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India's next scientific revolution needs patient philanthropic capital

Private wealth built the institutions that gave India its scientific capability long before the nation had economic strength or independence. There is a need to do it again

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In 1898, Jamsetji Tata pledged nearly half his personal wealth to build a world-class scientific institute, and the Mysore Durbar gave 371 acres of land. Thus was born the Indian Institute of Science (IISc) in 1911. At this point, there was no guarantee of success and independence was still 36 years away. More than a century later, the institution Tata imagined remains among the country's greatest scientific assets.

The lesson is as relevant today as it was then: Transformative science begins when someone is willing to fund a possibility long before it hardens into certainty. That is the one thing philanthropic capital can do better than any other kind of capital. It can pay for a science before it has a name, a market, or a result.

Consider where India now stands. Its gross expenditure on research & development (R&D) is 0.84 per cent of gross domestic product (GDP), against 2.43 per cent for China, 3.48 per cent for the US, and 4.91 per cent for South Korea. The deeper problem is composition. The

business sector funds only about 41 per cent of Indian R&D where the comparable figure is 77 per cent in China, 75 per cent in the US, and 79 per cent in Korea.
The government answers to an electorate every five years, and a corporation to its shareholders every three months. Neither is built to wait 20 years for a result that may never arrive. The science that matters most tends to take that long. Which is why the question for an Indian wealth creator is not whether to give, but what to fund that the state and the market structurally cannot. Four possibilities suggest themselves.

The first is to give to public institutions that already exist. Public institutions are rich in talent but short of patient and flexible money. In 2023, Rohini Nilekani Philanthropies gave ₹100 crore to the National Institute of Mental Health and Neuro Sciences and the National Centre for Biological Sciences to set up a centre for brain and mind; Kris Gopalakrishnan endowed brain research at IISc on a comparable scale. Philanthropic gifts enabled what these institutions could achieve. The West does the same, only on a larger scale.
The second is to build new private institutions that no government would start. The Tata Institute of Fundamental Research opened on June 1, 1945, on the strength of a letter from Homi Bhabha to the Sir Dorabji Tata Trust. Later, it became the cradle of India's atomic-energy programme: A single philanthropic grant that seeded a multi-decade national capability.
The third is to fund what the rest of the capital cycle cannot price, risk. What no lender, no fund and no public committee can comfortably back is the work that is meant to fail most of the time. Backing that work calls for the most patient and risk-tolerant money, answerable to nobody but possibility.
The fourth is to fund what no market will ever price, because its beneficiaries are too poor or too scattered to form one. When a private firm moved to patent human genes, the Wellcome Trust raised its stake in the Human Genome Project until it had paid for a third of the sequence, and placed every letter of it in the public domain. The Gates Foundation's 10-year grant of $70 million produced MenAfriVac, a meningitis vaccine made by the Serum Institute of India at under 50 cents a dose, for a disease whose sufferers could never have been a market. India, with its scientific base and manufacturing reach, is better placed than any other country to fund the science of the poor.

What is unique about the present moment is that the state has written philanthropy into its own plan and is officially counting on it. The Anusandhan National Research Foundation, created under the ANRF Act 2023 to fund basic and early-stage research, is meant to raise about ₹36,000 crore of its ₹50,000 crore corpus from outside government. The means to answer that invitation exist: India now publishes the third-largest volume of scientific papers in the world. If the Viksit Bharat objective is to be achieved, this is the moment for

philanthropies to supplement ANRF funds and provide the patient capital needed to strengthen India's long-term scientific capabilities, whose commercial and sovereignty benefits it can begin to reap within a decade.

It is worth asking what moved the people who did this before. JRD Tata, Homi Bhabha — they were not, in the end, funding science. They were funding the backbone of a nation that did not yet have sovereignty, in the conviction that scientific capability would one day decide its economic strength, its technological independence and its resilience. Many of them knew they would not live to see the result.

And that is why this moment matters. The fields that will define this century — artificial intelligence, genomics, quantum computing — are still at their start. And geopolitical turbulence means that once again, technological independence and resilience matter greatly. A single large and patient commitment can shape a field while it is forming.

The greatest thing philanthropy can fund is not the familiar, but the arc of the possible. India's wealth creators have been handed that chance now. The decision they make will shape India's scientific arc for the 21st century and beyond.

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