this perspective.

Mexico, galvanized by the momentum of being the newest World Heritage stakeholder in the Eastern Tropical Pacific Marine Corridor, and with Secretary Ruiz at the helm of disciplines-bridging Science, Humanities, Technology, and Innovation portfolio, is well positioned to pave the way.

The preeminent Czech composer Antonín Dvořák exquisitely previewed the might of the transnational realm when, in 1892, exactly four centuries after the discovery of the New World by Christopher Columbus, he accomplished an artistic discovery of America from an angle that was much broader than America. Dvořák’s Symphony No. 9 in E minor, *From the New World*, fuses the awakening of the American voice with the delight he drew from America’s nature. Thus, this masterpiece of classical music blends its New World identity with the Czech tradition of integrating landscape into music (Clive, 2016), adding a transcontinental layer of appreciation to America’s natural assets and acquiring immortality as a gift not only to America but to the entire world.

I assert that the transnational scale serves as the New World of this century, which is still largely undiscovered and unexplored. It abounds with transborder reserves of potential scientific knowledge—the raw material of knowledge—that, unlike oil or mineral deposits, is guaranteed to keep increasing in volume and value the more it is explored and used. Moreover, the geographically unconstrained paths of scientific breakthroughs await to be appraised as unparalleled sources of wonder (Ayala, 2024a, 2024b). What an infinite reservoir of inspiration they represent for artistic creativity that would extol and celebrate the borderless complexities of earth’s life-support systems. What a vast new frontier they offer for the confluence and harmony

of science-based and faith-based appreciation and guardianship of nature, in line with Francisco Ayala's position that it is in the context of the human interface with natural wonders where horizons, seen through the window of science and the window of religion, uniquely converge (Ayala, 2007).

The transnational and transdisciplinary mission of the Ayala Medal is of direct relevance to the United Nations' bold approach to *Transforming our World: The 2030 Agenda for Sustainable Development* (United Nations, 2015). It addresses in an original, synergies-bolstering fashion, the growing calls to integrate three missing yet vital dimensions into the UN Sustainable Development Goals (SDGs), namely, the crucial value of evolutionary processes and the consequences of their impairment (De Meester, Vázquez-Domínguez, Kassen *et al*, 2024); the potential of religion in the global quest for implementing the SDGs (Schliesser, 2024; Tatay, 2022); and the great promise of art-science collaborations to tackle global environmental challenges (Paterson, Le Tissier, Whyte *et al*, 2020).

May the Ayala Medal mobilize to the utmost the combined intellectual, spiritual, and humanitarian contribution of science across the borderless New World, as both Francisco and I have desired it and as Comillas Pontifical University has enabled it. And may this Medal engender a profound symbolic opportunity for Spain—a country credited with the most transcendental amplification of geographical limits in the history of humanity—to expand our planet's horizons again by exploring and navigating policies that value the locally-elusive riches of the transnational New World as the ultimate public good.

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