

13 E. EXPLAINED

EXPLAINED DIPLOMACY & STRATEGY

Jaishankar in Pakistan: Low expectations, some possibilities



SHUBHAJIT ROY

IN MAY 2023, External Affairs Minister S Jaishankar had described his then Pakistani counterpart Bilawal Bhutto Zardari as a "promoter, justifier, and a spokesperson of a terrorism industry, which is the mainstay of Pakistan".

"Victims of terrorism do not sit together with perpetrators of terrorism to discuss terrorism. Let's be very, very clear on this. Pakistan's credibility is depleting even faster than its forex reserves," Jaishankar said at a press conference.

In media interactions, Bilawal, who was in India for a meeting of foreign ministers of the Shanghai Cooperation Organisation

(SCO), had sought to turn the spotlight to bilateral issues — playing the victim card, and raising the issue of Article 370 and Jammu and Kashmir.

After Jaishankar in his opening remarks to the SCO meeting referred to cross-border terrorism and called for blocking channels for terror financing, Bilawal had responded: "Let's not get caught up in weaponising terrorism for diplomatic point-scoring."

India, Pak since then

A year and five months after that verbal faceoff in Goa, Jaishankar will travel to Islamabad on Tuesday for the SCO Council of Heads of Government meeting on October 15-16. Bilawal is no longer foreign minister of Pakistan, but his party supports the government of Prime Minister Shehbaz Sharif. In national elections held in February, candidates affiliated to Imran Khan's Pakistan Tehreek-e-Insaf (PTI) won a large number of seats. In recent weeks, the PTI has ratcheted up its rhetoric and protests against the government.

In India, a reduced mandate for the BJP in

this year's Lok Sabha election has increased the importance of its coalition partners in the government. These parties have not, however, spelt out their position on Pakistan — and the BJP remains firmly in charge of India's foreign and security policy.

For New Delhi, the challenge emanating from China — with which India has been in a border standoff since May 2020 — is of much greater consequence. But the security situation in Jammu and Kashmir, which has seen a state of terror attacks against the security forces especially in the Jammu region, remains delicate.

Plan for 'everything'

Jaishankar has made it clear that he will be in Islamabad for the SCO meeting, a "multilateral event", and not on a bilateral visit to Pakistan. "I am going there to be a good member of the SCO. Since I am a courteous and civil person, I will behave myself accordingly," he said earlier this month.

The SCO Council of Heads of Government is the second-highest body in the grouping after the Council of Heads of State, the high-

est body (whose meetings are attended by Prime Minister Narendra Modi, President Xi Jinping, President Vladimir Putin, etc.).

Since 2017, when India became a full member of the SCO, New Delhi has been represented at the Council of Heads of Government at the level of the Minister for External Affairs or Defence. Jaishankar participated in the Council of Heads of Government summit in Bishkek last year. Earlier summits have been attended by Defence Minister Rajnath Singh or former External Affairs Minister Sushma Swaraj. In 2020, when India hosted the SCO Heads of Government-level meeting virtually, Pakistan was represented by the Parliamentary Secretary for foreign affairs.

While Jaishankar is not expected to have very meaningful bilateral meetings in Islamabad, in an India-Pakistan context, a multilateral visit carries possibilities. On October 5, the External Affairs Minister said he was "planning" for his visit to Pakistan. "In my business, you plan for everything that you are going to do, and for a lot of things that you are not going to do, and which could hap-

pen also, you plan for that as well," he said.

Looking back, forward

Prime Minister Modi began his term in 2014 by inviting then Pakistan Prime Minister Nawaz Sharif for his swearing-in. In December 2015, the late Sushma Swaraj travelled to Pakistan and restarted the comprehensive bilateral dialogue; later that month, Prime Minister Modi himself made a surprise visit to Lahore to wish Nawaz Sharif on his birthday.

But the Pathankot terror attack of January 1, 2016; Pakistan's arrest, that March, of former Navy officer Kulbhushan Jadhav on charges of spying and terrorism; and the Uri terror attack and India's surgical strikes in September changed the course of the relationship. The February 2019 Pulwama terror attack and the Balakot air strike followed. After the constitutional changes in Jammu and Kashmir in August 2019, Pakistan downgraded ties, and bilateral trade and bus and train services stopped.

A ceasefire agreement has held since February 2021, but recent terror attacks and

infiltration across the International Boundary has impacted the situation in Jammu. Last month, New Delhi sent a notice to Pakistan to modify and review the long-standing Indus Waters Treaty.

It is against this background this Jaishankar is travelling to Pakistan. While his visit signals the opening of a window of opportunity for further engagement, the aggressive Indian response in Goa last year and at the UN General Assembly this year is indication that he will not take any provocative statement from Pakistan — on Kashmir or terrorism, etc. — lying down.

For Pakistan, which is facing unprecedented challenges within, this is a fraught moment.

Its "excellent army", as the political scientist and South Asia scholar Stephen P. Cohen wrote, "depends upon a failing economy, a divided society, and unreliable politicians." But the Pakistan Establishment's failure to ensure a favourable election result, and the continuing protests by the PTI and other groups, have laid bare some significant limitations.

EXPLAINED SCIENCE

EATING LESS LINKED TO LONGER LIVES, LARGE STUDY IN MICE SUGGESTS

EATING LESS can help people live longer, an effect that is often attributed to the loss of weight and metabolic changes triggered by consuming fewer calories. But this conventional wisdom may not be accurate, according to data from one of the largest studies of dietary restrictions ever conducted in laboratory animals.

The study, carried out on 960 genetically diverse mice that were subject to graded levels of caloric restriction (20% and 40%) and intermittent fasting (1 and 2 days fasting per week), found that these regimens did cause weight loss and related metabolic changes.

However, other factors, including immune health, genetics, and physiological responses to restriction, seemed to better explain the link between cutting calories and increased lifespan. (Dietary restriction impacts health and lifespan of genetically diverse mice, *Nature*, October 9, 2024)

"The metabolic changes are important," Gary Churchill, a mouse geneticist at the Jackson Laboratory in Bar Harbor, Maine, who co-led the study, told *Nature* news. "But they don't lead to lifespan extension." The results drive home the intricate and individualised nature of the body's reaction to caloric restriction, the *Nature* news report said.

The study with mice

It is well known that long-term limits on food intake lengthens lifespan in lab animals. Some studies have suggested that intermittent fasting, or short bouts of food deprivation, can also increase longevity. To study how such diets work, the researchers monitored the health and longevity of the mice, some of which were put on calorie-limited diets, and others on intermittent fasting regimens. A control group of mice was allowed to eat freely.

Cutting calories by 40% yielded the longest longevity bump, but intermittent

fasting and less severe caloric restriction also increased average lifespan. The dieting mice also displayed favourable metabolic changes, such as reductions in body fat and blood sugar levels, the study found.

Role of immune health

However, the effects of dietary restriction on metabolism and lifespan didn't always change in lockstep. To the authors' surprise, the mice that lost the most weight on a calorie-limited diet tended to die younger than did animals that lost relatively modest amounts.

This suggests that processes beyond simple metabolic regulation drive how the body responds to limited-calorie regimens, the authors report. What mattered most for lengthening lifespan were traits related to immune health and red-blood-cell function. Also key was overall resilience, presumably encoded in the animals' genes, to the stress of reduced food intake.

"The intervention is a stressor," Churchill explained. The most resilient animals lost the least weight, maintained immune function and lived longer.

Why findings matter

The study findings could reshape how scientists think about studies of dietary restriction in humans. In one of the most comprehensive clinical trials of a low-calorie diet in healthy, non-obese individuals, researchers found that the intervention helped to dial down metabolic rates — a short-term effect thought to signal longer-term benefits for lifespan.

But the mouse data from Churchill's team suggest that metabolic measurements might reflect "healthspan" — the period of life spent free from chronic disease and disability — but that other metrics are needed to say whether such "anti-ageing" strategies can truly extend life.

ENS, WITH NATURE

THE NOBEL PRIZES 2024

Why nations fail or succeed

The laureates in the economic sciences have demonstrated the importance of societal institutions for a country's prosperity, the Nobel committee said. Societies with a poor rule of law and exploitative institutions do not generate growth or change for the better. Where does India fit into this understanding?

UDIT MISRA

NEW DELHI, OCTOBER 14

THE ROYAL Swedish Academy of Sciences on Monday awarded the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel for 2024 to three US-based economists — Daron Acemoglu, Simon Johnson, and James A Robinson — "for studies of how institutions are formed and affect prosperity". The Nobel citation states the three economists "have helped us understand differences in prosperity between nations".

The big question...

Why are some nations rich and others poor? Why do some nations fail while others succeed in achieving prosperity? These are questions that have puzzled economists for decades.

Over the years, many explanations have been put forward — everything from biology to geographical location to climatic conditions to evolution has been offered as the reason why some nations have done better than others. Of course, since many nations that are relatively poor today weren't so in the past (some were in fact, quite rich), any particular answer also depends on what time period is considered when analysing the question.

Yet the question itself remains relevant. As the Academy noted: "The richest 20 per cent of the world's countries are now around 30 times richer than the poorest 20 per cent. Moreover, the income gap between the richest and poorest countries is persistent; although the poorest countries have become richer, they are not catching up with the most prosperous. Why?"

...And the answer

This year's laureates in the economic sciences have demonstrated the importance of societal institutions for a country's prosperity. By institutions, the laureates refer to the broad set of rules that govern the behaviour of individuals in a society or a country. "Societies with a poor rule of law and institutions that exploit the population do not generate growth or change for the better," states the citation.

The three laureates have distinguished between inclusive and extractive institutions. An inclusive institutional framework

NOBEL PRIZE IN ECONOMICS: 'FOR STUDIES OF HOW INSTITUTIONS ARE FORMED AND AFFECT PROSPERITY'

DARON ACEMOGLU, 57
Professor at MIT; PhD from London School of Economics

SIMON JOHNSON, 61
Professor at MIT Sloan School of Management; PhD from MIT

JAMES A ROBINSON, 64
Professor at University of Chicago; PhD from Yale University

refers to the existence of democracy, law and order, protection of property rights, etc.

By contrast, an extractive institutional framework typically refers to a lack of rule of law, of power being concentrated in the hands of a few (autocracy or dictatorship), and the associated risks of expropriation.

These two opposite types of institutional frameworks lead to very different incentives for people in an economy or society. For instance, if people are assured that their property will not be taken away at will, or that their incomes and profits will be protected for generations, they tend to focus on boosting long-term growth and prosperity. In the absence of an inclusive institutional framework, the incentives collapse, undermining long-term prosperity.

Available evidence

How do we know that the causality flows from the existence of institutions to economic prosperity and not the other way round? Moreover, how can one be sure that there is a causality at all? Further, rich countries are different from poor countries in many ways — not just in type of institutions they have — and these differences could, in turn, be affecting both their institutions as well as their economic growth.

The laureates examined the European colonisation of large parts of the world, and summarised their findings in a paper titled 'The Colonial Origins of Comparative

Development: An Empirical Investigation', which was first published in *The American Economic Review* in 2001.

They found that one important explanation for the current differences in prosperity is the political and economic systems that the colonisers introduced, or chose to retain, from the 16th century onward.

More precisely, they found that "in some colonies, the purpose was to exploit the indigenous population and extract natural resources to benefit the colonisers", while in other cases, "the colonisers built inclusive political and economic systems for the long-term benefit of European settlers".

This effect can be understood in relation to what happened in India under British rule. As the Academy notes, as late as the mid-18th century, industrial production in what is now India was higher than in the US. "This has changed fundamentally since the start of the nineteenth century, which speaks to the reversal primarily being a result of differences in institutions. The technical innovations sweeping across the world were only able (to) take hold in places where institutions had been established that would benefit the wider population," it says.

Rationale for choices

Why did the colonisers choose to have one set of rules (institutions) in one colony and another set in another colony? The researchers found that the choice of institu-

tions by the colonisers — regardless of who they were — was linked to their mortality.

If the numbers of their being killed were high — either because the local population was large in numbers and capable of killing or because the region was home to diseases like malaria — the colonisers chose extractive institutions because they were unwilling to settle down in the colony. If instead the mortality rate was low, they chose inclusive institutions that gave people a say, an ability to build a future, and possibly even a fortune.

Present-day India

Independent India is run in accordance with its Constitution. It holds regular and fair elections, and has an independent judiciary and a vibrant mainstream and social media.

In 2013, soon after the release of Acemoglu and Robinson's book *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, Avind Subramanian, who later became India's Chief Economic Advisor, wrote an article in *American Interest*, where he argued that neither India nor China fit this narrative.

That's because China had grown quite rich despite not having any inclusive institutions, while India had barely grown notwithstanding all its inclusive institutions — and together these two countries accounted for a third of humanity.

The counter, as Subramanian noted in his piece, could be that China's growth spurt is just a matter of the past three decades, and India could achieve its economic potential in the next three — even as China falters in the absence of inclusive institutions. To some extent, both these things have happened.

On Monday, Acemoglu was asked about the state of institutions in the US and the rest of the world. He said: "If you look at the data collected by international organisations such as Freedom House, V-Dem (Varieties of Democracy) or others, they show that institutions everywhere (in the world) are getting weaker and weaker. If you look at data from surveys that ask people their views about authoritarianism, dictatorship, democracy, and so on, you see that support for democracy is at an all time low... I think it is a time when democracies are going through a rough patch and it is crucial that they regain the high ground of better and cleaner governance and delivering the promise of democracy to a broad range of people".

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Why SpaceX 'catching' Starship booster with robotic arms is significant

ALIND CHAUHAN
NEW DELHI, OCTOBER 14

A PAIR of giant robotic arms caught the more than 70-metre-long first stage booster of SpaceX's Starship on Sunday, bringing Elon Musk's company a step closer to its goal of building a fully and rapidly reusable rocket system.

What is Starship?

Starship is a two-stage heavy lift vehicle comprising a booster (called Super Heavy), and an upper section (the Starship spacecraft).

Together, the rocket system is nearly 120 metres tall, making it the largest rocket ever — taller than even the Saturn V (111 metres), which took Neil Armstrong to the Moon. For perspective, the Qatub Minar is 72.5 m tall, roughly the length of the first stage booster that was caught on Sunday.

Starship is designed to carry crew or

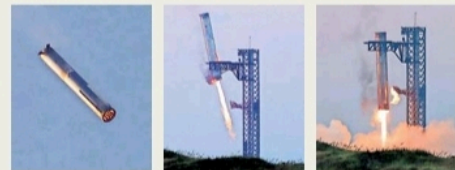
and cargo to Earth orbit, the Moon, Mars, and beyond, and once fully operational, can revolutionise space travel.

What was the mission on Sunday?

The rocket system lifted off from Starbase in Boca Chica, Texas at 7:25 am local time on Sunday with the help of Super Heavy's 33 methane-burning Raptor engines. This was the rocket system's fifth test launch.

Three minutes and 40 seconds after the launch, the booster detached from Starship, flipped, and restarted 13 Raptors to return towards the Texas coast. Rather than splashing down in the ocean (as is generally the case with first stage boosters), SpaceX wanted to land Super Heavy safely at the launch site.

The booster slowed down to its speeds of more than 27,350 km/hr, descending at an angle, before straightening as it approached the gantry (the structure supporting a rocket before its launch). The



Super Heavy straightened before being caught by giant robotic arms. Reuters

gantry's arms, which have been given the moniker of "Mechazilla", literally caught the descending booster, when they switched off its engines.

Meanwhile, the Starship spacecraft continued to head to space, powered by its six Raptors. It completed one revolution around Earth, before carrying out a controlled, on-



target splashdown in the Indian Ocean.

Why was this mission significant?

Most rocket systems are expendable, meaning they can be used only once. This makes rocket launches quite costly and time-consuming. For decades, engineers have attempted to devise reusable space

vehicles — but with limited success.

SpaceX is the latest space organisation to want to transcend the limitations of expendable rocket systems, by creating a system that is fully and rapidly reusable. Catching the Super Heavy is a milestone to this end. In future, the company hopes it will be able to rapidly stack a Starship spacecraft back on top of the landed booster, allowing the rocket to launch again, almost immediately.

In an interview to YouTube channel *Everyday Astronaut*, Musk said that his vision is that Mechazilla will one day be able to turn around and set a rocket back on the launchpad, perhaps as little as 30 minutes after touchdown.

Notably, over the years, SpaceX has mastered the process of landing its smaller workhorse rocket, the Falcon 9. That process, however, is very different, with the booster landing on specially-built platforms using landing legs strapped to its side, rather than being caught in mid-air.

Why is Starship important for the future of space travel and exploration?

Starship is a key part of SpaceX's plans to send astronauts and/or cargo to celestial bodies. The company wants to use the Starship HLS (Human Landing System) to take NASA astronauts back to the moon by 2026 as a part of the Artemis III mission. SpaceX has received government contracts worth up to around \$4 billion to complete the task, according to a report by CNN. Eventually, SpaceX hopes that Starship will put the first humans on Mars.

However, before executing these ambitious plans, the company needs to prove that Starship is safe and reliable, while keeping costs low. Historically, this has been a daunting task for space flight programmes.

For instance, while NASA's Space Shuttle programme (which ended in 2011) comprised partially reusable space vehicles, the cost of maintaining and refurbishing space shuttles turned out to be far greater than that of launching expendable rockets.

SCIENCE

Researchers zero in on how the TB bacteria evade immune response

Mycobacterium tuberculosis bacteria keep themselves protected in clusters called tubercles surrounded by lipids in the lungs. Though it is known as a respiratory pathogen, it can spread to other tissues and also stay dormant in cells for up to a few decades without causing disease

Somdatta Karak

Tuberculosis (TB) is a major focus in India's healthcare goals. The country is steadily improving its ability to diagnose and track TB patients and help them adhere to the long course of antibiotics required to treat it. But with increasing antimicrobial resistance in *Mycobacterium tuberculosis* (Mtb), the pathogen that causes TB, many existing antibiotics aren't working as effectively to kill it. So researchers are studying Mtb to identify its important proteins and then design new drugs that can act against them.

A companion over millennia
This is not an easy problem to solve. The pathogen has coevolved with humans for millennia. Researchers have found the Mtb complex was present as long as 70,000 years ago. Such a long relationship between the two species has allowed the microbe ample time to evolve and trick the human immune system in many ways.

One of them is its ability to grow in macrophages. The first line of human immune cells that destroy many other invading microorganisms are actually Mtb's home. Macrophages are designed to engulf foreign particles, including microbes. They can initiate a plethora of chemical reactions involving peroxides, free radicals, and other compounds that break down the engulfed particle or microbe. These reactions often collectively induce a state called oxidative stress and alter the chemical nature of molecules, including the DNA, the RNA, and/or the proteins of life-forms, rendering them dysfunctional or even literally broken up. Macrophages also use diverse strategies to starve the engulfed microbes of essential nutrients, eventually killing them.

But these techniques don't work against Mtb. Mtb keeps itself protected in clusters called tubercles (hence the name of the disease) surrounded by lipids (fatty substances) in the lungs. Though it's a respiratory pathogen, it has been known to spread to various other tissues. It can also stay dormant in the cells for a long time, up to a few decades, without causing disease or spreading to other people.

Enzymes of particular interest
Researchers believe Mtb's many survival abilities are a result of its large genome, consisting of 4.4 million base pairs. To compare, the respiratory bacteria *Staphylococcus aureus* has 2.8 million base pairs and *Streptococcus pneumoniae*, 1.9 million to 2.7 million. A larger genome means more proteins. Scientists are yet to understand the role of many Mtb proteins – but they believe Mtb's genetic and protein machinery allows it to lead an independent life once it finds a home inside the macrophages.

Scientists are intrigued by whatever allows Mtb to survive and persist in the macrophage's hostile environment and are on the lookout for proteins that shield it. One category of proteins called the cysteine synthase enzymes is of particular interest. They help cells synthesise cysteine, a sulphur-containing amino acid. Cells use cysteine to make antioxidants, whereby the sulphur



A 3D illustration of *Mycobacterium tuberculosis* bacteria. Researchers believe their survival abilities are a result of its large genome, consisting of 4.4 million base pairs. GETTY IMAGES/ISTOCKPHOTO

disrupts the reactions that cause oxidative stress.

Where there's a Cys, there's a way

A study published on August 29 in the journal *eLife* by researchers at the CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad, explored the role of different cysteine synthases in Mtb. The researchers grew Mtb in a bacterial growth medium and restricted its access to nutrients. Then they created oxidative stress conditions in the dish (by adding certain compounds) and looked for genes whose expression patterns changed as a result. This is how they found Mtb's cysteine synthase genes are expressed more during oxidative stress.

Mtb has at least three cysteine synthase enzymes. They make cysteine in cells through different chemical reactions. The scientists found that two of the enzymes, called CysK2 and CysM, significantly influenced the microbe's survival during nutritional deficiency and oxidative stress. They also found Mtb's ability to produce various antioxidants was impaired when the researchers knocked out the genes used to make either of the two synthases.

It is nearly impossible to get human lung tissue infected for an experiment. Instead, the researchers infected mice with the wild-type Mtb and mutant Mtb. After allowing the bacteria time to infect the mice and for the mice's immune systems to respond, they measured the amount of bacteria in the two groups. They found the wild-type Mtb survived better in the mice than the mutant Mtb. They also found similar effects when they infected just macrophages from the lungs

The Mtb complex was present 70,000 years ago. Such a long relationship between the species has allowed the microbe time to evolve and trick the human immune system in many ways

and the spleen. (The spleen is the first organ; after the lungs, Mtb infects by moving through the bloodstream.)

When the research team checked the pathogen's survival in mice mutated to not develop oxidative stress, they found it didn't matter if Mtb had the cysteine synthase. That is, Mtb with and without the cysteine synthase grew equally well in such mice.

Undermining Mtb's survival

A study in 2017 by researchers at the Karolinska Institute, Stockholm, reported a list of 71 compounds that could inhibit the cysteine synthases. Researchers at Vinay Nandicoor's lab at CCMB tested these compounds against Mtb and found they all inhibited Mtb to some extent. Fortunately, these inhibitors also made isoniazid, a known bacteria-killing drug, more potent against Mtb and together made for a strong antibiotic cocktail.

Humans don't have cysteine synthase enzymes, so these inhibitors could be promising targets for new antibiotics. The study was conducted together with Luiz Pedro Sório de Carvalho's lab at the Francis Crick Institute, London.

In addition to cysteine synthases, scientists around the world are studying other ways Mtb survives the macrophage environment. For example, they are

examining the roles of phosphates and carbon metabolism, which are central to Mtb's life-cycle. Some are exploring how Mtb develops a cell wall strong enough to withstand oxidative stress. Some groups are unearthing details about how Mtb stops the production of molecules that lead to oxidative stress; tricks a host macrophage into secreting damage-repair molecules (which macrophages produce to protect and revive immune cells from oxidative stress) sooner; or stays in the macrophages without activating its immune responses.

Through many doors at once

Some interesting new studies have also revealed how the bacteria erase the epigenetic memory of macrophages, i.e., healthy macrophages' ability to make chemical changes to their genomes and pass it on to their daughter cells.

This ability allows the new cells to identify an ongoing or a past infection and get rid of it faster. Without this memory, newly formed macrophages aren't preconditioned to face an Mtb infection.

All these studies are together demystifying Mtb, like keeping many doors open through which to chase out the TB menace. For these possibilities to actually translate into treatments on the market, there are many unfulfilled steps – including finding ways to perform these studies with human cells – and India needs to focus on them.

(Somdatta Karak, PhD, is the head, Science Communication and Public Outreach, CSIR-Centre for Cellular and Molecular Biology, Hyderabad. somdattakar@ccmb.res.in)



Workers dig a firebreak to contain a forest fire at Sviati Hory National Park, Donetsk, Ukraine, in July this year. REUTERS

War turns Ukraine's forests into a hellscape

Reuters

Russia's war against Ukraine has brutalised the latter's landscape and much of its 100,000 sq. km. of forest. Both Russian and Ukrainian armies blast thousands of shells at each other every day, shredding the earth in grinding combat that echoes the trench warfare of World War One.

The conflict has innovated in destruction, too. Two videos posted in September by a unit from Ukraine's 108th Territorial Defence brigade showed a small drone trying to flush out Russian troops by spraying a glowing, red-hot substance onto a long line of trees and setting them alight.

The director of the Sviati Hory national park, Serhiy Prymachuk, said Russian munitions had burnt vast tracts of the area, once a rare and beloved beauty spot in a heavily industrialised region.

Tending to forests is now a perilous occupation, with mines and unexploded shells hidden in the ground posing the biggest threat.

In northern Ukraine's Chernobyl nature reserve, the pre-war population of over 100 Przewalski's horses – a globally endangered species of wild horse – has been hit hard by the conflict, according to Oleh Lystopad, an ecologist with an advocacy group who said landmines were making it difficult to extinguish fires.

Protecting the environment isn't the highest priority for a country fighting to repel an invading army in a conflict that has claimed tens of thousands of lives. The damage to forests is nonetheless part of a broader trail of environmental

About 425,000 hectares of forest across the country have been found to be contaminated by mines and unexploded ordnance, an area half the size of Cyprus

destruction caused by the war, which could leave a bleak natural legacy for decades to come, having poisoned the earth and rivers, polluted the air, and left vast tracts of the country riddled with mines, according to experts.

The conflict has compounded destruction of Ukrainian forestland by longstanding factors such as illegal logging. Aerial bombardment has sparked large fires, while some forests near the frontline have been shelled so intensively that they have been reduced to a field of stumps.

The dense pine forests common to eastern Ukraine catch alight easily and have been decimated by the conflict, said Brian Milakovsky, a U.S.-based forester who until recently lived and worked in Ukraine for eight years.

Milakovsky said the environmental crisis was particularly acute in Russian-held areas – nearly a fifth of Ukraine – where occupation authorities appeared to have little capacity to extinguish forest fires. He estimated that about 80% of the pine forests in the eastern region of Luhansk had been destroyed.

About 425,000 hectares of forest across the country have been found to be contaminated by mines and unexploded ordnance, an area half the size of Cyprus, according to the environment ministry.

The current official estimate is that denuding all contaminated territory, including forests and other areas such as agricultural land, would take 70 years.

Four ecologists with expertise in Ukrainian forests said the subsequent process of regenerating damaged areas would be complex and could take more decades, plus require billions of dollars in investment.

THE SCIENCE QUIZ

Siva Shakthi A.

QUESTION 1

Artificial neural networks are modelled on neural networks in animal brains. In brains, the connections between neurons that transmit signals are called _____ in artificial neural networks. Likewise, _____ describe the strength of connections between nodes and how much one node influences another. Fill in the blanks.

QUESTION 2

The fame of the unsupervised deep learning model Geoffrey Hinton developed in 1985 transcended the scientific community when it was used to forecast user ratings for films during the Netflix Prize, organised from 2006 to 2009. Name the model.

QUESTION 3

In an artificial neural network called a Hopfield network, the system strives to move to a low-energy state, in the process removing noise from some input signal to produce an enhanced output signal. The generic name for these low-energy or, more broadly, desirable end states is _____ – a term also encountered in the dynamics of chaotic systems.

QUESTION 4

The work that won the 2024 Nobel Prize for chemistry addresses a challenge illustrated by a paradox called X: that it is computationally impossible to predict all the possible ways in which a protein will fold within the time the protein takes to achieve its correct folded state. Name X.

QUESTION 5

To estimate how a protein might fold, the

AlphaFold deep-learning model studies _____, a term that refers to the arrangement of the protein's corresponding DNA, RNA, and amino-acid sequence to reveal similar portions. Fill in the blanks.

Answers to October 10 quiz:

1. DNA molecules enter this phase when in a saline solution – **Ans: Liquid crystal**
2. Altering this property can change alpha graphite to beta – **Ans: Shear strength**
3. Sites within diamonds of interest in quantum computing – **Ans: Nitrogen vacancy centres**
4. Crystals with fivefold symmetry that is aperiodic – **Ans: Quasicrystals**
5. Crystal types made of materials with different refractive indices – **Ans: Photonic crystals**

Visual: **Dorothy Hodgkin**

First contact: K.N. Viswanathan | Tanisha Pavalya | Dalbeer Pharswan | Anmol Agrawal



Visual: Name the person depicted in this image. He introduced a famous theoretical concept in a 1950 paper in an effort to assess a machine's ability to display human-like intelligence. CREDIT: JON CALLAS

Please send in your answers to
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For feedback and suggestions
for 'Science', please write to
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Taking guard

RBI's price worries may be warranted but growth concerns are emerging

In a 5:1 majority verdict, the Reserve Bank of India's Monetary Policy Committee (MPC), last week, decided to hold benchmark interest rate at 6.50%, the same level it has been since April 2023. One of the three newly inducted external members in the panel pushed for a 25 basis points (0.25 percentage points) rate cut, perhaps citing the decline in the headline inflation rate below the RBI's median target of 4% in July and August. However, the MPC termed this downward trajectory of inflation as slow and uneven, and expected this moderation to reverse from September, as it has, to hit a nine-month high of 5.3%. The panel has not altered its 4.5% projection for retail inflation and its GDP growth estimate of 7.2% through 2024-25, but has reworked the math. In the second quarter or Q2, it expected inflation to average 4.5% instead of 4.4%, but the September number takes it over 4.2%. In Q3, inflation is now expected to average higher at 4.8% from the MPC's August estimate of 4.7%, before easing to 4.2% between January and March 2025. While the MPC has unanimously agreed on switching the monetary policy's hawkish stance to 'neutral', going by these numbers, hopes of a rate cut at the next policy review in December remain slim, especially as the panel has reiterated that it remains "unambiguously" focused on durably aligning inflation to the 4% mark.

While food inflation remains a worry, with vegetable prices spiking again, the central bank Governor Shaktikanta Das has also flagged that core inflation (excluding food and energy costs) has bottomed out. Global oil and metal prices are fresh headaches to fret about, along with the ever-looming threat of climate shocks. Perhaps, if these risks remain only on paper, it is plausible to expect a rate cut in February. It is instructive that the RBI Governor only made a tangential reference to the US Federal Reserve's slashing of interest rates by a sharp 50 basis points last month as a "policy pivot", indicating that domestic trends will determine the bank's approach. But with the European Central Bank likely to cut interest rates too, and U.S. inflation dropping to a three-year low, prompting talk of another rate cut soon, the RBI may have to act faster. Notably, though it remains more bullish than most agencies on India's growth trajectory, there are clear signs of a cooling in economic activity in the first half of this year, with stuttering car sales reflecting weaker urban consumption and industrial output slipping into contraction in August. If the tide does not turn on this front, the MPC, that has vowed to keep supporting growth while reining in inflation, could have an unenviable dilemma on its hands in the coming months.

A Korean win

A Nobel raises Korean prose to success levels of its drama and music

By awarding the Nobel Prize in Literature to South Korean poet and novelist Han Kang this year, the Swedish Academy has done two things. It has looked eastwards, after going with European writers Jon Fosse and Annie Ernaux in the past two years; and it celebrates an "innovator in contemporary prose". While announcing the name, the academy lauded the 53-year-old writer, the first Korean to win the Nobel Prize in Literature, "for her intense poetic prose that confronts historical traumas and exposes the fragility of human life". With the human condition as her muse, specifically the question why and how humanity encompasses unspeakable depravity as well as indisputable acts of dignity and kindness, Han Kang has experimented with form and style to tell her stories. Her best-known work available in English is her 2007 novel, *The Vegetarian*, translated by Deborah Smith, and released in 2015. Winning the International Booker Prize in 2016, a decade after it was first published in Korean, the radical story about a woman who gives up eating meat and finds solidarity only in the plant world, paved the way for her other novels to be translated into English and many other languages. Han Kang, who was born in the South Korean city of Gwangju, moved to Seoul when she was nine years old and studied Korean literature at university.

Growing up amid books – her father is a novelist – she decided to follow in his footsteps but her artistic forays include art and music, which she uses in her narratives and word images. This is evident, for instance, in her 2016 novel, *The White Book*, where an unnamed narrator talks about grief – the death of an older sister "less than two hours into life" – through white objects including snow, salt, moon-shaped rice cake, fog and breast milk. Her latest novel, *We Do Not Part*, to be published in English early next year, is the story of a friendship between two women in the backdrop of the 1948 massacre in South Korea's Jeju Island. A massacre from the 1980s of students and dissenters is also the setting for her most political novel, *Human Act* (2016), in which souls of the dead are allowed to "witness their own annihilation". Ever since the prize was handed out to American singer-songwriter Bob Dylan in 2016, the academy has been trying to pull itself back to purists. By picking Han Kang, the academy may have a winner who, in her experimental style, conveys the power of literature to break barriers. The prize will inevitably draw more attention to Korean literature – its dramas, cinema and music have been already ruling the globe ever since South Korean singer Psy burst forth with 'Gangnam Style' in 2012.

Israel's brutality in Gaza, India's pin-droplet silence

October 7, 2024 marked one year of Israel's war on Gaza and its relentless bombing of the Gaza Strip killing nearly 42,000 people. The prime victims of the heartless war have been civilians, women and children in Gaza, West Bank and now Lebanon; 16,705 Palestinian children have been killed, the largest in any conflict in one year. This has brought out millions in mass demonstrations in the major cities of Europe, the United States and beyond, politicising a generation of people in opposition to Israel, and also making it one of the greatest issues of our time.

New Delhi's disturbing response

However, these genocidal actions have hardly provoked any reaction in India. The war itself was a response to Hamas's horrific attack on Israel that killed over 1,200 people and where more than 200 people were taken hostage. But the scale of what Israel has done in response is even more horrific. Public silence in India over the brutal retaliation in Gaza, flattening the territory to rubble, and displacing the entire population several times, is deeply disturbing. This should be unacceptable, especially in a country which led the largest anti-colonial struggle in the world, stood shoulder-to-shoulder with scores of countries in their struggle for independence, and once was a true friend of Palestine. One of the first non-Arab countries to recognise the Palestine Liberation Organization (PLO), India today seems closer to Israel and its biggest benefactor, the U.S. India has witnessed very few sustained protests or public expressions of distress at what is happening in Palestine. There has been nothing like the scale of anger displayed in many other countries. Kerala has seen two big rallies, in Malappuram and Kozhikode. Other than these, and a few small protests in Kolkata and Chennai, there has hardly been any in the other States. India, it seems, is not outraged at how Israel is treating the Palestinians.

No doubt, the government has curbed protests and, in many cases, banned them. There is an active attempt to prevent people from protesting against what is happening in Gaza. Cases have been filed against people for supporting or organising protests against the genocide in



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Palestine. Charges range from organising rallies to displaying Palestinian flags and posting pro-Palestine content on social media. But a similar crackdown on other protests has not deterred people from taking to the streets on crucial issues.

Shaped by the elite

The Hindutva right's subordination of the Palestine cause and supporting the Zionists in Israel is the most important reason for the lack of concern. India has moved from backing the Palestinians to more or less unqualified support for Israel. This shift has influenced how most Indians view the crisis in Gaza. In the radically changed political atmosphere, the violence in Palestine does not seem to evoke the same response as in the past. This, however, does not mean that the sentiment does not exist. But the crisis in Gaza and India's subdued response to it points to a significant fact. The register of Hindu nationalism deliberately sees Palestine as a Muslim issue, which means any support for it can be condemned as appeasement of a community. Individual Opposition leaders have, nonetheless, spoken up in support of Palestine but hardly any Opposition party has taken an unequivocal stand on it. Left parties have unequivocally condemned Israel, organised a few modest protests, and also supported the Boycott, Divestment and Sanctions (BDS) campaign.

But not just parties, even civil society response in India has been muted. This subdued response is largely attributable to the waning influence of anti-imperialism in India and the declining interest in the developing world and the periphery. Political interest is focused on the U.S. with the Indian government making every effort to maintain close relations with the U.S. and vice versa. The U.S. is especially interested in courting India as a powerful counterweight to China and promoting it as a world power. This matters greatly to the upper and middle classes that care deeply about India's position in the global hierarchy of states. Not surprisingly, other foreign news usually gets short shrift. Yet, for the past year, the country's television channels have provided full coverage of events in Israel and Gaza, but mostly from Israel's perspective,

invoking the prism of fighting terrorism and sidelining the core political issues. This suits the elite that supports the shifting stance on Palestine while ignoring the twin frames of colonisation and decolonisation driving this conflict.

In its place, there is much greater acceptance of the official line that the central issue is fighting terrorism. As a corollary, India must then support this given that we are victims of terrorist attacks from across the border. But the problem in Palestine did not start on October 7; there is a much wider historical context, which liberal and right-wing apologists, whether western or Indian, are reluctant to accept. The fact that the problem has been caused by settler colonialism and occupation is duly ignored, indicating an unwillingness to recognise the violent dispossession of the Palestinians out of their homeland in 1948 through expulsion and ethnic cleansing and the continuation of that violence through the last few decades. Hamas's attack has served as an excuse for Israel to do what it wants with strong American support which has sought to control West Asia through Israel – their indispensable outpost in the Muslim world.

Ties with Israel

In the recent past, however, India tempered any expression of support for Israel with expressions of concern for the Palestinians' plight. Not any more. The shift reflects India's growing technological, defence and commercial ties to Israel. Cooperation between the two countries has been deepening ever since Israel provided India with military help during the Kargil war against Pakistan in 1999. The imbrication of its defence and intelligence networks with those in India serves as an important conduit for deepening India's political alignment with the U.S., accelerating it to the point of a strategic relationship.

The massive violence that Israel has inflicted on Palestine is shocking. If we are not outraged by Israel's lack of humanity, its illegal occupation and annexation and ethnic cleansing in Palestine, even as we watch it being live-streamed on television and on social media, then we are also complicit in it. It is as if the moral architecture of liberalism and human rights has ceased to exist.

Ensuring a proper social safety net for the gig worker

The Union Ministry of Labour and Employment is drafting a national law to incorporate gig workers into social security schemes, offering benefits such as health insurance and retirement savings. The government is expected to require aggregators to contribute 1%-2% of their revenue to establish a social security fund, which would provide health insurance and other benefits. The government is also revising the definitions of gig and migrant workers to make them more inclusive and reflective of current employment realities.

The proposed legislation will establish a welfare board model, creating a fund for the social security of gig workers. It mandates the registration of all gig workers and requires aggregators to give a 14-day notice, with valid reasons before termination, while ensuring transparency in automated systems. Dispute resolution mechanisms will also be introduced to protect gig workers' rights.

The Labour Minister also pointed out that aggregator companies that employ gig and platform workers will be asked to take the lead in registering their workers on the portal. Workers registered on the Labour Ministry's e-Shram portal are eligible for life and accidental insurance, along with other benefits.

Labour codes

In this context, it can be mentioned that India formulated four new labour codes in 2019 and 2020. These codes essentially simplified and rationalised existing labour laws and enabled 29 central labour laws to be merged in four broad codes: namely, wage, social security, industrial relation and occupational safety health working conditions. The only code where gig and platform workers found mention is the Social Security Code 2020.

In this code, gig and platform workers are perceived as subset of informal sector workers. Accordingly, the said code provided for the formulation of social security schemes for gig and platform workers by the central government. Further, like informal workers, gig workers ought



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to register themselves under the e-Shram portal through self-declaration.

Worker definition

The issue arises from the definition of gig workers in the Social Security Code 2020, which places them outside the traditional employer-employee relationship. This is problematic since many gig employers, as in some of the well-known companies, operate as formal entities within the formal sector. The exclusion of gig workers from the traditional employment framework is the crux of the problem.

It is a deliberate ploy on the part of the "aggregator" to demystify employment relations in gig and platform economies such as the application of existing labour laws get pre-empted. In a gig economy, employment relations remain ambiguous and workers are categorised as independent workers or contractors.

Such camouflaging of employment relations leads to the misconception that the gig worker is an independent worker. The Social Security Code 2020 accepts this deception and includes gig workers as part of the informal sector. The Code does not decipher the real employment relation in the gig and employment economy.

Also, there is a huge difference in terms of entitlement between institutional social security and social security schemes. For example, formal workers get 26 weeks of paid leave along with job security for the entire period of maternity under the Maternity Benefit Act, 1961. This is a part of institutional social security coverage.

Under social security schemes, for maternity benefits, there is a cash benefit such as ₹5,000-₹10,000 given to registered informal workers. The gap between an institutional social security and a social security scheme in terms of entitlement is very clearly evident. The Social Security Code 2020 sets to protect gig workers with only certain social security schemes but not institutional social security.

Similarly, other forms of institutional protection such as minimum wage protection are common

missing for gig workers. Occupational safety and health regulations do not apply for gig workers. Gig workers are not included under the Industrial Relations Code 2020 and are not covered under the dispute resolution mechanism provided thereunder.

The cornerstone of protection under labour laws is the explicit employment relation. This is what is not defined for gig work in the Indian context. Pieces of legislation introduced in recent times in States such as Rajasthan and Karnataka also suffer from this particular lacuna.

The core issue

If the Union Ministry of Labour and Employment is serious about protecting the interests of an ever increasing number of gig workers in the country, it should define the employment relation in gig and platform in an explicit manner and remove the veil created by so-called "aggregators". Recognising "aggregators" as employer and reclaiming explicit employment relation in gig work is the key factor.

An important precedent here is the ruling by the U.K. Supreme Court on the Uber case in 2021 – Uber was deemed to be an employer of Uber drivers as "workers" and Uber asked to honour the prevailing labour laws of the land.

Once the employment relationship is clearly defined, gig workers can be included under the proposed four labour codes, eliminating the need for separate legislation. The welfare board model, as suggested by the Union Ministry of Labour and Employment has shown limited effectiveness in the past, particularly with construction workers, who were also classified as informal despite working for formal employers. Clarifying the employment relationship in gig work would further promote the formalisation of workers in this sector.

Moreover, the entire labour code was designed for simplification and rationalisation. Introducing separate laws for specific workforce segments undermines this goal. The key is to recognise the employment relationship in gig work. Once this is addressed, the rest will follow.

LETTERS TO THE EDITOR

Weakening the RTI

It is astounding that there is a huge and growing backlog of appeals and complaints pending in information commissions in India ('Opinion' page, 'Scuttling people's right to information', October 14). The bad attitude and apathy towards the right to information seems deliberate and it may be a matter of time before the Act becomes a dead letter. H. Syed Othman, Tirunelveli, Tamil Nadu

The RTI Act is a formal way to facilitate the flow of vital information to the public. There was sanctity. Unfortunately, the Act has

been weakened. The common man who does not have any political affiliation will assert that the Congress was definitely more transparent and open to public ideas than the BJP. T.M. Uday Shankar, Hyderabad

A victim

The way the system treated a man on a wheelchair is shameful ('Modi govt. responsible for Saibaba death: Left parties', October 14). G.N. Saibaba's long detention behind harsh prison walls has hastened his end. The system itself is on a wheelchair. N.G.R. Prasad, Chennai

Our insensitive criminal justice system and cruel ways of state apparatuses are squarely responsible for the passing of G.N. Saibaba. Even the judiciary added to this with some of its flip-flops. G.N. Saibaba's passing evokes the memory of Father Stan Swamy, who too was a victim of the vengeful attitude of the state towards dissenters. A serious and sustained campaign by the political Opposition should lead to the repair of a deeply flawed criminal justice system. Manohar Alembath, Kannur, Kerala

The passing of scholar and

outstanding teacher G.N. Saibaba shocks both his students and admirers. But did he waste precious years in propagating and supporting violence to establish an egalitarian society in India? Perhaps he could have researched Gandhism too. S. Nagarajan Iyer, Coimbatore

Ratan N. Tata

There is a pall of gloom with business magnate and philanthropist Ratan Navai Tata shedding his mortal coils. I wish to highlight the simplicity of those who occupied the high chair in many of the Tata enterprises. I reproduce a

letter, dated September 12, 1986, from the indefatigable J.R.D. Tata addressed to his nonagenarian pen-pusher: "Dear Mr. Natarajan, I thank you for your letter of August 14 which reached me, a few days ago. I agree with you, that my usage of the words, 'I personally met Jayaprakash' was wrong, but only from the point of view of a purist, I don't agree that it was grammatically wrong. It is one of the many figures of speech in the English language which are common usage. After all, if William Shakespeare can use a 'theological expression', 'This was the most unkindest out of all', a

mere J.R.D. Tata, can I think, be excused for having claimed to have 'personally met someone'. With kind regards, Signed – J.R.D. Tata." Mani Natarajan, Chennai

A tenor king

That Rafeeq Nadal had such a long and prolific career is an achievement in itself. There were many who predicted that his overtly physical style that demanded so much of his body would result in a relatively short career. But the Spaniard could prove them wrong. Nagarajamani M.V., Hyderabad

Text & Context

THE HINDU

NEWS IN NUMBERS

Estimated people who died in Delhi due to air pollution in 2019

17,500 The conclusion was based on a Lancet report. New Delhi ordered a "complete ban" on fireworks in a bid to curb air pollution in the city. NEWS

The estimated number of journalists left in Afghanistan

5,100 This includes 590 women. The Taliban's morality ministry pledged to implement a law banning news media from publishing images of all living things. AP

OPEC makes a third cut in global oil demand forecast

1.93 million barrels per day (bpd) in 2024. This was revised down from a growth of 2.03 million bpd it expected last month. China accounted for the bulk of the 2024 downgrade. NEWS

The Indian rupee weakens to a new record low

84.06 The Indian rupee slipped to an all-time low on Monday, weighed down by a fall in most Asian peers and strong dollar demand from foreign banks. NEWS

Number of special trains introduced by the Northern Railway

2950 The Northern Railway Zone has implemented a robust action plan this festive season to accommodate the surge in demand. ANI
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On Samsung workers' right to unionise

The necessity to form unions is obviously for voicing the demands and grievances of labour. It is therefore the obligation of the State, acting through the Registrar of Trade Unions, as the regulatory authority under the 1926 Act, to register trade unions and give individual workers their voice

LETTER & SPIRIT

Krishnadas Rajagopal

The realisation of their fundamental right to form a registered trade union to collectively bargain for better terms of employment is at the heart of the protests by Samsung India workers at Sriperumbudur in Tamil Nadu. They want to meet the South Korean giant on equal terms across the negotiating table to jointly frame a collective agreement regulating their work conditions.

The State government responded by forming a 'workmen committee' to resolve the problem and resorted to police violence to quell the workers' strike which began on September 9. Labour law expert and Madras High Court lawyer, senior advocate R. Vaigai, pointed out that the State's action was akin to putting the cart before the horse. Legally, she said, the registration of the trade union named Samsung India Workers Union (SIWU) under the Trade Unions Act, 1926 should have preceded the formation of the workmen committee. The unleashing of the police, rather than following the tenets of the 1926 law to register the trade union and facilitate a democratic atmosphere for collective bargaining under the Industrial Disputes Act of 1947, gives the impression that the government is on the side of the Samsung management. On the other hand, the State government and Samsung have alleged that SIWU is backed by the Centre of Trade Unions (CTU). Samsung has further objected to the inclusion of its name in SIWU.

On the right to form a union

The Supreme Court in *B.R. Singh versus Union of India* in 1989 upheld the right to form associations or unions as a fundamental right under Article 19(1)(c) of the Constitution. The State or the courts could "reasonably" restrict the formation of unions, associations, cooperative societies under Article 19(4) of the Constitution only if there is danger to public order, morality, sovereignty or integrity of India. The restrictions must be based on logic and not arbitrary. The necessity to form unions is obviously for voicing the demands and grievances of labour. "Trade unionists act as mouthpieces of labour," the court noted.

It is the obligation of the State, acting through the Registrar of Trade Unions, as the regulatory authority under the 1926 Act, to register trade unions and give individual workers their voice. The benefits of registration under the 1926 Act include immunity from both civil and criminal action. Section 4 of the Act notes that even seven members could apply for registration of their union. Under Section 6, the Registrar has to merely examine whether a trade union's rules conform with the rules of the Act. Speaking at *Frontline*, A. Soundararajan, CITU Tamil Nadu Secretary, has accused the State of "blocking SIWU's registration".

On collective bargaining

The Madras High Court, in *Rangaswami versus Registrar of Trade Unions*, succinctly defined the history and object of the Trade Unions Act as "the organisation of labour to enable collective bargaining". "Collective bargaining is defined in Article 2 of the International Labour Organization (ILO) Collective Bargaining Convention of 1981 as negotiations between employees and employers or their organisations to determine working conditions and terms of employment. The product of successful collective bargaining is a collective



Steadfast protest: Samsung India factory workers enter their 25th day of strike at Sunguvarchatram near Kancheepuram on October 3. VELANKANNI RALLI

agreement. Collective bargaining is statutorily recognised in the Industrial Disputes Act. The Act provides that in case of failure of collective bargaining, the State steps in to refer the matter to a conciliation officer. The case is further referred to a labour court or an industrial tribunal if the conciliation officer does not succeed.

The roots of collective bargaining trace back to the late 18th and early 19th century when the coal miners struggled for basic conditions. Collective bargaining has protected workers' rights post the economic depression of the 1930s and the Second World War to evolve as a norm along with the emergence of the democratic form of governance globally. In India, traces of collective bargaining could be found in the 1918 Ahmedabad Mills strike led by Mahatma Gandhi in which he initiated the formation of a committee of arbitrators drawn from both the workers, who were seeking a wage raise after the revocation of their plague allowance, and their employers.

Eminent labour law scholar Sir Otto Kahn Freund referred to the level playing field offered by collective bargaining with the expression, "power stands against power". Susan Hayter, in an ILO document, termed freedom of association and the right to collective bargaining as fundamental workers' rights. Former U.S. President Franklin D. Roosevelt in a Senate address in 1937 said the "denial or observance of this right means the difference between despotism and democracy". The National Labour Relations Act or the Wagner Act in the U.S. marked the refusal of an employer to

bargain with a workers' union as an 'unfair labour practice'. The same spirit is reflected in the Fifth Schedule of India's 1947 Act, which lists an employer's refusal to "bargain collectively, in good faith, with recognised trade unions" as an unfair labour practice. The celebrated U.S. Supreme Court case, *National Labor Relations Board versus Jones & Laughlin Steel Corp* held that employees have a fundamental right to organise and select representatives of their own choosing for collective bargaining. The court said any act on the part of the employer to prevent the "free exercise of this right" would amount to discrimination and coercion to be condemned by the competent legislative authority.

The Indian Supreme Court has recognised the importance of collective bargaining to achieve social justice in modern industrial life (*Karnal Leather Karmchhari versus Liberty Footwear Company*). The court, in *Ram Prasad Vishwakarma versus The Chairman, Industrial Tribunal*, noted how labour was at a "great disadvantage" before the "days of collective bargaining".

On the right to strike

The right to strike labour is a legal right recognised with certain restrictions under the Industrial Disputes Act. The Supreme Court described strikes as a "form of demonstration" by workers for their rights. For example, they include various forms like 'go-slow', 'sit-in-work', 'work-to-the-rule', 'absenteeism', etc. The court has observed the right to demonstrate and, therefore, the right to strike, as important

weapons in the armoury of workers. The right is recognised by almost all democratic countries. The ILO considers the right to strike as a corollary of the right to organise.

However, the 1947 Act does not recognise the right to strike as absolute. Section 22 prohibits strikes in breach of contract or without giving employer notice within six weeks before striking or within 14 days of giving such notice; or before the expiry of the date of strike specified in the notice or during the pendency of proceedings before a conciliation officer and seven days after the conclusion of such proceedings. In the *All India Bank Employees* case, the Supreme Court said the right to form an association was a "guaranteed" one, but the methods used by the unions to achieve their purposes must adhere to the existing industrial laws of the land.

The criticism against the involvement of CTU in the workers' efforts to register a labour union is countermanded by the provisions of the Trade Unions Act itself. Section 6(e) of the Act provides for not only the admission of "ordinary members" from the workforce of a facility in a trade union but also the inclusion of "honorary or temporary members" as office-bearers to form the executive of the union. Section 16 of the same Act permits the constitution of a separate fund for "political purposes". Under this provision, a registered trade union may constitute a separate fund, from contributions separately levied, to promote the "civic and political interests of its members". The section allows these funds to be used to even pay for a candidate to contest elections to any legislative body constituted under the Constitution. The fundamental right to free speech of the workers includes their right to political expression.

On the 'workmen committee'

While the State Industries Minister claimed the discussions with the committee had led to a resolution, *The Hindu* quoted the striking workers saying the "workmen committee" was composed of employees who backed the company.

Section 3 of the 1947 Act covers the constitution of a 'works committee'. The statute empowers the appropriate government to direct the employer to form a 'works committee' consisting of an equal number of representatives of employers and workers engaged in the establishment. The workers in the committee have to be chosen "in consultation with their trade union, if any, registered under the Indian Trade Unions Act, 1926". The provision is also replicated in the yet-to-be-implemented Industrial Relations Code of 2020. Hence, the law mandates the registration of a trade union before the formation of a works committee.

What is in a name?

Samsung India has complained to the Labour Commissioner that the use of the name 'Samsung' in the SIWU was a violation of the Trade Marks Act, 1999.

Section 29(5) of the 1999 Act states that a registered trade mark is infringed if it is used as the name or part of a trade name or the name or part of the name of a business concern. Trade unions are not trade or business concerns dealing in goods or services. Section 2(b) of the 1926 Act defines 'trade union' as a "combination" primarily formed to regulate relations between/among workers and employers. U.S. courts have evolved the principle of 'noninvasive fair use' which involves utilising as much of the distinguishing design elements of a brand logo to reasonably associate the union and the company.

THE GIST

▼ The Supreme Court in *B.R. Singh versus Union of India* in 1989 upheld the right to form associations or unions as a fundamental right under Article 19(1)(c) of the Constitution.

▼ The Madras High Court, in *Rangaswami versus Registrar of Trade Unions*, succinctly defined the history and object of the Trade Unions Act as "the organisation of labour to enable collective bargaining".

▼ The right to strike labour is a legal right recognised with certain restrictions under the Industrial Disputes Act.

Opinion

A blueprint for safeguarding children

The historic judgment by the Supreme Court of India in a petition filed by the Just Rights for Children Alliance, will have a long lasting and global impact on society, crime, and child rights.

In January 2024, the Madras High Court had ruled that "merely" downloading or watching child pornography is not a crime, and quashed a case against a 28-year-old man. How can someone who searches for and watches the rape of a child, thereby creating a demand for child rape, walk free? This ruling not only defeated the spirit of the Protection of Children from Sexual Offences (POCSO) Act, 2012, but also risked normalising the exploitation of children.

On September 23, the Supreme Court corrected this grave oversight. It was not only in expanding the understanding and scope of the crime by making downloading and storage of such material an offence, but also mandated a comprehensive framework to combat Child Sexual Exploitation and Abuse Material (CSEAM) and placed strict responsibilities on social media intermediaries to comply with Indian law. By shifting the language from child porn to CSEAM, the ruling reframes the issue as a serious crime, rather than an adult indulgence. It further establishes that individuals who search for or download such material create a demand-supply chain that fuels the rape and exploitation of children.

The perpetuity of this crime is alarming, as these images persist online, subjecting children and families to continuous re-victimisation long after the abuse. Even more troubling is that many children are unaware that they have been victimised, as their images are circulated in secrecy.

Measures required While this mandate is a significant victory, it is just the beginning. To



Bhuvan Ribhu

Founder of Just Rights for Children Alliance and petitioner in the Supreme Court judgment on CSEAM

fully realise its impact, the government must implement a comprehensive set of measures to ensure the safety and rehabilitation of children. Current approaches largely focus on punishing those in possession of CSEAM, while the child victims behind these images often remain without support. A globally coordinated, preventive, and protective framework is urgently needed — one that not only targets offenders, but also addresses the ecosystem and the evolving nature of child exploitation.

First, cybercrime should be explicitly defined in Indian laws and CSEAM should be brought within its ambit as an economic and organised crime. Emerging crimes, such as enticement through electronic or digital means, and the resulting trafficking for both forced labour and sexual exploitation need to be explicitly outlawed. The rise of AI-generated child sexual abuse material makes the situation worse as it blurs the line between real and synthetic images, making it difficult for authorities to deliver justice. Legal amendments are required to treat the creation of CSEAM, including AI-generated deep fakes, as equivalent to real child abuse. Without swift action, AI-driven exploitation will pose an even greater threat to children.

Second, social media platforms must be held accountable for reporting CSEAM in real-time to law enforcement. The judgment has mandated that intermediaries report such content to local police and authorities.

Third, India should establish an institutional framework in the form of a forensic lab equipped with cutting-edge technology to respond to the increase in reporting of CSEAM by intermediaries and social media companies. Currently, international agencies, such as Interpol, flag Indian IP addresses to the National Crime Records Bureau, which then passes this information to state authorities. A domestic lab would reduce

response time by allowing India to flag suspicious activity locally and share real-time alerts within Indian and foreign authorities.

Fourth, details of individuals prosecuted for searching or downloading CSEAM should be entered into the National Database on Sexual Offenders and barred from employment in sectors involving children.

A border-less response Most importantly, a border-less crime requires a border-less response. The United Nations Summit of the Future 2024 missed a critical opportunity to address emerging crimes against children. CSEAM is a multibillion-dollar global industry, accelerated by technological advancements. The world must unite to end this crime. To combat CSEAM effectively, we need a legally binding international convention.

By streamlining cooperation between law enforcement, governments, and stakeholders, we can enable targeted interventions to dismantle these networks and protect vulnerable children. Establishing an International Database of Sex Offenders could be a critical step in this direction. Financial institutions also play a crucial role in tracking and disrupting the money trails sustaining these networks. Without coordinated global action and financial accountability, dismantling these systems will remain elusive. Therefore, an international convention binding state and non-state actors is imperative to ensure coordinated response against the economics of this crime, and for identification of perpetrators, their networks, and for rehabilitation of child victims.

This is a watershed moment, offering a blueprint for how nations can take bold and decisive action to safeguard children. When fully implemented, it has the potential to not only transform India's approach but also set a powerful global precedent in the fight against child exploitation.

A strike, and Tamil Nadu's challenge

The State government cannot afford to neglect the interests of workers

STATE OF PLAY

Sanjay Vijayakumar
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The ongoing workers' strike at the manufacturing facility of Samsung, the South Korean electronics giant, in Sriperumbudur near Chennai, appears to have put the Chief Minister M.K. Stalin-led Dravida Munnetra Kazhagam (DMK) government in a spot. The workers have been on strike since September 9, demanding higher wages and union recognition. The demand for recognition of the Centre of Indian Trade Unions (CITU)-affiliated Samsung India Workers' Union (SIWU) has been the key friction point between the striking workers and the company's management. CITU is affiliated to the Communist Party of India (Marxist), a DMK ally.

Last month, Union Labour Minister Mansukh Mandaviya wrote to Mr. Stalin, urging him to bring a "swift resolution" to the strike at Samsung. Mr. Stalin assigned Industries Minister T.R.B. Rajaa, Micro Small and Medium Enterprises Minister T.M. Anbarasan, and Labour Minister C.V. Ganesan to address the issue. In the presence of the ministers, several long meetings were held between the management and workers, and a "settlement" was reached between the company and the workers committee on October 7.

However, CITU rejected the settlement proposal and said that the strike would continue until SIWU is recognised. The police arrested some of the protesting workers and dispersed the others. This move evoked strong criticism from the Opposition parties, such as the All India Anna Dravida



Munnetra Kazhagam, Anna Makkal Munnetra Kazhagam, Pattali Makkal Katchi, and Naam Tamilar Katchi. Even the DMK's allies — the Tamil Nadu Congress Committee, the Marumalarchi Dravida Munnetra Kazhagam, Viduthala Chiruthaigal Katchi, the CPI(M), and Tamizhaga Vazhuvirmal Katchi — have backed the workers. Interestingly, some leaders of the Bharatiya Janata Party in Tamil Nadu have spoken against the CITU protest.

Industry bodies such as the Confederation of Indian Industry Tamil Nadu have said it is vital to reach a swift resolution to maintain the State's industrial momentum and attract investors. The DMK-affiliated Labour Federation has asked CITU not to blow the issue out of proportion.

Mr. Rajaa and Finance Minister Thangam Thennarasu spoke to the media and argued that the issue of union recognition is sub judice and that the State government would take a decision based on the verdict of the Madras High Court. Mr. Rajaa said the management was also ready to fulfil the other demands of the workers, including high-quality food, standard locks, and air-conditioning of all the 108 buses. But they were unsuccessful in convincing the protesters to return to work.

Deputy Chief Minister Ud-

hayandihi Stalin told reporters that Samsung is a multinational company and has refused to recognise a politically backed union. All other demands of the workers have been fulfilled, he pointed out.

The protest has come at a time when the DMK government is projecting Tamil Nadu as a preferred investment destination. The government is said to have attracted investments amounting to 110 lakh crore and generating 31 lakh jobs in three years. The protest, in fact, began when Mr. Stalin was in midst of a visit to the U.S. visit to woo investment. He signed investment packs to the tune of 37,600 crore with various companies during his visit. Ford agreed to resume production, nearly three years after it ceased vehicle production in India, in Tamil Nadu, which was seen as a major win for the DMK government. Tamil Nadu is India's largest exporter of electronic goods.

States are competing for investments. India is trying to take advantage of 'China Plus One', a strategy where businesses are avoiding investing only in China and are seeking to diversify investments and supply chains to other countries. As Indian States are also facing the challenge of youth unemployment, they are trying to attract investments to generate jobs.

While attracting investments is the pitch that Tamil Nadu offers a peaceful industrial environment, the State government cannot afford to neglect the interests of workers. The government of the most industrialised State in the country, as per the Reserve Bank of India, faces a real challenge in balancing the demand of the workers to form a union and the need for industrial development.

Failing U.K. universities rely on Indian student fees to cut deficit

As there is a cap on fees for U.K. students, the fees of foreign students, especially Indians, are increasingly helping universities bridge the gap

DATA POINT

Samay Parthasarathy
Vignesh Radhakrishnan

Last academic year, about one third of the universities in the U.K. ran deficits. A major reason behind the financial crisis is that there is a fee cap for local students, which has barely increased in the last decade. Thus, the colleges are forced to increasingly rely on fees paid by foreign students, which have no cap.

Students from India form the largest share of such foreigners. The fees they pay help subsidise the education of the local students in the U.K. This arrangement is acceptable as long as it is mutually beneficial for foreign students, that is, if foreign students secure well-paying jobs in the U.K. and are able to repay their loans. However, data show that many Indians are getting admission in lower-ranked universities. Last year, the then U.K. Prime Minister, Rishi Sunak, declared a crackdown on "low-quality" courses that "failed to deliver good outcomes" and limited student intake. Data show the effect of such courses on Indian students: the rise of a significant share of the students expire after they finish their course, which forces them to exit the U.K. instead of landing a job.

Chart 1 shows the share of universities in the U.K. that recorded a deficit over the years. In 2021-22, as many as 60% of the universities were in deficit. This came down to 33% in 2022-23, which was still almost double of what it was in 2015-16. Persistent deficit indicates that the universities are not generating funds to invest and innovate.

Chart 2 shows the share of foreign students (non-U.K., non-EU) in the total enrolment and their share in the total fees collected (in %). Both the share of foreign students and their share in total fees have steadily gone up over the years, pointing to

an increasing reliance on them. By 2022-23, 23.7% of the students were foreigners, while their share in fees was about 53%. Notably, while the share of foreign students increased by about 10% points between 2016-17 and 2022-23 (from about 14% to 24%), their share in fees increased by over 16% points (from about 37% to 53%). This shows that the burden on foreign students has increased further.

Chart 3 shows the annual inflow of new students, region/country-wise. With over 1.25 lakh entrants in 2022-23, the number of Indian students surpassed the number of students from China for the first time in at least two decades to constitute the highest share in the country. This means that the disproportionate financial burden on foreign students is borne mostly by Indians.

Chart 4 shows the university-wise number of Indian students enrolled in 2022-23. The bigger and darker the circle, the higher the number of Indians. The circles on the right are better ranked on the Guardian University Guide's 2024 rankings. Clearly, the number of Indians who joined universities in the bottom half of the rankings (49%) is higher than those who joined universities in the top half (41%). The rest 10% of Indians joined universities that were not ranked. Only 4% of Indians joined the universities in the top 10 rankings.

Chart 5 shows the immigration status of Indian students, five years after they entered the U.K. on the "study route". Nearly 70% of the Indian students who arrived in 2018 found that their visas had expired five years later; only 24% got work visas and a few others stayed back to study further. The share of students with expired visas was even higher at over 80% in the years before. With the option of getting a visa for an "indefinite leave to remain" (right to live, work and study in the U.K. for as long as they like) also becoming scarce, the options for Indian students appear bleak.

Funding mediocrity from outside

The data are sourced from the U.K.'s Higher Education Statistics Agency, the Migrant Journey Report 2023 and The Guardian University Guide 2024

Chart 1: The chart shows the share of universities in the U.K. that recorded a deficit over the years (in %)

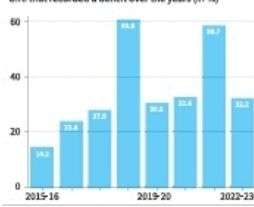


Chart 2: Share of foreign students (non-U.K., non-EU) in the total enrolment and their share in the total fees (in %)

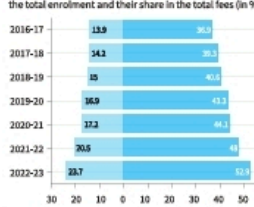


Chart 3: The chart shows the annual inflow of new students, region/country-wise

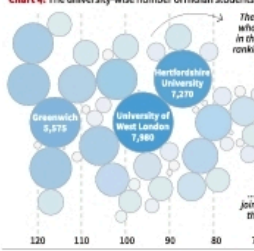


Chart 4: The immigration status of Indian students five years after they entered the U.K. on the "study route" (in %)

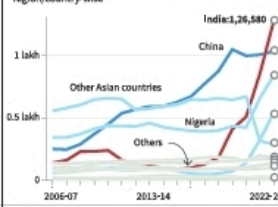
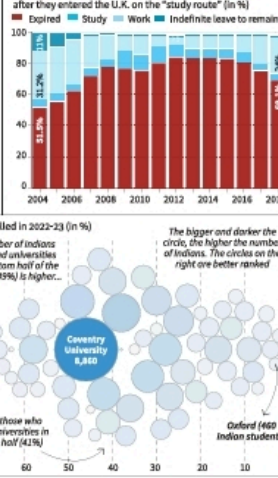


Chart 5: The university-wise number of Indian students enrolled in 2022-23 (in %)



FROM THE ARCHIVES

The Hindu.

FIFTY YEARS AGO OCTOBER 15, 1974

Origin of monsoon in Tibet

New Delhi, Oct. 14: A recent Leningrad report locating the origin of monsoon in Tibet has not come as a surprise to Indian meteorologists, one of whom had propounded this theory as early as 1958.

The theory was propounded by Dr. P. Koteswaram, Director-General of Observatories, at a symposium as "monsoons of the world" 16 years ago.

He had stated that the heating of the Tibetan plateau was an important factor in initiating and maintaining the monsoon circulation.

A report from Leningrad on Oct. 12 had quoted Soviet scientists as having concluded that the monsoon originated over the Tibetan mountains and not over the ocean. The scientists reached this conclusion after a study of data collected during the Monsoon Expedition (Monex) organised by Indian and Soviet scientists last year.

Until the Monex, the general belief had been that the monsoon was caused by moist currents over the southern part of the Indian Ocean, which after crossing the Equator, approached the Indian peninsula as the south-west monsoon between June and September. The impelling force triggering the monsoon circulation was believed to be the high pressure belt in the southern hemisphere which intensified and pushed air across the Equator in spurts known as monsoon pulses.

Dr. Koteswaram's 1958 hypothesis was that the Tibetan plateau which extends upto five km in height was heated directly by the sun's rays and contributed to the heating of the upper half of the atmosphere where weather is formed.

A HUNDRED YEARS AGO OCTOBER 15, 1924

The Madras Chamber of Commerce

The following extracts from the Minutes of Proceedings at the Monthly General Meeting of the Chamber held on Tuesday, the 30th September, 1924, have been sent to us for publication:

Madras year book
3. Read and recorded (1) letter from Messrs. Gokarnani Co., Madras, dated the 2nd August, 1924, requesting the Chamber to address the Government in regard to the discontinuance of the publication entitled the Madras Year Book from 1925 or do it in such a way that it will not compete with their publication.

The Tribune

ESTABLISHED IN 1881

Right to protest

Normalisation of disruption is not good

THE right to protest is protected under Article 19 of the Constitution. Citizens have a right to assemble peacefully and protest against the action or inaction on the part of the State. What's becoming an issue of concern, particularly in Punjab, is the repeated recourse — almost a given — to blocking roads and railway tracks when something irks someone. The protesters base their argument on past experience, which is that memorandums and dharnas count for little and only the disruption of traffic and essential services has the desired effect of forcing the authorities to take cognisance. The counter-argument is equally persuasive. What purpose does it serve to inconvenience fellow citizens day in and day out? If the authorities are at fault, why make the people suffer? The normalisation of disruption is a telling commentary on a State that does not care — for protesters and public alike.

It is essential to guard against a citizen versus citizen binary taking root. A situation, where both protesters and citizens harbour the notion of being victims, does not augur well for democracy. It dilutes the legitimate demand of protesters and makes citizens immune to legitimate causes. No one gains. The use of the term 'andolanjevi', in the protests against the Modi government's three farm laws drew criticism, and rightly so. People in our region stood as one, in solidarity with the protesting farmers. If these selfsame citizens — known for backing a worthy cause — increasingly feel they are at the receiving end, those leading the protests need to introspect. The methods being adopted are not helping.

Meanwhile, another 'andolanjevi', the well-known Ladakh activist Sonam Wangchuk is not being allowed to have his say in Delhi. Section 144, the Raj-era section in the revamped penal code, has been imposed all over the capital's New Delhi district, prohibiting the gathering of more than five people. This is unimaginable in Punjab. That is why we must further nurture the tradition of talking truth to power, but not at the cost of societal disjointedness.

Reusable rockets

SpaceX paves way for sustainable space era

SPACEX has redefined the boundaries of space technology with its remarkable achievement of catching a returning rocket booster directly on the launch pad using robotic arms. This feat, part of SpaceX's Starship programme, brings the world closer to sustainable space exploration. It showcases a leap forward in reusable rocket technology that could drastically reduce costs for future missions. The accomplishment reflects the company's dedication to the principle of 'making life multi-planetary', an ambition to which Elon Musk often alludes.

Awestruck spectators watched as Starship's 400-foot frame lifted off from Texas and arced across the Gulf of Mexico, only to return minutes later for a flawless capture by SpaceX's towering 'chopstick' arms. The manoeuvre showcased innovation that goes beyond rocket science — melding automation, precise control and structural resilience into a symphony of advanced mechanics.

This accomplishment is not merely about technological spectacle; it holds significant potential to reshape global space exploration strategies. Reusable rockets could allow agencies like ISRO to lower costs and increase mission frequency, supporting ambitious programmes like Chandrayaan and Mangalyaan. Moreover, reusable technology is a greener approach as it reduces material waste and space debris, aligning with global efforts to minimise environmental impact. Global collaboration could expand this innovation's reach, allowing space agencies such as NASA, ESA and ISRO to explore joint missions and advance human spaceflight. SpaceX's technology provides a promising roadmap for future partnerships, benefiting agencies, scientists and the next generation of STEM professionals. Once the stuff of science fiction, reusable rockets are now becoming a reality.

ON THIS DAY...100 YEARS AGO

The Tribune.

LAHORE, WEDNESDAY, OCTOBER 15, 1924

THE ALLAHABAD DISTURBANCE

WE have hitherto purposely refrained from making any mention upon the Allahabad riots, except by way of expressing the grief which all patriotic Indians must feel at the occurrence of these disgraceful incidents on the very morning of the Unity Conference. The reason was partly that so far as it rested with ourselves we did not want that the good work begun by the Conference should be interfered with, and partly that we knew that any comments that we might make would serve no useful purpose while the riots were still there and might conceivably do harm. Now that the riots are virtually over, and whatever harm they could do to the general cause of unity which the Delhi Conference tried to further has already been done, it is no longer necessary to maintain absolute silence. Unfortunately, the material at our disposal for making any comments that might appear profitable to us is extremely meagre. On the most vital of all points, namely, the immediate origin and cause of the trouble, we know next to nothing. Both the Associated Press in its latest telegram and the Commissioner in his report express their inability to throw any light on this important point. "The real cause of the trouble," says the former, "is still a mystery, but it can only be put down in the work of law class hooligans." "It is not known," says the latter, "what was the spark which started the conflagration, but between 7 and 8 on the evening of October 7 sporadic assaults occurred in the various parts of the city." Nor are the local newspapers more helpful.

OPINION

Young doctors must introspect, too

They should also raise their voice against the dehumanisation of modern biomedical system



AVIR PATHAK
SOCIOLOGIST

AS I write this piece from Kolkata, I see young doctors coming to the street, raising their voice, exposing the huge network of corruption, or the tyranny of 'threat culture' that operates in government hospitals in West Bengal, and demanding safety and protection in their workplaces.

Yes, their determination, or their courage to fight the ruling political establishment, is indeed praiseworthy. Yet, I feel like appealing to them and their senior colleagues to widen their horizons, become sufficiently self-reflexive, and also critically examine the discontents of the hegemonic biomedicine — its power discourse, its commodification, and innumerable malpractices associated with it.

Well, I too adore doctors; and I am aware of the remarkable achievements of modern medicine. Take insulin, control your diabetes, and lead life reasonably smoothly; or, go for a knee replacement surgery, and walk once again confidently — yes, the heroic tales of modern medicine can be heard in every household. But then, these achievements notwithstanding, I cannot deny my ambivalence, and even some serious critique of the modern biomedical establishment. And I want young doctors particularly, because they have not yet lost their critical thinking, to reflect on this critique, and give a new meaning to their struggle.

Well, young doctors need to reflect on the prevalent politics of knowledge. Isn't it a fact that it is fairly easy to debunk tra-



UGLY TRUTH: Corporate super-specialty hospitals are selling 'good health' as a commodity.

ditional medical systems like ayurveda, unani or homeopathy? If, as a patient, you dare to speak of the discontents of the modern biomedical system, you are likely to be reminded that you are merely a layperson; and hence, it would be better to accept everything your doctor suggests or prescribes.

In fact, the power discourse implicit in the hegemonic biomedicine, as Ivan Illich articulated with great insight in his classic 'Limits to Medicine', 'disempowers the patient.'

But then, as a patient, you are not just a discrete body with a set of measurable parameters (say, your blood culture, or the findings of your biopsy report); you are also a living soul with consciousness and agency; and you might have your own choice regarding the way you wish to live or die.

Should you pass through a painful process of chemotherapy in the ICU of a super-specialty hospital, and live with a faint hope that you might get supplementary relief from the pain of 'acute myeloid leukemia', and survive for another two months?

Or, should you refuse to reduce yourself into an object

Will it be possible for young doctors to feel somewhat uneasy with the way their profession has been transformed into a trade or a profit-making business?

of experimentation and choose to go back to your home, and eventually leave the world amid the presence of the loved ones in your own bedroom?

Nobody — not even the best doctors with the power and aura of 'scientism', and the technology of artificial life-support systems — should be allowed to deprive you of your choice or your agency.

However, the irony is that because of the hegemonic biomedicine, and, to use Illich's

words, the resultant 'medicalization of death', most of us seem to have lost our control over the experience of living and dying.

Not to say 'yes' to everything the doctors and associated pharmaceutical industry suggest is often ridiculed as an act of irresponsibility, or a demonstration of one's 'anti-science' temperament!

Likewise, will it be possible for young doctors to feel somewhat uneasy with the way their profession has been transformed into a trade or a profit-making business? Of course, doctors need to earn and live a decent life.

But then, we are witnessing how, because of the absence of good facilities in our overcrowded government hospitals (don't forget that public health spending for financial year 2024 is merely 2.2 per cent of the GDP), corporate super-specialty hospitals do not hesitate in selling 'good health' as a commodity with an 'appropriate' price list — say, ICU: Rs. 90,000 per day; or deluxe room: Rs. 75,000 per day; or attractive 'packages' or 'discounts' for bypass surgery and kidney transplant.

No wonder, health insurance companies seek to 'bring

smiles to happy consumers', and advise you 'not to worry about cost limit, and focus only on your recovery'!

However, if you acquire the courage to keep your eyes open, you can easily see the speedy transformation of a noble profession into an ugly trade involving the chain of corporate hospitals and nursing homes, all-prevailing health insurance companies, and, above all, the \$65-billion pharmaceutical industry.

Is it the reason why middle class parents are willing to sell their property, and send their children to dubious private medical colleges so that they can become 'doctors'?

And, finally, should the practitioners of modern biomedicine recognise the social/economic dimension of disease and illness? For instance, can a doctor cure your chronic bronchitis only through costly medicine, if you are constantly exposed to polluted air because of your social location as a construction worker or a labourer in a coalmine? Or, for that matter, can even the best doctor help you to free yourself from the recurrence of stomach ailments and jaundice, if the state fails to provide clean and safe drinking water to the slum you live in and you don't have the money to buy heavily priced filtered water bottles?

Possibly, 'value-neutral' medical science does not want to ask difficult social/political questions; instead, it is easier to see the patient as just a 'discrete' body and ask him to go to clinical labs for a battery of 'tests' he can seldom afford!

Yes, as Kolkata has demonstrated, young doctors are bold enough to protest for their rights and dignity. But then, will it be altogether wrong if you and I expect some amount of self-inspection from them so that they can also raise their voice against the pathology that has dehumanised the modern biomedical system?

THOUGHT FOR THE DAY

Thank God, men cannot as yet fly, and lay waste the sky as well as the earth. — Henry David Thoreau

A wedding with a difference

RAJAN KASHYAP

AMONG the wealthy and famous, destination weddings are the flavour of the season. These events are commonly conducted at grand locations within India and abroad. Artistic designers create novel, exclusive backdrops. Conspicuous expense dips at every stage of the elaborate ceremonies, which can span a period of a week and more. World renowned professionals work over months to prepare a unique, other-worldly stage. The guests include celebrities from the fields of business, film and sports and the who's who of high society and political power.

Reports of the recent wedding of a scion of a business family in India were prominently covered by the international media. The guest waded at the sight of a spanking airport established and approved for receiving large airliners from abroad. Customs and immigration facilities were set up to facilitate the entry of such dignitaries as former Heads of State and government from abroad, who travelled in their personal aircraft. The highest paid performers at the top of the show business entertained the galaxy of distinguished visitors. The media rose handsomely to bring the event live on screen; the common public could ogle from afar the exuberant display of riches.

Contrasting with stars-studded extravaganzas in artificial dreamlands was a different wedding that I was privileged to attend last week. The destination was a charitable hospital at a nondescript village in a district of Himachal Pradesh. The natural beauty of the verdant little valley was eye-catching. The doctor in charge of the hospital, a brilliant public-spirited eye surgeon, fired by idealistic fervour, had resigned as professor of the government medical college in the state capital at the peak of his career. Over the last 25 years, he has worked for his spiritual mentor in setting up the hospital and supervised the delivery of medical services free of cost to the rural folk. He performs intricate eye surgeries regularly. The occasion was the wedding of his son, also a specialist medical surgeon to a girl, also a doctor.

The functions were a lesson in simplicity. Typical of the hills was a *mehandi* ceremony, where the bridegroom is pasted with henna, a send-off to the bride (marriage party) and a reception for the bride and groom. The highlight was a traditional *dhami*, a luncheon meal, which the good doctor hosted for the entire village. I had the unique experience of joining 1500 guests, comprising virtually the entire village. The doctor, his wife, and staff from the hospital served us choice hot dishes. Our plates were made of disposable large leaves from the local trees. No wastage, no littering, complete environmental harmony. It was a humbling moment for us city dwellers to sit on the ground with the simple village folk. With the *dhami*, the village formally adopted the young couple.

Beginning their married life in austerity in nature's lap, the newlyweds have inherited a legacy of sacrifice and social service. They have preferred to begin their professional career in a remote and inhospitable region of the Himalayas.

LETTERS TO THE EDITOR

Stop all freebies

Refer to 'Fix Punjab's finances'; the worsening financial situation is not new for the state government. One might recall a particularly sensible statement by former Punjab Finance Minister Manpreet Singh Badal, made during his tenure in the Badal government, when he argued that a government has the right to spend only when it generates revenue from its own resources — much to the displeasure of senior Badal. The Badal government, at the time, was also focused on lavish spending under the banner of welfare schemes. Freebies offered by the AAP government have led to a significant strain on the state's finances. If the state government truly aims to restore its financial health, it should stop all freebies.

RAVINDER KUMAR JAIN, LUDHIANA

Address gang violence

Apologies of 'Kathal shooter among 3 held for Siddique murder'; the recent probe revealing the possible involvement of the Bishnoi gang in a contract killing is alarming and underscores the growing threat of organised crime in India. This case points to a troubling trend where gangs are allegedly involved in high-profile murders for financial gain and the consolidation of power. Such incidents highlight the urgent need for swift and decisive action by the law enforcement agencies to dismantle such criminal networks. Simply apprehending the perpetrators is not enough — there must be a concerted effort to address the root causes of gang violence, enhance intelligence-sharing and strengthen legal provisions to prevent such audacious crimes.

KAVNEET KAUR, LUDHIANA

Bring change through education

The article, 'Not criminalising marital rape smacks of patriarchy', presents a compelling argument. However, the fact remains that there is no universally accepted scientific definition of what constitutes rape or marital rape. Non-consensual sexual acts are generally treated as rape or marital rape, but in recent times, we've seen a rise in individuals coming forward to accuse someone of rape months or even years after the alleged incident. Taking such accusations at face value and punishing the accused seems to reflect society's attempt

to show sincerity towards women in general. While there is no doubt that patriarchy remains entrenched in society, we have made considerable progress towards gender equality. That said, much more remains to be done. However, it is through education, character development and adherence to cultural values that meaningful change can be brought about.

AG RAJMOHAN, ANANTAPUR (AP)

Hegemony of male human species

Refer to 'Not criminalising marital rape smacks of patriarchy'; there could be ample reasons for rapes. But the most critical and, perhaps, the most prevalent is the hegemony that the male human species would like to have over females. More than anything else, it has been used as a tool to demonstrate one's physical superiority. Rape in a marriage is no different from rape outside this bond. Marriage should not be used as an excuse to indulge in an activity that is not consensual.

DEEPAK TAK, PANCHKULA

Welfare schemes mere rhetoric

Refer to 'Global Hunger Index-2024: India ranks under 'serious' category'; it is deplorable that as per the Global Hunger Index (GHI), India is ranked 105 amongst 127 countries across the world. It shows that the tall claims made by the BJP government at the Centre are only rhetoric as the benefit of government welfare schemes does not seem to be percolating down to the last man grappling with the problem of hunger and malnutrition. It is a bad reflection on the BJP's much-hyped slogan 'sabka saath, sabka vikas'.

MD SHARMA, SHIMLA

China no replacement for India

Apologies of 'Muizuz in India'; with Muizuz's visit to Delhi, it seems that India-Maldives ties are on the mend. The fact is that India will always remain Maldives' closest neighbour in the Indian Ocean, and in any crisis, it will be the first one to respond. China simply cannot be a replacement here, given its geographical distance from the region. Therefore, Male has no option but to enhance cooperation with India, which also needs the Maldives for better strategic depth in the Indian Ocean Region.

LAJWANT SINGH, BY MAIL

What kind of military power does India need



C UDAY BHASKAR
DIRECTOR, SOCIETY FOR
POLICY STUDIES

SOME unrelated events of the last week draw attention to India's modest trans-border military (TBM) capability and the manner in which certain disruptive technologies are impacting the conduct of war. The military operations in the ongoing Russia-Ukraine war that began in February 2022 and the spiral of violence triggered by the Hamas terror attack on Israel (in October 2023), now roiled by the entry of Hezbollah and Iran, testify to the latter trend to a certain degree. Some preliminary policy inferences can be drawn that are relevant for India.

The first development pertains to the October 9 Cabinet Committee on Security approval for the acquisition of two nuclear propelled submarines (SSNs); these platforms are also referred to as attack submarines or hunter-killers. They will be ingeniously designed and built at Visakhapatnam. This is a major policy decision and an ambitious one at that.

India was yet to acquire the

requisite level of technological competence to design and build a conventional diesel-electric submarine, but yet it had moved straight to design and build a SSBN (a nuclear powered submarine with nuclear-tipped ballistic missiles)—the INS Arihant. The SSBN has a strategic role, which is to ensure credible second-strike capability to render nuclear deterrence more robust. India joined this select group of nations in 2018, one which includes the USA, Russia, the UK, France and China.

After a long gestation period of almost 17 years since the acquisition of an SSN was first mooted, India is now embarking on the project, though this approval has to be followed by adequate budgetary allocations. An SSN is a totally different platform by way of technological features and as is the case with the first type of any naval platform, the journey will be long, arduous and expensive.

The two SSNs are reported to cost Rs 15,000 crore each, though this is an initial estimate. When these two boats enter service in an operational manner—with full endurance package, which means submarine-launched missiles—India will have a credible underwater capability, wherein the SSN can be tasked with attack, surveillance and special operations roles, depending on the tactical exigency. In essence, the SSN can remain on extended underwater 'prowl', and unfriendly navies will have to



VITAL: The military should move towards acquiring a holistic national TBM capability. FILE PHOTO

factor this capability when operating in maritime areas of relevance to India.

In the same week, on October 7, the CCS also approved phase III of the Space Based Surveillance system (SBS), which will allow India to launch 52 spy satellites in low earth and geostationary orbits. Expected to cost Rs 27,000 crore, the trans-border surveillance capability of this cluster will be enhanced by artificial intelligence and give a fillip to India's comprehensive TBM index.

Air power is a core element of a nation's TBM capability and this aspect came into focus with the new air chief, Air Chief Marshal Amar Preet Singh, who took over in end-September. During the traditional

India should acquire the desired degree of TBM capability so that Delhi acquires the appropriate degree of equipoise in engaging with Beijing.

media interaction in the run-up to the Air Force Day on October 8, ACM Singh noted the gap between India and its principal strategic challenger, China, in the air power domain and dwelt on the need to ramp up domestic production of fighter jets to redress dwindling numbers. Moreover, he said, his first effort would be not to allow 'the fighter aircraft strength go down below 30 squadrons' and that HAL should stick to its promise to deliver 24 aircraft every year to bridge the numbers gap.

The 30 squadron figure has to be seen against the aspiration of the IAF to have 42 fighter squadrons to deal with a two-front operational requirement against China and Pakistan. This number

was arrived at after the 1965 war with Pakistan; and none other than the legendary JRD Tata, an accomplished pilot and founder of Air India, was a member of the group that made this assessment.

The manner in which air power has been transmuted is evident in the Russia-Ukraine war as well as the violence in West Asia, where the use of relatively less expensive unmanned drones and missiles/rockets have replaced the once-familiar deployment of fighter aircraft and long-range bombers. The writing on the wall, air power experts agree, is that the days of the land-based, manned fighter aircraft are numbered.

While modern fighter aircraft are moving from the fifth to the sixth generation, and will be even more technologically advanced with recent strides made in avionics and the entry of AI, the cost of designing and manufacturing such platforms has become truly astronomical.

Major military powers are grappling with how to acquire affordable and effective air power that is also sustainable. India, too, is in a complex and difficult spot. There is no denying that air power is an imperative tool for ensuring national security. The question, of course, is, what kind of air power—manned or unmanned platforms—and in what distribution (Air Force, Navy, Army and space-cyber commands). That will be a complex issue to resolve for the higher defence

management hierarchy, both military and civilian.

TBM capability is a combination of the classical military tripod—the ability to deliver ordnance over long ranges with proven accuracy; ensure surveillance, both defensive and offensive, incorporating the latest technologies in communication warfare; and being capable of moving tangible military assets to distant theatres when warranted.

The Indian military is going through a period of transition towards greater jointness, while theatre commands have been mooted. There is a case for the evolving military architecture to objectively review individual service or domain-specific trans-border capabilities across the tripod—and move towards acquiring a holistic national TBM capability.

The specific scenario where this would come into play is in relation to China. Even as the geo-economic and trade compulsion introduces one layer of robust bilateral interaction, there is a need for India to acquire the desired degree of TBM capability in a progressive manner, so that Delhi acquires the appropriate degree of equipoise in engaging with Beijing—and does not need to be either deferential or belligerent.

Later this month, the trauma of October 20, 1962 will be recalled. It is hoped that the right policy cues regarding TBM will be internalised by the Indian security apex.

Himachal's financial struggle in a centralised system



TIKENDER S PANWAR
EX-OF MUNCIPAL, SHIMLA



RAJNI AWASTHI
OFFICIAL GOVT OF HIMACHAL PRADESH

OVER the past week, BJP president and Union Health Minister JP Nadda has made claims regarding the fiscal crisis in Himachal Pradesh. Nadda has argued that the state government, led by Chief Minister Sukhvir Singh Sukhu, is financially dependent on the Central government. He has claimed that Rs 500 crore was being provided as a fiscal deficit grant, with an additional Rs 800 crore given monthly to keep the state financially afloat.

However, these statements are not merely a reflection of the fiscal concerns but also a political attack on the Congress-led Himachal government, raising questions about the state's fiscal management. Nadda's comments can be seen as part of a broader trend of undermining fiscal federalism in India, particularly targeting smaller states like Himachal Pradesh.

But do the smaller Himalayan states truly depend on the Centre for survival? And why has fiscal centralisation intensi-

fied in recent years? Himachal Pradesh ranks just below Kerala in terms of human development indices, thanks to successive governments which have invested heavily in education and social welfare. By the mid-1980s, the state had achieved full electrification despite its low population density and challenging terrain. Human resource development has been a significant driver of growth even though the state has remained industrially underdeveloped.

Himachal Pradesh also contributes significantly to national resources, particularly in water and electricity generation, thanks to its large reservoirs and hydroelectric power stations. However, this has come at the cost of environmental degradation in the state. While the state's expenditure on social welfare remains high, it plays a vital role in national infrastructure.

The financial landscape of India over the last decade has increasingly shifted towards centralisation, weakening the fiscal autonomy of states.

Contrary to Nadda's assertions, the Centre's financial assistance is not an act of mercy but rather a constitutionally mandated part of India's federal structure. Article 270 of the Constitution outlines the distribution of taxes collected by the Union between the Centre and the states, based on the Finance Commission's recommendations. These taxes



NATIONAL GAIN: HP contributes significantly in resources like water and power generation. FILE PHOTO

include corporation tax, personal income tax and the Central GST.

However, the BJP leader's claim ignores the larger issue of cess and surcharge, which are collected by the Centre but not shared with the states. In 2024-25, cesses and surcharges are estimated to constitute 23 per cent of the Central government's gross tax receipts, depriving the states of their share. The total tax revenue for 2022-23, 2023-24 (revised estimates) and 2024-25 (budget estimates) are projected to be Rs 30.5 lakh crore, Rs 34.4 lakh crore, and Rs 38.8 lakh crore, respectively. Of this, the states' share will be only Rs 9.5 lakh crore, Rs 11.0 lakh crore, and Rs 12.2 lakh crore. It is significantly lower than the 41 per cent share recom-

Initially meant for specific, temporary purposes, cesses and surcharges have now become permanent fixtures in the tax system.

mended by the 15th Finance Commission.

Initially meant for specific, temporary purposes, cesses and surcharges have now become permanent fixtures in India's tax system. The share of cesses and surcharges in the Centre's gross tax revenue increased from 10.4 per cent in 2011-12 to 20.1 per cent in 2020-21. This shift has eroded the share of taxes devolved to states, significantly affecting their revenue.

Even though various finance commissions have repeatedly advised that cesses and surcharges belevied sparingly, the Central government has increasingly relied on these measures. States have little-to-no control over these revenues, which are often used for Centrally-sponsored

schemes. This has undermined the spirit of fiscal federalism, leaving states with reduced fiscal independence.

For example, the GST compensation cess, intended to cover shortfall in tax collection after the GST's introduction, is being used primarily to repay loans taken for compensation purposes. The Centre's reliance on these levies has not only weakened the financial position of the states but also raised concerns about the transparency and accountability of how these funds are used.

Does the given fiscal architecture mean that the larger game plan is to destabilise the Opposition-ruled state governments in the country?

JP Nadda, hailing from Himachal Pradesh and having served as a Cabinet minister in the state, should recognise the unique fiscal challenges faced by the mountain states. Himachal, which shares an international border, has particular fiscal needs and requires special attention from the Centre. After achieving statehood, Himachal enjoyed a strong partnership with the Central government, which facilitated its remarkable developmental progress. This collaboration was built on mutual trust and shared responsibility for development, not on condescension or political ridicule.

If Nadda truly wants to help HP he should advocate for the state's rightful demands rather than demean it for political purposes. HP's fiscal concerns are

longstanding and deserve attention. They include issues related to the Bhaskar Bhas Management Board (BBMB), the Punjab Reorganisation Act and the water cess dispute—all of which have significant financial implications for the state.

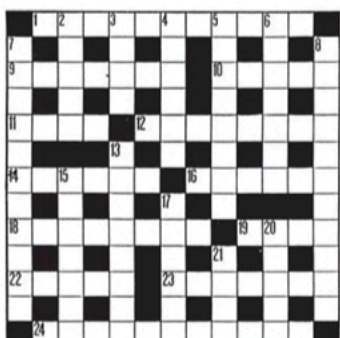
The Supreme Court has upheld Himachal's claims in these matters. The Central government should work to resolve them fairly.

Himachal Pradesh is not merely surviving on the Centre's largesse; it is an integral part of India's development, contributing to national resources while balancing its own fiscal needs. The state has made considerable progress in human development, largely through its investments in education, health and social welfare. However, the increasing centralisation of fiscal powers, particularly through cesses and surcharges, has limited the state's financial independence.

Re fiscal federalism to thrive, the Centre must recognise the importance of states like Himachal and work collaboratively to address their concerns. Restoring the balance between the Centre and the states that ensures a fair distribution of resources is essential for the long-term development of India's federal system.

Rather than perpetuating political attacks, the Centre should focus on promoting the rightful fiscal interests of Himachal Pradesh and fostering a more cooperative approach to governance.

QUICK CROSSWORD



ACROSS

- Daybreak (5,2,4)
- Daring feat (7)
- An Italian sauce (5)
- The chances (4)
- Disagreement (8)
- Celebrated (6)
- Gentle breeze (6)
- Hard metal, aka wolfram (8)
- Made haste (4)
- Relating to birds (5)
- Unfamiliar (7)
- A few times (4,2,5)

DOWN

- Swift (5)
- Unfriendly (4)
- Set of clothes (6)
- Underprivileged (8)
- Sharp in wit (7)
- Release pent-up feelings (3,3,5)
- Oppressed (11)
- Pest (8)
- Large house (7)
- Smaller in size or amount (6)
- Infectious fright (5)
- Top of a slope (4)

Yesterday's solution

Across: 1 Homely, 4 Academic, 9 Lesson, 10 Walkover, 12 Bare, 13 Corps, 14 Undo, 17 Cook the books, 20 Pulse strings, 23 Hoot, 24 Chain, 25 So-so, 28 Nobility, 29 Pained, 30 Outdated, 31 Obsess.

Down: 1 Hold back, 2 Mushroom, 3 Loot, 5 Championship, 6 Dike, 7 Moving, 8 Carrot, 11 Powers that be, 15 Stout, 16 Skirt, 18 Announce, 19 As good as, 21 Shino, 22 Sorbet, 26 Plea, 27 Lamb.

SU DO KU

9	3					2		1
			4			9		
		4	5					
					7			2
6		1		9				7
3			8					
				5	9			
	7		6					
2		8				6	3	

HARD

YESTERDAY SOLUTION

1	7	8	4	3	6	5	9	2
9	3	4	1	5	2	7	8	6
2	5	6	9	8	7	1	3	4
3	6	9	2	7	8	4	5	1
7	1	5	6	9	4	3	2	8
8	4	2	3	1	5	6	7	9
6	9	7	5	2	1	8	4	3
5	2	1	8	4	3	9	6	7
4	8	3	7	6	9	2	1	5

CALENDAR

OCTOBER 15TH 2024, TUESDAY

- Shaka Samvat 1946
- Aashwin Shaka 23
- Aashwin Purnima 30
- Hijri 1446
- Shukla Paksha Tithi 13, up to 12.20 am
- Vishuddha Yoga up to 2.13 pm
- Purnima Bhadrpad Nakshatra up to 10.09 pm
- Moon enters Pisces sign 4.49 pm

FORECAST

CITY	MAX	MIN
Chandigarh	33	20
New Delhi	35	18
Amritsar	32	19
Bathinda	35	19
Jalandhar	32	19
Ludhiana	33	19
Bhawan	34	19
Hisar	36	17
Sirsa	35	21
Dharamsala	28	15
Mansi	24	08
Shimla	23	12
Srinagar	27	08
Jammu	32	20
Kargil	26	08
Leh	13	01
Dehradun	31	20
Mussoorie	22	13

END OF PAGE

THE ASIAN AGE

15 OCTOBER 2024

Baba Siddique's murder exposes police fallibility

Former Maharashtra minister Baba Siddique's murder has brought back painful memories of the '90s, when Mumbai's ganglands carried out bloodbath on the city streets without any fear of law enforcement agencies. Siddique was under police protection.

An armed policeman was accompanying him at the time of his murder. Moreover, Siddique was killed on the day of Dusara. The police department was on high alert on that day because of the festivities and two major political rallies in the city — held by chief minister Eknath Shinde and Shiv Sena (UBT) chief Uddhav Thackeray.

The larger police presence on the day did not, however, deter the assassins who executed their plans anyway. The incident was an embarrassment for the police department as well as the state government. Therefore, the police action should not be restricted merely to catch the culprits and bring them to justice. The actions are also needed to restore the public faith in the police department.

Siddique's murder barely a month before the state Assembly election will have political repercussions. The Shinde government has a lot to explain about law and order in the state. The former Congress minister had recently joined the Ajit Pawar-led Nationalist Congress Party. However, that has not stopped the Opposition parties from mounting an attack on the government over the issue of public safety.

Deputy Chief Minister Devendra Fadnis, who is BJP's tallest leader in Maharashtra, has been the Opposition's target because of the cases such as Pune Porsche hit-and-run, Badlapur school molestation, incidents of communal violence in Amravati and Akola etc. Siddique's murder has provided yet another reason to the Opposition parties to demand Fadnis's removal.

As expected, Fadnis brushed aside the Opposition's charges saying they were playing politics over the "unfortunate incident". But he is sceptical about the police department's ability to deter criminals, and the ruling parties cannot ignore them, particularly during election time.

A suspected member of the Lawrence Bishnoi gang, through a social media post, has indicated that Siddique was killed because of his proximity to actor Salman Khan. The gang claims it wants to kill Salman Khan because of his alleged involvement in killing a blackbuck in September 1998. But the fact remains that gangs target Bollywood celebrities because it gives them instant publicity and strikes fear in the minds of the public.

The Bishnoi gang came in the national limelight after killing singer, rapper Sidhu Moose Wala in 2022. The Bishnoi gang is hiring hitmen from different states and carrying out crimes in different parts of the country. Ironically, Lawrence Bishnoi, the head of the gang, is in jail. But he continues to call for a show there and the police cannot do anything about it despite knowing everything. This is unacceptable.

The law enforcement agencies need to sanitise jails, which have also become a recruitment platform for crime syndicates and stop inmates communicating freely with their associates outside. If it is allowed to go on unchecked, the days of 'jungle raj' in the country, not just in Maharashtra, are not far away.

Moon, Mars colonies near reality?

The most powerful rocket ever built by man took off to the skies and returned to its launch base, where it was captured by two gigantic metal arms of the launch tower nicknamed 'chopsticks'. The engineering feat to manoeuvre the 400-foot Starship vehicle to its base marks a feat of ingenuity to be heartily celebrated; it could help speed up astronauts' much-awaited trip to Mars.

Given the state of the world with so many wars around, the Elon Musk dream of colonising Mars to save humanity may not be an impossible dream after all. It may not be that far into the future and old timers can imagine it could even happen in their lifetime. And Mr Donald Trump is promising that if he were to be elected president, his friend and backer Mr Musk would get the (unmanned) trip to the red planet going during his term.

The heaviest first stage booster 'Super Heavy' twisted and turned as it negotiated its way to its home base rather than splash in the ocean. This could mean the turnaround time of space missions could be in months rather than years. The 'Starship' the rocket launched splashed down in the Indian Ocean an hour or so later.

Sending people to Mars may not even sound futuristic for dreamers like Mr Musk, but complications may lie in bringing them back, but such worries could be dispelled before a manned trip becomes possible. "Big step towards making life multiplanetary was made today," Mr Musk said modestly.

It is the pace of the march of technology, that too in the private sector with lesser resources, that is mind boggling as creativity gets a boost through mastery of engineering and technology. Colonising the moon could be achieved quickly enough if a haven for prolonging human civilisation becomes a huge priority. In any case, the 'Starship' is to take people to the moon in 2026 on NASA's Artemis 3 mission.

Given the success of the retrieval, the US authorities might feel better disposed to clear SpaceX's innovative missions quicker. And mankind cannot be grateful enough if the likes of Mr Musk provide it a way to live outside planet Earth. People would be happy to live on Earth if not for leaders using technological creativity to fight wars rather than wage peace.

THE ASIAN AGE

KASHMIR LETTERS

Editor

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R. REDHARA

Printer & Publisher

Aakar Patel

New govt in J&K a positive sign; some L-G powers will shift to CM



A new government will be formed this week in Jammu and Kashmir after its first election in 10 years, shifting some powers from the Centre's nominee, lieutenant-governor Manoj Sinha, to the state Cabinet headed by the chief minister. This is good news. Much has been made of the fact that this was the first election in decades. This is also a positive development but it should be expected that democracies progress rather than regress electorally over time.

Along with free elections and a partial return to self-government, the claim is also made that Kashmir is now safer than before. This is a complex issue and we must examine the data here.

Militancy began in Kashmir in the late 1980s. The South Asia Terrorism Portal has data on violence across the region. In 1989, a total of 92 people were killed in Kashmir. The next year, violence exploded and took 1,177 lives, of whom 962 were civilians. 152 security forces personnel and 183 militants.

The number increased in 1991 (to 1,283) and 1992 (1,909) and, in 1993, 2,567 people were killed. Of these, the number of civilians (1,023) and security forces personnel (216) remained about the same as before, but the number of militants killed shot up to 1,228. This was so for the next few years, but there was also a gradual rise in the number of deaths in the security forces, which reached 441 in

the year 2000, when almost 3,000 people were killed in Kashmir.

This was staggering levels of violence because the population of Kashmir (without Jammu is only that of an Indian metropolis (about 5 million, smaller than Bangalore). Fatalities peaked in Kashmir in 2001, when a total of 4,011 people were killed. Of these, 629 were in security forces, 1,024 civilians and 2,345 militants. The next year, 2002, the number dropped for the first time by 1,000 to 3,008 dead, and in 2003, further, to 2,507.

What explains the dip in fatalities after what was a long-term escalation?

The two events of significance are the 9/11 attacks in the US, after which Pakistan said it had become a partner in the "war on terror"; and the attack on India's Parliament three months later in December 2001, in which nine Indians and five attackers died.

After the second event, India mobilised for war on the Pakistan front and pressured Pakistan to act against those sending terrorists over. On January 13, 2002, Pakistan said it had banned the Lashkar-e-Taiba (LeT) and Jaish-e-Mohammed (JeM), the two most active and lethal groups in Pakistan. Prime Minister Atal Behari Vajpayee demobilised after the ban.

India had later said the ban was a fraud and Pakistan was not serious about clamping down on terror. It is certainly true that the Pakistan Army

and its wings have nurtured these groups and used them over time. It is difficult to say, given the opacity with which the Pakistan military establishment works, whether this has changed. We can however look at the data.

In Kashmir, from over 4,000 fatalities in 2001, the number went to 3,000 in 2002 and 2,500 in 2003. It fell again in 2004 to 1,788 and to 1,125 the next year. In 2007, the number fell to under 1,000 (744 killed) for the first time since 1980. It fell further to 548 in 2008, then 375 in 2009, then 10 in 2011. It did not rise above 200 in any year till Manmohan Singh left office in 2014.

This appears to have shifted somewhat since with fatalities going above 200 in four years, above 300 in two years and above 400 in one year. Last year, 2023, they fell to below 200 again for the first time since 2015, but it would not be wise to see a single data point as a long-term indicator.

Consider what has happened in Pakistan in the same period. Though Pakistan had seen extraordinary levels of violence in Karachi in the 1980s and 1990s, this was violence that was not sectarian but political (between, for instance, migrants from India, the so-called Muhajirs, and the Pashtuns). In 2000, 2001 and 2002, while Kashmir was burning, Pakistan's fatalities from terrorism were 166, then 286 and then 257. In 2003, the year after then President Pervez Musharraf banned Lashkar and JeM, an assassination attempt was made on him

twice. In the first, a bomb was set off as his convoy crossed a bridge and on Christmas 2003, two suicide bombers tried to run their cars into his convoy. Sixteen people were killed but Mr. Musharraf escaped.

The next year, fatalities rose sharply to 925, of whom 248 were security forces personnel and 302 militants. In 2006, they reached 1,466. In 2007, another attempt was made on Gen. Musharraf's life when his plane was attacked as it was taking off from a base in the north-west. It was not shot down but 6,893 in 2008. In 2009, the most violent year in Pakistan's history, 11,317 people were killed, including 1,012 security forces personnel and 7,884 militants. In India, in the same period, 373 people were killed in Kashmir as we have seen.

In 2010, the Pakistan Army began to smother the violence and fatalities fell to 7,342 and then to 6,050 the following year. In 2013 and 2014, deaths were at 5,000, falling to 3,685 in 2015 and then 1,797 and 1,249 in 2016 and 2017. In 2019, it went below 400. However, it has since risen to about 1,500 a year for each of the last two years.

The long-term trends on violence in Kashmir, on the other hand, are positive as India must secure these gains further. Free elections are a democracy's best response.

The writer is the chair of Amnesty International India. Twitter: @aakar_patel

Subhani



To develop India, spend on R&D, let diversity flourish



Patralekha Chatterjee
Dev 360

The number of researchers per million people in India has gone up to 262 in 2020 from 255 in 2017 and 110 in 2000 but India still has a relatively small number of researchers per million inhabitants.

Research and Development Statistics 2022-23, brought out by the Union government's ministry of science and technology.

In India, GERD (Gross Expenditure on Research and Development) is mainly driven by the government. The Central Government contributed 43.7 per cent of the R&D budget in 2020-21, state governments 43.7 per cent, higher educational institutions 8.8 per cent, and public sector industry 4.4 per cent and the private sector 36.4 per cent.

In stark contrast to this 36.4 per cent, enterprises spend 77 per cent of R&D expenditure in China and around 75 per cent in the United States. This indicates a need for greater corporate engagement in research and innovation.

Now, change appears to be in the air here. The Interim Budget for 2024-25 announced allocation of a Rs 1 lakh crore corpus for R&D, marking an important step in India's journey towards becoming a global leader in innovation.

This infusion of funds is expected to foster progress in diverse fields such as technology, healthcare, academia and the environment and strengthen India's position in the global research ecosystem.

India has enacted the Anusandhan National Research Foundation (ANRF) 2023 Act to foster a R&D culture. The act empowers the ANRF board headed by the Prime Minister to provide high-level strategic direction. It also seeks to bring together universities, R&D institutions, government departments and industry for basic and applied research. India has 165 institutes of national importance. However, most of the institutions face a challenge to get funding for basic research.

India's renewed interest in fostering a R&D culture is good news but it is too early to predict how this

will impact the research and development landscape in the country and which areas will be the most impacted.

If we are talking about becoming a developed nation, we must closely examine what we do and what developed nations do. The number of researchers per million people in India has gone up to 262 in 2020 from 255 in 2017 and 110 in 2000 but India still has a relatively small number of researchers per million inhabitants compared to the US (4,245) and China (1,225).

Some areas like drugs and pharmaceuticals dominate R&D spending. But even there, Indian companies typically spend 5-6 per cent of their revenues on R&D, compared to 15-20 per cent by global pharma giants. Traditionally, India's industry has tilted towards research output that can be immediately commercialised. However, it is universally accepted that basic research remains the cornerstone of advanced level research. India has typically bought technology for many industries. This partially explains why the Atma Nirbhar Bharat story has faced so many bumps.

The quality of research is a critical issue. Despite improvements, India's share of high-quality research articles in peer-reviewed academic journals remains significantly lower than that of China and the US. Historically, institutions of higher education in India have focused mainly on teaching and research has remained peripheral to numerous institutions.

Given this background, more funds for research are undoubtedly welcome but there is another critical same period. Though Pakistan had seen extraordinary levels of violence in Karachi in the 1980s and 1990s, this was violence that was not sectarian but political (between, for instance, migrants from India, the so-called Muhajirs, and the Pashtuns). In 2000, 2001 and 2002, while Kashmir was burning, Pakistan's fatalities from terrorism were 166, then 286 and then 257. In 2003, the year after then President Pervez Musharraf banned Lashkar and JeM, an assassination attempt was made on him

spend out boldly and fearlessly. Researchers must aim to tell the truth, even if doing so risks making one's superiors or institution look bad. Freedom to voice a view is as critical for research in physical sciences as in social sciences.

As famous biochemist David Resnik once observed that "freedom of speech is one of science's most important norms. People must have freedom of thought and speech to generate different points of view. Progress cannot occur if the majority uses its power to suppress minority viewpoints. Placing restrictions on communication can also scientific work and can have a negative impact on the research environment." Freedom of speech, Dr Resnik noted, is "important for educating and informing the public with policy implications. People need to hear different perspectives to develop well-informed and cogent opinions about policy issues."

Science works because we commit to a method of discovery, there is agreement on what counts as evidence, and most importantly, we are incentivised to show others that they are wrong. It is a collective act that slowly converges on the truth. But our findings can only be trusted if we are free to find the opposite to whatever current political sentiments suggest. It is the right answer," says Michael Muthukrishna, an associate professor of economic psychology at the London School of Economics and Political Science and author of *A Theory of Everyone: The New Science of Who We Are, How We Got Here, and Where We Are Going*.

Research marks progress, new knowledge, new insights that can benefit the public at large. And progress comes out of a churn of diverse points of view. It needs freedom from fear, fear of failure and fear to dissent.

The writer focuses on development issues in India and emerging economies. She can be reached at patralekha.chatterjee@gmail.com.

LETTERS

HYPOCRISY ON QUOTAS

Rahul Gandhi has recently said that his Congress Party will take reservations beyond the 50 per cent ceiling if it comes to power. Those who are against the reservation policy have criticised the idea. Interestingly, they will do a 180-degree turn and oppose it if a 50 per cent cap is introduced to state quotas for Lok Sabha seats. No one likes the move of giving a Lok Sabha constituency ticket from his/her state quota to a candidate from outside the state. But what is necessary for elected politicians is equally important for selected bureaucrats. Social justice will be mere talk if there is no equitable representation both in elected and selected personnel of the government.

Sujit De

Kolkata

QUOTAS OUTDATED

CASTE-BASED reservations are no longer a tool for an equitable society. Instead, they are a polarising instrument. Can we truly assess the success of reservations in light of the recent uproar against Rahul Gandhi's remarks about removing them when India becomes a fairer society? How can we make sure quotas achieve their goals rather than simply serve as political capital? A current discussion makes clear how vital it is to give these policies an extensive review in light of the recent uproar against Rahul Gandhi's remarks about removing them when India becomes a fairer society? How can we make sure quotas achieve their goals rather than simply serve as political capital? A current discussion makes clear how vital it is to give these policies an extensive review in light of the recent uproar against Rahul Gandhi's remarks about removing them when India becomes a fairer society? How can we make sure quotas achieve their goals rather than simply serve as political capital? 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