



## Current Affairs, 20<sup>th</sup> October to 26<sup>th</sup> October, 2019

### International

#### Canadian Election

- The re-election in federal polls challenges Canadian Prime Minister Justin Trudeau to pursue the ruling Liberal party's core agenda on race, refugees, gender and the environment — which secured him his first term in 2015. Despite trailing behind the Conservatives in opinion polls almost until election date, the incumbents have managed to regain voter trust, just enough to retain power. Short of at least 13 seats for a majority of 170 in the House of Commons, he will now depend on broadly left-of-centre parties as he sets out to run a minority government. Monday's verdict also affords Mr. Trudeau another chance to rebuild his tarnished domestic record of recent months. His government has made major strides in reducing child poverty, the introduction of a carbon tax and the legalisation of recreational cannabis. On the world stage, his robust defence of globalisation and multilateralism helped ease tensions during the 2018 Group of 7 nations gathering. More concrete were his efforts to renegotiate the regional trade pact with the U.S. and Mexico. Nevertheless, young Canadian voters felt in the poll run-up that Mr. Trudeau had failed to live up to his promise in his 2015 bid of "sunny ways" in politics. The perception grew following accusations that he had interfered with investigations into allegations of corruption by the engineering multinational SNC-Lavalin. Matters were made worse when Jody Wilson-Raybould, the charismatic former Attorney General and Justice Minister, was first shifted and then dropped from the Liberal party. She has now won as an independent. Mr. Trudeau's defence in the Lavalin case that he was concerned about the risk to Canadian jobs may have struck a chord among trade unions. But that seemingly lopsided logic could have done little good to his gender-inclusive credentials. With their fresh mandate, the Liberals ought to rethink their general stance in order to live down their image as those who all-too-easily sacrifice principles. Leading a minority government, Mr. Trudeau would be aware of the task that lies ahead.

#### Putin Takes Centre Stage in Syria

- Initially, it appeared to be a geopolitical puzzle. First, the United States announced that it was pulling out of northern Syria, leaving its Kurdish allies to the mercy of Turkey. Then Turkey launched an offensive in Kurdish towns along the Syrian border. Neither the Syrian government nor its Russian allies did anything to stop the Turkish incursion. For reasons that are unclear, it seemed that everybody was on board when it comes to taking on the Kurds. Then everything fell into place when Turkish President Recep Tayyip Erdoğan and his Russian counterpart Vladimir Putin met in the Black Sea town of Sochi. **Mr. Erdoğan wants to carve out a 400-km long and 30-km wide buffer across the Turkish border, stretching from Manbij in north-western Syria to its north-eastern corner on the Iraqi border.** His plan is to drive the Kurdish People's Protection Units (YPG) militia out of this buffer, which he calls the "safe zone," and resettle some of the 3.5 million Syrian refugees currently living in Turkey in this region. The "safe zone" will be run by pro-Turkish Syrian militias. In the Sochi summit, Mr. Putin practically accepted this proposal, but with one rider: the "safe zone" would be jointly



patrolled by both Russian and Turkish troops. Russian and Syrian troops will push the YPG away from the buffer. In the end it was a win-win deal. Ankara got what it wanted without fighting a full-scale war with the Kurds — a buffer along the border; Damascus got what it wanted without fighting the Rojava — sovereignty over north-eastern Syria; Moscow got what it wanted — the Americans out of Syria (only a small contingent of U.S. troops are likely to stay back); and U.S. President Donald Trump got what he wanted — to end America's role in at least one of the several long-drawn wars it's fighting. The only losers in this great game are the Kurds. For over four years, they have been on the front line of the war against the Islamic State (IS). They defeated the terrorist group and established a semi-autonomous administration in areas liberated from the IS, only to lose both territories and autonomy. The U.S. has abandoned them. Turkey is bombing them. For Russia, they are just a pawn on the geopolitical chessboard. Mr. Putin has established himself as the most critical player in the Syrian theatre. Regional leaders who have stakes in Syria, from the Syrian President to the leaders of Israel, Iran and Turkey, frequently visit him to discuss their strategies as the Syrian foreign policy is practically set by the Kremlin. There can't be any solution to the Syrian crisis without Mr. Putin's approval. The U.S. withdrawal from the country further bolsters Russia's standing as it eagerly seeks to fill that vacuum. But then why is Russia helping Turkey create a buffer and turning against the Kurds who defeated the IS? For Mr. Putin and Bashar al-Assad, the Syrian President, the war is not over yet. True, the Syrian government has practically won the civil war. **If the government was on the brink of collapse when the Russians arrived in Syria in September 2015, it's now on a firm footing, controlling most of the country, except the Idlib governorate. Idlib is controlled by Ahrar al-Sham, formerly Jabhat al-Nusra which was an offshoot of al-Qaeda, and pro-Turkish militias.** When Mr. Erdoğan was in Sochi, Mr. Assad visited the Idlib front line. The visit itself was a statement. Mr. Assad wants Idlib back. He held back an operation because there's a Turkish-Russian deal to stall any offensive on Idlib. Now that Turkey can carve out its buffer along the border, Mr. Putin could press Mr. Erdoğan to drop Ankara's opposition to a Syria-Russian operation. A Turkish buffer would also mean that potential refugees from Idlib in the event of such an attack (there are some three million people living in the governorate) would not cross into Turkey, unlike what happened during the battle for Aleppo. Sochi is only the beginning of a grand bargain.

### China's Growing Clout at The UN (E. D. Mathew - Former Spokesperson With The United Nations)

- In June, the Indian government quietly withdrew the candidate it had nominated for the post of Director-General of the Food and Agriculture Organization. As NITI Aayog member Ramesh Chand was facing certain defeat by China's Qu Dongyu, New Delhi seemed keen to soften its humiliation at the multilateral forum. In the first week of October, when President Xi Jinping led China's biggest-ever military parade to mark the 70<sup>th</sup> anniversary of Communist rule, for the first time a contingent from the country's 8,000-strong UN peacekeeping standby force participated. Whether through specialised UN agencies or peacekeeping, China is racing to fill the vacuum in international leadership left by the withdrawal of the U.S. from multilateral fora under President Donald Trump, and taking advantage of the lack of convergence among the permanent members of the Security Council on many global issues. Unlike India whose UN outreach is largely limited to a customary reiteration of its decades-old advocacy for the expansion of the Security Council, China is aggressively seeking more positions in the UN Secretariat hierarchy. It also aims to play a bigger role in peacekeeping operations. **For much**



of the Cold War era and beyond, China's role at the UN was largely that of a disruptor aimed at thwarting attempts by Western democracies to impose a liberal vision on the world. But today Beijing is trying to reverse that role and is actively seeking to use the UN platform to legitimise — and spread — its ideology. China has increased its monetary contributions to the UN fivefold in the past decade. President Xi is keen to project his country as a “champion of multilateralism,” even as Mr. Trump is busy disbanding multilateral agreements and engaging in trade wars. Last year, as tensions with the U.S. were rising over trade disputes, Mr. Xi called for the country to take “an active part in leading the reform of the global governance system”. With increased financial contributions and concomitant clout, China has been able to get Communist Party officials to head more than a quarter of UN's specialised agencies including the FAO, the Industrial Development Organization, the International Civil Aviation Administration, and the International Telecommunication Union. With its increasing influence at the UN, China is eager to push its ideological stance through the global body. It argues that each country may choose its own human rights protection in the context of “national circumstances”. Ironically, through the body tasked with bringing human rights violators to account — the Human Rights Council, which the U.S. abandoned — China is diluting the concept of universal values and promoting its world view on the subject. “In 2017, Human Rights Watch exposed Beijing's efforts to silence UN human rights experts and staff, to prevent critical voices from China from participating in UN processes, and to manipulate rules and procedures to ensure more favourable reviews,” the human rights group said in a report. With no one to stand up to China in the absence of U.S. leadership at the UN, Beijing is actively promoting its foreign policy initiatives, especially the Belt and Road Initiative, through the global body. BRI serves “the purposes and principles of the Charter of the United Nations,” according to Liu Zhenmin, formerly of China's Foreign Ministry and currently UN's Under-Secretary-General for Economic and Social affairs. For some time now, there is speculation of a coordinated Sino-Russian front at the UN. The two countries seem to frequently align their positions, especially when human rights issues come up. The prevailing lack of strategic unity among the Western members of the Security Council is ripe for the duo to advance their interests, and China seems keen to take advantage of the opportunities this disarray presents to enhance its hold on the UN.

### Brexit: New Deal and Old Jam

- British MPs have again ruptured the Brexit process by withholding their support for Prime Minister Boris Johnson's new divorce deal with the EU. The House of Commons voted for an amendment making approval for the text conditional on Parliament passing legislation to ratify the treaty before Britain leaves the EU. The failure to clearly back the deal triggered a law forcing Mr. Johnson to ask EU leaders to delay Brexit for a third time. MPs passed the amendment claiming they fear the risk of a potentially disastrous “no deal” exit by accident on October 31. But the vote does not kill the deal, and holds out the possibility Britain could still leave the EU in an orderly fashion on October 31. Legislation passed last month states that unless MPs have backed a Brexit deal by the end of October 19, Mr. Johnson must write to the EU asking for Brexit to be postponed for three months to January 2020. If the EU offers a different date, Mr. Johnson must accept it unless he can persuade the House of Commons to vote against the plan. But the Prime Minister reiterated his stance that he would not seek a third delay, insisting the law does not compel him to do so. That raises the possibility he might refuse to send the letter to EU leaders — setting up a potential clash in the courts. However, Brexit Minister Steve Barclay has insisted the government will obey the law, leading analysts



to argue Mr. Johnson will likely capitulate and reluctantly ask for the postponement. Even if Mr. Johnson has asked the EU for a deal, and it agrees, he could still get Britain out on October 31 by swiftly ratifying his deal. Several of those who backed Saturday's amendment say they would support Mr. Johnson's Bill, once the threat of a "no deal" is removed. Eurosceptic members of his Conservative party have also pledged to back the legislation. However, there is a risk the Bill is hijacked by anti-Brexit MPs, for example to make approval subject to a new EU referendum. Timing could also be an issue. Legislation of this type would normally take months but the MPs of both Houses would have less than two weeks. The default legal position is that Britain leaves the EU on October 31 unless it asks to delay, and the other 27 member states agree. Business and markets across Europe fear the shock of a sudden Brexit that even the government's own assessment says would cause economic damage. After signing off on the Brexit deal this week at a summit in Brussels, EU leaders warned they did not want to see Brexit delayed again. But confronted with a formal request — and the threat of a possible no-deal departure — they would be expected to agree. Mr. Johnson has already tried twice to get an early general election, to allow him to win back a majority in Parliament. But he needs the support of the main opposition Labour party to call one. Labour says it will back an election when the threat of a "no-deal" Brexit is off the table. Labour says any deal should be subject to a new referendum, and has promised to call one if it takes office. Some MPs may try to force the issue during the passage of the Brexit deal legislation, although it is far from clear that they have the numbers to succeed.

## Foreign Affairs

### Delhi Diplomacy to Fight Disaster

- While speaking at the UN Secretary General's Climate Action Summit in New York on September 23, Prime Minister Narendra Modi had announced the launch of the **Coalition for Disaster Resilient Infrastructure (CDRI)** and invited all countries to join it. Ahead of International Day for Disaster Reduction, a look at what CDRI is. Envisaged as an international knowledge platform where countries can collaborate to make their existing and new infrastructure strong enough to withstand natural disasters, CDRI is the fruition of at least three years of discussions that India has had with more than 40 countries on this subject. In simple terms, CDRI is an attempt to bring countries together to share and learn from the experiences of one another to protect their key infrastructure — highways, railways, power stations, communication lines, water channels, even housing — against disasters. Many countries, including India, have over the years developed robust disaster management practices that have helped in sharply reducing human casualties in a disaster. However, the economic costs of a disaster remain huge, mainly due to the damage caused to big infrastructure. According to a recent estimate by the World Bank, Cyclone Fani, which hit Odisha in May this year, caused damage to the tune of \$4 billion. The losses in the Kerala floods last year could be in excess of \$4.4 billion, according to a post-disaster needs assessment report by the state government. In the US, there were 10 climate change disasters this year in which losses exceeded \$1 billion. Much of the developing world is still building its basic infrastructure. Many developed countries are also in the process of replacing old infrastructure that have completed their lifetimes. Future infrastructure needs to take into account the heightened risks arising out of the increased frequency and intensity of extreme





weather events and other adverse impacts of climate change. Even existing infrastructure would need to be retrofitted to make them more resilient. Disaster-proofing a project would involve changes in design, and use of newer technologies. These involve additional costs which, however, are only a fraction of the losses that a disaster can bring. The NDMA is operating as the interim secretariat of CDRI as of now. Disaster preparedness and infrastructure creation are largely national endeavours. However, modern infrastructure is also a web of networked systems, not always confined to national boundaries. There are increasing numbers of trans-national and trans-continental highways and railways; transmission lines carry electricity across countries; assets on a river are shared. Damage to any one node can have cascading impacts on the entire network, resulting in loss of livelihoods and disruption in economic activity in places far away from the site of a disaster. To make entire networks resilient is the main thought behind the Indian initiative of CDRI. The platform is not meant to plan or execute infrastructure projects. Nor is it an agency that will finance infrastructure projects in member countries. Instead, CDRI will seek to identify and promote best practices, provide access to capacity building, and work towards standardisation of designs, processes and regulations relating to infrastructure creation and management. It would also attempt to identify and estimate the risks to, and from, large infrastructure in the event of different kinds of disasters in member countries. CDRI hopes to have as its members not just countries, but organisations like UN bodies, financial institutions, and other groups working on disaster management. It seeks to help member countries integrate disaster management policies in all their activities, set up institutions and regulatory provisions to ensure creation of resilient infrastructure, and identify and use affordable finance and technology. CDRI has sometimes been seen as India's response to the Belt Road Initiative, China's ongoing multi-billion-dollar programme to recreate the ancient Silk Route trading links. China is building massive new land and maritime infrastructure in several countries. India and some other nations view this as an attempt by China to use its economic and military heft to usurp strategic assets in other countries. Though the comparisons are not surprising given the competing strategic interests of the two neighbours, the magnitude and purpose of the two initiatives are starkly different. Unlike BRI, CDRI is not an attempt by India to create or fund infrastructure projects in other countries. Having said that, international initiatives like these are not without any strategic or diplomatic objective. A more relevant comparison of CDRI can, however, be made with the International Solar Alliance (ISA) that India launched at the climate meeting in Paris in 2015. ISA, which has evolved into a treaty-based organisation with more than 50 countries already signed up, aims at a collective effort to promote the deployment of solar energy across the world. Its objective is to mobilise more than \$1 trillion into solar power by 2030, and to deploy over 1,000 GW of solar generation capacity in member countries by that time. **India hosts ISA, with its headquarters in Gurgaon.** The CDRI secretariat too would be based in New Delhi. While it is not envisioned to take the shape of a treaty-based organisation, CDRI can be seen as complementing ISA's efforts. ISA is about climate change mitigation — deployment of more solar energy would bring down the reliance on fossil fuels, thereby reducing greenhouse gas emissions. CDRI, on the other hand, is about adapting to climate change, a need that is inevitable. With these two initiatives, India is seeking to obtain a leadership role, globally, in matters related to climate change.



## Leaving the Door Open to A Border Settlement (Zorawar Daulet Singh Is A Fellow at The Centre for Policy Research)

- Earlier this month, at the second informal summit between India and China at Mamallapuram, off Chennai (October 11-12, 2019), China's President Xi Jinping had told Prime Minister Narendra Modi: "In accordance with the agreement on political guiding principles, we will seek a fair and reasonable solution to the border issue that is acceptable to both sides." But a look at the past will show that the 2005 "Political Parameters and Guiding Principles for the Settlement of the India-China Boundary Question" agreement was a ray of light in an otherwise dim process of talks that began in 1981. It signalled that both sides had substantially converged their positions on the overarching principles that would guide a resolution. The agreement declared that a "package settlement" was the only way forward along with a mutual recognition that this would involve only minor territorial adjustments. Yet, the exercise got suspended in politics soon after and both sides have been unable to engage in meaningful negotiations. When they do decide to move ahead seriously, New Delhi and Beijing would do well to look back at history for the status quo has always been the key to a legitimate settlement. It is now accepted that the frontier politics of British India had failed to produce a single integrated and well-defined northern boundary separating the Indian subcontinent from Xinjiang and Tibet. The legacy, however, was more nuanced across different sectors of the border. In the eastern sector, the British had largely attained an ethnically and strategically viable alignment via the 1914 Shimla conference of British India, China and Tibet, even though the Chinese repudiated the agreement itself. The underlying rationale for the British at the time was to carve a buffer around an autonomous "Outer Tibet" that would eventually fall under its sway. "Inner Tibet" was intended to stay within China's fold. While this attempted zonal division of Tibet never materialised because of Chinese resistance to the idea, the fortuitous by-product of this episode was the delimiting of a border alignment between India and Tibet that mirrors more or less the de facto position today. It is instructive that China's principal concern a century ago was not the precise boundary between Tibet and India but the borders and the political relationship between Tibet and China. This was natural as the Chinese, utterly weak at the time, were primarily concerned about the British extending their sway over much of Tibet. Anyhow, the McMahon Line became the border between India and Tibet. In contrast, the legacy of the western sector was more blurred. This sector, the crux of the dispute, was never formally delineated nor successfully resolved by British India. The fluid British approach in this sector was shaped by the geopolitical goals of the Empire, and was never envisaged to meet the basic requirements of a sovereign nation state. There were almost a dozen British attempts to arrive at a suitable boundary. Most, however, were exploratory surveys by frontier agents reflecting British expansion in the north-west frontiers rather than a concerted pursuit of an international border. And they varied with British geopolitical objectives vis-à-vis a perceived Russian threat. For instance, when Russian influence reached Xinjiang, some British strategists advocated an extreme northern Kashmiri border to keep Britain's main adversary at bay. At other times, a relatively moderate border was favoured, with reliance even being placed on Chinese control of Xinjiang as a buffer against Russia. The net result was that in 1947, no definite boundary line to the east of the Karakoram Pass existed. On the official 1950 map of India, the boundary of Jammu and Kashmir east of this pass was expressed as "Boundary Undefined", while the 1914 McMahon Line, the de facto border between Arunachal Pradesh and China today, was depicted as the boundary in the eastern sector. Hence, in effect, India and China were faced with a "no man's



land" in eastern Ladakh, where the contentious Aksai Chin lay. Between 1954 and 1956, Jawaharlal Nehru engaged in several long exchanges with Premier Zhou Enlai in Delhi and Beijing but the border issue was mostly excluded from their conversations. New Delhi's underlying assumption was that highlighting the border issue would re-open the whole question and provide the Chinese with an opportunity to make all kinds of claims. For Nehru, the 1954 Agreement that affirmed Chinese sovereignty over Tibet (but made no reference to the border) was seen as having "dealt with all outstanding matters and nothing remained..." It is only in December 1956 that the eastern section of the border was raised in the context of the Sino-Burmese border. Zhou Enlai had then remarked that the McMahon Line was an "accomplished fact" and both agreed that the "minor" border problems with India should be settled soon. In early 1957, India invited the Chinese for talks to resolve those "minor" disputes. But that never materialised and was quickly overshadowed by an escalating crisis in Tibet. And China's attempt to restore its authority in Tibet became inextricably linked with its attitude on the frontier with India. India's fateful decision of March 1959 to provide asylum to the Dalai Lama dramatically transformed India-China relations. That year would also witness two bloody skirmishes on the border. Both sides would henceforth perceive each other with deep suspicion and mistrust: India for China's prevarication on the border, and China for India's open interference in its domestic affairs. Despite the dramatic setback to the relationship, there was an opportunity to settle the border question on reasonable acceptable terms. It was at this crucial juncture of the crisis where Nehru along with most of the Indian leadership erred. In April 1960, Zhou Enlai, during his last visit to Delhi, had publicly stated, "As China was prepared to accommodate the Indian point of view in the eastern sector, India should accommodate China in the western sector... We hope, that the Indian Government will take towards the western sector an attitude similar to that which the Chinese Government had taken towards the eastern sector... an attitude of mutual accommodation." Translating this principle into practice would have meant China accepting present-day Arunachal Pradesh as Indian territory in exchange for India accepting Aksai Chin as Chinese territory. Yet, hobbled by fierce domestic opposition and his own emotional impulses, Nehru rejected a potential deal out of hand: "there can be no question of horse trading in this matter — that you take this and we take that." In April 1960, Nehru's response to Zhou Enlai's suggestion of both sides renouncing all territorial claims is also instructive: "Our accepting things as they are would mean that basically there is no dispute and the question ends there; that we are unable to do." This was despite Indian policymakers being aware that India's claim to Aksai Chin was ambiguous at best. Nehru himself admitted this in 1959: "It is a matter for argument which part belongs to us and which part belongs to somebody else. It is not clear." In retrospect, the inability of the Indian side to countenance the swap principle was a missed opportunity that could have eventually settled the dispute and contained the escalating conflict in the ensuing years.

### [A Time-Tested Way to Trade Away Conflict \(Afaq Hussain - Director and Nikita Singla - Associate Director at The Bureau of Research on Industry\)](#)

- Eleven years ago, on October 21, 2008, a truck loaded with rice, turmeric and red chillies crossed the Jhelum river at the Line of Control (LoC) to reach Uri. The banners at Kaman Aman Setu ('bridge of peace') read: "From Home to Home, we extend a very warm welcome to our Kashmiri Brethren." Such was the spirit and the emotion of people on both sides of the LoC. A fresh beginning, it also brought with it the hope of reuniting friends and families across the



LoC. This marked the beginning of cross-LoC trade. **It was in 1972 that the LoC between India and Pakistan was thought of as a part of the Shimla Agreement.** Though the LoC was almost always an issue of contention, it was 33 years later that the two governments decided to take a giant leap. **On April 7, 2005, Indian Prime Minister Manmohan Singh flagged the first cross-LoC bus, called 'Karwaan-e-Aman', from the Sher-i-Kashmir stadium in Srinagar towards Muzaffarabad.** This Confidence Building Measure (CBM) came as a humanitarian reform reuniting divided families and friends. In 2008, a significant year, the two governments decided to further exploit the potential of existing transport routes by establishing trade. In May that year, the Foreign Ministers of India and Pakistan decided to finalise the modalities of intra-Kashmir trade and truck service. **Cross-LoC trade, following barter system, thus began in October that year, across Uri-Muzaffarabad and Poonch-Rawalakot, for a list of 21 mutually agreed tradeable items.** Given the underlying conditions, trade was seen as a ray of hope to establishing peace. This measure was aimed at converting social interconnectedness into commercial interdependence of the two similar yet separate sides of the LoC, rightfully presuming that trade would flourish on the basis of the emotional capital of the people living on either side. The LoC gave rise to hope in the virtuous cycle between trade, trust and people-to-people connect. Cross-LoC trade would have failed in its infancy had it not been for the sentiments of the people attached to it. It was much more than a mere commodity exchange. The whole concept of exchange across this border was not coined as isolated economic activity but, instead, to open a new chapter of building bridges and (re)connecting communities. And cross-LoC trade did manage to connect the two divided sides of Jammu and Kashmir, thereby creating a constituency of peace in an otherwise tense region. **Till April 2019, when cross-LoC trade was suspended by India, both bus links and trade had survived for more than a decade despite intermittent suspensions and ceasefire violations.** Between 2008-2018, trade worth ₹7,500 crore was transacted across the LoC, generating more than 1.7 lakh job days and an approximate freight revenue of ₹66.4 crore for transporters in J&K, on account of 75,114 truck crossings and ₹90.2 crore paid to labourers. While these numbers may be minuscule when looked at through the lens of the overall trade of India, the impact of such CBMs go beyond standard metrics. The case of thriving businesses and reunited families on both sides of the LoC stand testimony to the story of change. A sizeable community of traders, businesses, transporters and labourers have benefited from this trade and have a stake in keeping the trade process active. Given the present situation in J&K, it is imperative that India plans an outreach connecting all stakeholders from across the spectrum including the ecosystem of cross-LoC trade.

[Looking at The Larger Picture \(Mohammed Ayoob - University Distinguished Professor Emeritus of International Relations, Michigan State University\)](#)

- Foreign policy decisions should not be made in a huff. However, India's recent decision to put off Prime Minister Narendra Modi's visit to Turkey scheduled for later this year contradicts this fundamental principle of policymaking. Apparently, New Delhi decided to do so to express its displeasure over Turkish President Recep Tayyip Erdogan's United Nations General Assembly speech in September in which he criticised the Indian government's move to remove the special status accorded to Jammu and Kashmir by diluting Article 370. This decision is not only a sign of knee-jerk diplomacy but also demonstrates a lack of familiarity with Turkey's historical record on Kashmir. **Turkey has traditionally had close relations with Pakistan going back to their common membership of the Central Treaty Organization and the Regional**





Cooperation for Development. Ankara has almost always endorsed Pakistan's position on Kashmir. Both are also members of the Organisation of Islamic Cooperation, which in its resolutions has traditionally supported Pakistan on this issue. Furthermore, Turkey has not been alone in criticising the Indian government's move. It should also be noted that as its economic relations with India had grown, Turkey had moderated its support for Pakistan until New Delhi's move in Jammu and Kashmir. New Delhi should learn to isolate contentious issues and not let them dictate the overall tenor of bilateral relations especially in the case of the two pivotal powers in West Asia — Turkey and Iran. The Arab world is in a shamble. Several Arab states have either failed or are in chaos with governments only in tenuous control of their territories. Even the largest of them, Egypt, has been unable to dig itself out of the morass it has landed in following the abortive Arab Spring and the return of a military dictatorship harsher than the Hosni Mubarak regime. In fact, Egypt had abnegated its leadership role in the Arab world decades ago and has been dependent on American aid and sustenance to keep itself afloat. Saudi Arabia has turned out to be a colossus with feet of clay. While it sits atop a huge reservoir of exportable oil, its antediluvian political system is demonstrating increasing fragility. Until a few years ago it showed some semblance of stability because its political system was underpinned by a consensus within the extended ruling family. The regime's base has radically narrowed with the ascension of Mohammad bin Salman, who has concentrated political power in his hands. He subsequently arrested and humiliated other members of the House of Saud, thus alienating much of the rest of the Saudi clan. His high-handed policies towards the erstwhile ruling elite and his increasingly adventurist foreign policy, as in Yemen, which the Saudi economy and military are unable to sustain, has increasingly discredited the personalised character of his rule. One should not be surprised if, sooner rather than later, a coup supported by several princes takes place in Saudi Arabia, putting an end to the incumbent's despotic rule and possibly plunging the kingdom into chaos. Riyadh's response to the latest Iranian-supported attack on its oil facilities clearly showed the kingdom's complete dependence on the U.S. When U.S. President Donald Trump refused to oblige, Crown Prince Salman pleaded with the Iraqi and Pakistani Prime Ministers to mediate between Riyadh and Tehran to prevent a repetition of such incidents. This leaves Turkey and Iran, in addition to Israel, as the only serious players in West Asia. Both Ankara and Tehran have the technological capacity to attain nuclear weapons capability that will add to their clout in the region. It will be unwise for India to alienate one or both in a pique over isolated incidents. Such incidents ought to be quarantined so as not to affect India's overall relationship with the two pivotal powers in the region.

## Nation

### Killer Cyanide in Kerala

- Police in Kerala have arrested a woman for allegedly killing her husband, parents-in-law and three other members of the extended family over a period of 14 years using cyanide. The chemical was allegedly supplied to the woman by a jewellery salesman who procured it from a goldsmith. Both have been arraigned as accused in the case. **Cyanide is used in the extraction and polishing of gold, and for gold-plating. The ornament industry uses the chemical to give gold its reddish yellow colour, believed to be the "original" colour of the metal, and for ridding it of impurities.** Kerala is among the country's biggest consumers of gold jewellery.

[Shatabdi Tower, Sakchi, Jamshedpur](#)



The stocking and sale of cyanide is regulated by The Kerala Poisons Rules, 1996, which were notified under The Poisons Act, 1919, which empowers state governments “to regulate possession for sale and sale of any poison”. The Drugs Control Department under the Government of Kerala’s Health Department issues permits for stocking cyanide for professional use, and licences to stock and sell the chemical. Any individual or institution can apply for both under relevant sections of The Kerala Poisons Rules, 1996. The applicant must have a valid and legal reason to seek the permit or licence, as well as a technically qualified person to oversee the storage and handling of the lethal toxin. The Drugs Control Department says only 35 agencies — research institutions, universities, academic bodies, or labs in the government or private sector — have permits to stock cyanide. An agency can at a time stock only 250 grams; the average annual cyanide intake of an institute in Kerala is 250 g to 500 g. Cyanide crystals come in packets of 250 g. The chemical has an expiry date of three years from manufacture. Permits have to be renewed every year. There are no valid cyanide licences — meant for sale of the chemical — in Kerala at present. Cyanide is legally sourced from a Mumbai-based agency, which sells the chemical under strict restrictions to institutions or individuals who are able to furnish the relevant certificate issued by the Drugs Control Department. The permit-holder has to appear in person before the agency to procure the allotted quantity of chemical. The industrial use of cyanide is allegedly dependent on smuggling or illegal imports. The small quantities involved make it difficult to detect and seize illegal consignments, officials said. A police officer of the rank of Sub-Inspector can suo motu register a case of illegal trade in cyanide. The last seizure of cyanide that officials could recall took place in 2002, when sales tax officials at an inter-state border check post in Palakkad seized 250 kg of the chemical from a truck. The consignment, imported from Australia, was meant for an individual in Kozhikode. Investigations revealed the chemical was meant for the gold industry. The accused individual was convicted and fined a paltry ₹250 as per the law. State Drugs Controller Ravi S Menon said it is proposed to amend The Kerala Poisons Rules in the wake of recurring incidents of acid attacks, as the use and stocking of acid also come under the purview of the Rules.

### What Clearances Do CMs Need to Go Abroad?

- Delhi Chief Minister Arvind Kejriwal addressed a conference in Denmark through videoconferencing, with the Centre having denied clearance to a trip abroad. For a foreign trip, public servants need political clearance from the External Affairs Ministry. Since 2016, applications for political clearance can be made online, on a portal opened by the Ministry. These are processed and clearance issued through coordination among various Ministry divisions. During the previous UPA regime, the External Affairs Ministry denied political clearance for trips by then Chief Ministers Tarun Gogoi (Assam, Congress) to the US and Israel, and to Arjun Munda (Jharkhand, BJP) to Thailand. Gogoi had wanted to visit New York for a “high level meeting” on April 2, 2012; a note from the Ministry said “. direct correspondence by a diplomatic Mission with a State Government being inappropriate”. Chief Ministers, state ministers and other state officials also need clearance from the Department of Economic Affairs. For Union ministers, after getting political clearance from the External Affairs Ministry, additional clearance is needed from the Prime Minister, whether the trip is official or personal. Lok Sabha MPs need clearance from the Speaker, and Rajya Sabha members from the Chairperson (Vice President of India). For various ministry officers up to Joint Secretary level, clearance is given by the minister concerned, after political clearance. For those above that rank, the proposal needs approval of a screening committee of secretaries.



Rules vary according to the duration of the visit, the country to be visited, and the number of members in a delegation. If the foreign trip involves the hospitality of organisations other than those of the UN, then FCRA clearance is needed from the Home Ministry.

### Why Lok Sabha is Still 543

→ Article 81 of the Constitution defines the composition of the House of the People or Lok Sabha. It states that the House shall not consist of more than 550 elected members of whom not more than 20 will represent Union Territories. Under Article 331, the President can nominate up to two Anglo-Indians if he/she feels the community is inadequately represented in the House. At present, the strength of the Lok Sabha is 543, of which 530 have been allocated to the states and the rest to the Union Territories. Article 81 also mandates that the number of Lok Sabha seats allotted to a state would be such that the ratio between that number and the population of the state is, as far as possible, the same for all states. This is to ensure that every state is equally represented. However, this logic does not apply to small states whose population is not more than 60 lakh. **So, at least one seat is allocated to every state even if it means that its population-to-seat-ratio is not enough to qualify it for that seat.** As per Clause 3 of Article 81, population, for the purpose of allocation of seats, means “population as ascertained at the last preceding census of which the relevant figures have been published”. In other words, the last published Census. But, by an amendment to this Clause in 2003, the population now means population as per the 1971 Census, until the first Census taken after 2026. The strength of the Lok Sabha hasn't always been 543 seats. **Originally, Article 81 provided that the Lok Sabha shall not have more than 500 members. The first House constituted in 1952 had 497.** Since the Constitution provides for population as the basis of determining allocation of seats, the lower House's composition (total seats as well as readjustment of seats allocated to different states) has also changed with each Census up to 1971. A temporary freeze was imposed in 1976 on 'Delimitation' until 2001. Delimitation is the process of redrawing boundaries of Lok Sabha and state Assembly seats to represent changes in the population. However, the composition of the House did not change only with delimitation exercises in 1952, 1963, 1973 and 2002. There were other circumstances as well. For instance, the first change in the composition of Lok Sabha happened in 1953 after the reorganisation of the state of Madras. With a new state of Andhra Pradesh carved out, 28 of Madras's 75 seats went to Andhra Pradesh. The total strength of the House (497) did not change. The first major change took place after the overall reorganisation of states in 1956, which divided the country into 14 states and six Union Territories. This meant subsequent changes in the boundaries of existing states and hence, a change in the allocation of seats to the states and Union Territories. So, with reorganisation, the government also amended the Constitution by which the maximum number of seats allocated to the states remained 500, but an additional 20 seats (also maximum limit) were added to represent the six Union Territories. So, the second Lok Sabha elected in 1957 had 503 members.

### Escaping the Honey Trap (Vinayak Dalmia Is A Lawyer and Writer. He Is an Expert On Issues Of National Security, Technology, Geopolitics & Foreign Affairs)

→ In June, it was discovered that a Pakistani spy going by the Facebook name “Sejal Kapoor” had hacked into the computer systems of more than 98 personnel of various defence forces, including the Indian Army and the Indian Air Force, between 2015 and 2018. “Sejal” had lured these personnel (mostly men) by using the oldest trick in the book — **honey traps** — served



with a new-age digital twist. She showed them videos and pictures via a malware originating from West Asia. Amongst other things, classified details of the BrahMos missile programme were leaked to Pakistan. **Two viruses, Whisper and GravityRAT, were used with more than 25 Internet addresses to mask her actual identity.** Malware is short for malicious software. It is designed to either gain access to or damage someone's computer network. For example, ransomware is a kind of malware. **Compared to traditional methods of honey trapping, this operation was swift, clean, and without any physical risk to the enemy. Moreover, unlike physical affairs, this one was scalable — "Sejal" managed to lure multiple targets simultaneously.** The Military Intelligence wing together with the U.P. Anti Terrorist Squad cracked the "Sejal" case leading to the arrest of BrahMos senior engineer, Nishant Agarwal. There is no estimate of how many more are yet to be exposed, since malware can lie dormant for months or years before being detected. To give an idea of the danger, **Facebook admitted that up to 270 million of its accounts are fake.** These are mostly bots or honey traps. In the world of intelligence, information is the principal currency. Sex, or the promise of it, has always been an enigmatic subject. For millennia, spies across the world have used sex to encircle people and get access to valuable information. Some years ago, MI5 released a memo warning British banks and businesses against the threat of Chinese 'sexpionage'. During World War II, Salon Kitty, a Berlin brothel, was used by the German intelligence service for espionage. Before the fall of the Berlin Wall, East Germany recruited men to seduce women in important positions in West Germany. The story of such 'Stasi Romeos' is well documented in Marianne Quoirin's book, Agentinnen aus Liebe (The Spies Who Did It for Love). By some accounts, the Soviet Union had a school called State School 4 in Kazan, south east of Moscow, which was used to train officers in the art of honey trapping. Today, the nature of honey trapping has changed. **With all aspects of our life turning virtual, from shopping to dating, it was only natural that the art of honey trapping too would turn digital.** There are two ways of entrapping someone online. **The first is via a social media profile, by infecting their lives and devices. The second is to find someone on adult sites and inject malware into their phones and computers.** According to reports, **three of the world's 20 most visited websites are pornographic-related sites.** It is important to note that **25% of all Android malware is porn-related.** A 2017 study found that a hacker collective known as **KovCoreG** had been targeting millions of users of the site **PornHub**, tricking them into installing viruses on their computers. Such an effort can lead to long periods of blackmail and information-sharing; sometimes it is a one-off intelligence grab. It is also important to note that women are as vulnerable to the same hacks as men in honey trapping. What is the modus operandi for honey-trapping people? **According to a report, a young and pretty woman may 'like' the photographs posted by a soldier on social media and leave a comment saying something like, "Wow, Jai Hind!" or "Thank you for keeping us safe".** The conversation eventually moves to intimate messages over WhatsApp. It turns out later that this online patriot woman is actually a spy looking to extract valuable information through blackmail. So, what is India doing about this? In February this year, in a written response to a question in the Rajya Sabha, Minister of State for Defence Subhash Bhamre said the Army reported two cases of honey-trapping in 2015 and another two in 2017. The Indian Air Force reported one case in 2015, while the Navy did not report any. As a result, advisories were issued. The military intelligence is carrying out selective checks on phones, laptops and desktops of officers and soldiers in sensitive areas, sources say. The Army has described honey-trap cases as a weapon of hybrid warfare being waged by the enemy across the borders. **Army Chief General Bipin Rawat has cracked the whip on social media usage. A list of dos and don'ts have been prepared. An information warfare team is being set up at the Army**





headquarters. Suspected Twitter handles and Facebook accounts have also been identified. There are other countermeasures that must be employed. For example, the **Federal Bureau of Investigation runs fake child pornographic websites to catch offenders of the same crime.** Other measures that India could take include investing in the latest technologies for early and better detection of viruses; conducting frequent workshops to sensitise defence personnel against cyber risks; conducting timely reviews and audits of all devices; developing better protocols in the event of contamination; developing a methodology to embed dormant malware in all sensitive data and devices which will be able to track the bad actors and destroy the documents with a programmed kill switch; and developing a doctrine to hit back. The Defence Cyber Agency should be leveraged towards this end. Besides this, best cyber practices must be built amongst fresh recruits. **From killer drones to cyberattacks, modern warfare is becoming more and more faceless. Moreover, unlike conventional warfare, the cost and barrier to entry into enemy territory has gone down drastically. Malware is readily available on the darknet to anyone with a cryptocurrency wallet.** So, every keyboard is practically a weapon. In this information age, the enemy will be relentless and continue to invest and recruit heavily in these methods. India needs to act fast to deter such threats.

[Redirecting Money from The Gulf \(K.P.M. Basheer- Formerly Deputy Editor, The Hindu, Kerala-Based Independent Journalist\)](#)

- 'Drop your plan to buy a new car. Avoid eating out. Only buy things you absolutely need. Make do with public transport. Go to government hospitals, not to expensive private ones.' These were the highlights of a WhatsApp advisory sent out by a Gulf-based organisation two months ago. The advisory targeted the families of non-resident Keralite workers based in the Gulf countries, against the backdrop of the creeping economic slowdown in India. The final advice on the 'things not to do' list was that those who were employed in the Gulf countries should never give up their jobs, even if they didn't get paid on time, "for, there are not many jobs to go around back home because of the economic slowdown." The advisory was interesting for two reasons: first, the fact that the diaspora community had sensed, ahead of most people in India, that a slowdown in the Indian economy was imminent; and second, the delayed realisation that non-resident Keralite families must curb certain consumerist habits that were a result of the massive amounts of remittance money they were receiving. A recap of the contours of Kerala's demographic and economic profile is in order here. **Roughly a tenth of Kerala's 34 million population works abroad — a huge majority of them in the Gulf countries.** Kerala's economy is a consumerist one that has, for decades, been propped up by the massive remittances from non-resident Keralites. Exact numbers are hard to come by, but one estimate is that non-resident Keralites pump close to ₹200 crore daily into the State. **Kerala gets roughly a fifth of all NRI remittances to India. For all its natural resources, impressive literacy and highly evolved State welfare system, Kerala produces very little of its daily needs, including foodgrain and vegetables.** Manufacturing contributes less than 10% to the State's GDP. Agriculture's contribution is a little above 10%. The unemployment rate is very high. Yet, Kerala's per capita income is above the national average. Modern mansions can be seen dotting both sides of the road across many parts of Kerala. High-end cars and boutique jewellers' shops are also common. This is because of remittance money. **Ever since the labour migration to the Gulf started in the 1960s, enormous sums of money have flowed into Kerala. One estimate is that since the beginning of the 21<sup>st</sup> century, some ₹10 trillion has arrived in the State, including from the UAE, Saudi Arabia, Kuwait, Qatar, and Oman.** But almost all this money has gone into



consumption and unproductive investments in land, real estate and gold. Why did the non-resident Keralites fritter away their hard-earned money this way, rather than put it into productive ventures? There are many reasons, including systemic rigidities, trade union overkill, lack of imaginative investment avenues, and the absence of a visionary policy framework. The WhatsApp advisory might have appeared counterintuitive as macroeconomists say that curtailing consumption will accelerate the slowdown. However, the unstated subtext is that Kerala has enough mansions, cars and jewellery to last another generation. What it lacks is jobs — for residents of the State who are unemployed as well as for non-resident ones who cyclically lose their Gulf jobs and are forced to return home. Had the non-resident Keralites invested even 1% of the massive amount they pumped into Kerala over the past two decades in job-generating ventures, the next generation would have been spared the need to hunt for jobs in the Gulf.

### What Makes J&K Block Elections Unique, Who Are in The Fray

→ Jammu & Kashmir, as well as Ladakh, will witness their first elections since August 5, when the state of Jammu & Kashmir lost its special status and was bifurcated into two Union Territories. The elections to 310 posts of **Block Development Council (BDC)** chairperson are being held amid a continued shutdown in the Valley, with three of the major parties out of the fray and their top leadership under detention. Block chairpersons are elected at the second tier of the Panchayati Raj system, between the election of panches and sarpanches by the people, and of the election of chairpersons of the District Planning and Development Boards. In a state that has had only four panchayat elections so far (1978, 2001, 2011, 2018), block chairpersons' elections are being held for the first time. Under the Jammu and Kashmir Panchayati Raj Act, it is the panches and sarpanches, elected at the first tier, who subsequently vote for the BDCs in their respective blocks. The elections are being held for 310 of the 316 blocks in J&K and Ladakh. Apart from being the first ever BDC chairperson elections in Jammu and Kashmir, they are being held in unique circumstances. These are the first elections since the August 5 move, and are being held in the backdrop of the detention of Kashmir's entire mainstream leadership, including that of three former chief ministers (Farooq Abdullah, Omar Abdullah and Mehbooba Mufti) and a sitting MP. For that reason, their parties — the National Conference and the People's Democratic Party — have boycotted the elections. So has the Congress. With the leadership of all parties barring the BJP behind bars, questions have been raised over the credibility of the process in the Valley. The State Election Commission said 1,092 candidates are in the fray for the 310 posts. Among them, 853 are independent candidates and 218 are of the BJP, together making up 1,071. Twenty-seven of the candidates have been elected unopposed, leaving 1,065 candidates for the remaining seats. **Any panch or sarpanch can stand for the post of BDC chairman. In a first, the government has reserved 33% seats for women. The strength of the electorate is 26,628 panches and sarpanches. These are from among the 23,376 panches and 3,847 sarpanches who were elected in undivided Jammu and Kashmir in November-December last year. Those panchayat elections, held over nine phases, had a very poor response. Within Kashmir, a huge number of seats remain vacant — 11,264 of 18,833 panch seats (61 per cent) and 1,311 of 2,375 sarpanch seats (34 per cent). Of the 7,596 panches in Kashmir, more than half were elected unopposed. The State Election Commission said only 1% of the seats in Ladakh division and 2% in Jammu are vacant.** Chief Electoral Officer Kumar said the vacant positions will be filled within one year, and if needed the BDC elections for those seats will be conducted separately. The government's thrust will be on establishing the third tier of District Planning and Development Boards. The Board of a district will comprise



all BDC chairpersons, urban local body chairpersons or presidents, the local MLA and the MP. District Planning Board members and the chairperson would oversee all developmental activities taking place in their area.

### Treading Cautiously on The Final Naga Peace Agreement (M.P. Nathanael - Retired Inspector General of Police, CRPF)

- Around the time that the Centre announced the abrogation of special status for Jammu and Kashmir (J&K) under Article 370, there was a flutter of anxiety, bordering on panic, in the North-Eastern States, particularly in Nagaland, which enjoys certain special privileges under Article 371(A) of the Constitution. The State's Governor, R.N. Ravi, assuaged the angst through assurances that there would be no tampering with Article 371(A). Given that J&K Governor Satya Pal Malik had given a similar assurance to the denizens of that State when former Chief Minister Omar Abdullah met him two days before the constitutional change was announced, the Naga people are justifiably sceptical about the statements of their Governor that Article 371(A) is a "solemn commitment to the people of Nagaland..." and that they "don't have to worry at all." For reasons best known to the concerned officials in the government and the signatories on behalf of the National Socialist Council of Nagaland (Isak-Muivah), the Framework Agreement, which was signed with much fanfare in the presence of the Prime Minister Narendra Modi in 2015, has remained under wraps. Was there something in the agreement that was hindering its disclosure? Perhaps it was a clause regarding a separate flag and Constitution for Nagaland? Could the Centre have strategized that the final agreement for Nagaland would only be announced after the decision on J&K, so that the latter could serve as a precedent event and render reversal of any aspects of the Naga agreement — including clauses on its flag and Constitution — impossible? Herein lies the crux of the matter. While the Nagas maintain that "the Naga national flag is the symbol of the recognised Naga entity... the Constitution of the Nagas is the book form of the recognised sovereignty," the Centre has conveyed its firm stand that the matter stands rejected. Meanwhile, akin to actions taken in J&K, leaves of all government officials including police personnel have been cancelled and the State put on alert. While the Naga National Political Groups (NNPG), an umbrella organisation of seven insurgent groups, has consented to be a signatory to the agreement for the time being, it has asserted that the Naga Constitution, must be drafted by a committee of distinguished personalities from every Naga tribe. Though the NNPG does not distance itself from the final agreement, it holds the view that such a Constitution could be drafted subsequently. Currently, to meet the deadline of October 31, the agreement seems to be getting pushed forward, with the Centre hopeful that the talks slated for October 24 will be decisive and final. However, with the NSCN (I-M) obdurate in its stand of having a separate flag and Constitution, the situation could take a turn for the worse. In a reference to the armed outfit of NSCN (I-M), the Centre has categorically stated that talks at gunpoint are not acceptable and has directed all armed outfits including the NSCN (I-M) to decide upon a date for surrender of all arms in their possession. While the other outfits like NSCN (Khaplang), NSCN (Unification) and NSCN (Reformation) may readily agree to surrender their arms, the NSCN (I-M) may not give up as easily, unless of course the prospect of governmental berths being offered in the Nagaland Assembly might be allurements enough for it to do so. The Centre also could do well to step back from its rigid position of forcing an agreement that a major political stakeholder is not willing to ink. The government will have to tread cautiously



in tackling the situation lest a variant of the pre-1997 militancy returns to the State. That would be a retrograde development, especially given the last 22 years of hard-fought peace.

### Scholarship in Times of Populism (Neera Chandhoke - Former Professor of Political Science at Delhi University)

→ For long we believed that civil liberties codified in the Constitution and defended by the civil liberties movement had been secured. We could move on to transforming Directive Principles of State Policy, notably the right to social goods, into fundamental rights. Today our basic civil liberties are threatened. Civil society has been rendered powerless, and state institutions that could make a difference prudently keep away. Who would have thought that over seven decades after India's independence we, the legatees of a magnificent freedom struggle, have to prove citizenship? Who could have imagined that one day a democratic government would spend its time and our money into figuring out who is a citizen, and who is not, and build bare detention camps for the latter? These summon up terrible historical parallels. Television images of tin-topped sheds evoke horror and disbelief. They have been designed for our own people, who have mixed their labour with the land they wish to live in. The second lesson we have learnt is that nationalism can be easily appropriated. Nationalism formed the anchor of our freedom struggle. It is also the excuse for some very unpalatable efforts to repress us. The concept has been deployed by governments to target minorities and immigrants, to dismiss dissent as sedition, to justify oppression, and to reduce our status from citizens to subjects. Nationalism has legitimised rhetoric and decisions that would have aroused widespread political protest a few years ago. The vulgarities of a nationalism that prevents debate, let alone dissent, bewilders; it saps energies.

Perhaps. We unthinkingly fell into the trap of believing that we had a civic nation, other countries of the postcolonial world had ethnic nationalism. The distinction was a western construct and continues to be so. **Writing in the aftermath of the Second World War, Hans Kohn argued that territorially based civic nationalism is infinitely more desirable than cultural or ethnic nationalism.** The former is the culmination of a political movement that sought to limit governmental power and secure civic rights in the United Kingdom, the United States and France. The temporal and the spatial contexts for ethnic nationalism, which arose later in central and eastern Europe and in Asia, were different. **Consolidated in times of social and economic underdevelopment, ethnic nationalism articulated the belief that a community is held together by 'blood and belonging'.** Kohn's distinction between two sets of nationalism set the stage for subsequent discussion on the subject. The difference has by now become an integral part of literature on nationalism. In the 1990s, ethno-cultural nationalism again raised its head in distressingly ugly forms, that of **ethnic cleansing and genocide in former Yugoslavia and other countries of Eastern Europe.** The duality was reinforced. Scholars continued to believe that the idea of the civic nation was best conceptualised by Ernest Renan and the ideology of the French Revolution. **The concept of ethnic nationalism articulated by Johann Gottfried von Herder and German Romanticism arose as a reaction to the Enlightenment and its commitment to reason.** The distinction between the two is overstated. In 1923, V.D. Savarkar, the prime ideologue of the Hindu right, cast the political category of the Indian nation in the mould of the majority religion. The nation is Hindu because the community has a common history, common heroes, a common literature, a common art, a common law, and a common jurisprudence, common fairs and festivals, rites and rituals, ceremonies and sacraments. Others are outsiders. This was not the kind of nation that India's first Prime





Minister Jawaharlal Nehru conceptualised and dreamt of, democratic, secular and inclusive. In 1933 Nehru wrote in The Bombay Chronicle: "Whither India? Surely to the great human goals of social and economic equality, to the ending of all exploitation of nation by nation, and class by class, to national freedom within the framework of an international cooperative socialist world federation." Within a decade we see two incompatible notions of the nation taking shape and shaping each other. Beneath and around civic nationalism marked by citizenship rights, lurked ethnic nationalism that divided and excluded. Today it is precisely ethnic nationalism that has won the battle. Civic nationalism gasps for breath. The case is not all that different in Europe. In France, England and the U.S., wrote the noted historian Eric Hobsbawm, democratic revolutions produced a populist consciousness, which was hard to distinguish from a national and even a chauvinistic patriotism. Merely by dint of becoming a people, the citizens of a country became citizens of a community seeking for things in common, "places, practices, personages, memories, signs, and symbols". Today within these societies, norms of democratic, civic nationalism cannot prevent hate against immigrants and suspicion of the outsider. **All nationalisms, howsoever moderated they may be by constitutionalism and civic sentiments, show a terrifying tendency to xenophobia.** History has warned us. The concepts and the theories we explore and expand upon might prove provisional. The days when political philosophers dreamt that they had resolved political dilemmas have gone. Politics, we have learnt is chancy, unpredictable, and contingent. How can our theories be neat, confident, and predictive? We no longer know what we speak of when we speak of democracy, or accountability, or the power of citizens to hold their elected government responsible. The terms of the social contract are up for grabs. Life has become much more unpredictable, much more uncertain and much more frightening. Do we have the luxury to conduct intense intellectual debates and charged polemics? We might have to put aside, for the moment at least, some very sophisticated debates that marked academia hardly six years ago. We have to get back to the basics. We have once again to reiterate and defend the basic principles of constitutional democracy.

### [When the Abstract Destroys the Physical Being \(Tabish Khair - Indian Novelist And Academic Who Teaches In Denmark\)](#)

- There are families in South Asian nations who would kill their child — usually a daughter — for the sake of 'family honour.' **Here, the concept of 'family' is detached from its constituent: the daughter.** In order to 'preserve' the concept of 'family,' such families actually kill their children — or, at least, rob them of a chance to lead the life that would make them happy. I, for one, have never understood how one can destroy the physical fact of a family — a child, who is always a link to the future for any family — for the abstract concept of a family. But, of course, this happens at larger levels too. We kill or hound people who believe differently in our religion for the sake of that religion. We persecute and brutalise citizens who have a different vision of our nation for the sake of that 'nation'. Recently, I read of Dalit children being beaten to death for defecating in the open. Apart from the caste violence that this exposed, it struck me with force that the necessary movement to stop open defecation is being misunderstood by many Indians. It is being seen in terms of prestige, when actually it is a matter of health and welfare. Open defecation is bad not because it reduces the prestige of our nation in the eyes of passing tourists or journalists. It is revealing that nationalists who claim to be inordinately proud of our 'Indian-ness' should be so inordinately conscious of the opinions of foreigners, usually white. No, open defecation is bad because of the health hazards it poses — not only in terms



of diseases, but also in terms of what it does, physically, to those who do not have access to decent toilets. There are scientific papers that have highlighted the connection between open defecation and low nutrient levels in children. To brutalise someone forced by circumstances to defecate in public makes the concept of 'national prestige' more important than the person of national citizens. But what is a nation without its citizens? This is similar to killing a daughter for the sake of family honour. One of the greatest drawbacks of idealist definitions of 'religion' or 'nation' is actually this: the concept takes over and destroys the human being. It is also in this context that one needs to be very adamant about not defining 'human rights' on the basis of religious, national or cultural differences. If this sounds like a contradiction to what I have said about abstract concepts until now, let me rephrase it: just as a family cannot be separate from or above family members and a nation can only be its citizens, human rights have to be rooted in the actual biological existence of human beings in society. Various other rights may differ from society to society, but basic human rights have to be the same across all such differences. If differences of nationality, culture, gender, colour, sexuality, etc. mean that basic human rights have to change across these categories, then we are basically arguing that the 'human' does not exist, or it exists only as an abstract concept, un-rooted in biological and other realities. This has often been the argument of racists in the past, and is sometimes assumed by extreme sexists today: the former has denied the 'humanity' of certain races, and the latter implicitly reduce the 'humanity' of women. This has always been my main objection to those religious Muslims, some of them friends and even relatives, who justify a different standard of treatment for women. As long as these standards do not limit the human scope of women — which means their right to have the same access to shelter, food, inheritance, reproductive rights, education, and freedom of movement as men — I am willing to accept it, just as I am willing to accept the fact that in India we drive on the left while in Denmark we drive on the right. But basic human rights — that is, access to shelter, food, inheritance and reproductive rights, education, and freedom of work and movement — cannot be denied on the basis of gender differences, just as they cannot be denied on the basis of 'race'. **It is a pity that today, in India, there are politicians who do not seem to realise this. To claim differences of basic human rights on the basis of difference of culture or nationality is to fall into the same trap than many Muslims have fallen into with reference to their understanding of their religion. And it is a double pity, because just as the sacred texts of Islam can be read in ways that are compatible with human rights, the history and cultures of India can also be read in ways that are compatible with human rights.** The choice is always ours. However, it is not a choice that many in power are willing to give to us. The reason for this is simple. I will illustrate it with reference to my original example: if you are a patriarch running your family with an iron hand, your power depends almost entirely in using the abstract and alienated notion of 'family' against the actual opinions, desires and experiences of flesh-and-blood family members. And you would be willing to occasionally sacrifice a family member to maintain this power. In that sense, finally, whether it is a family or a nation, human rights are inseparable from a full understanding of democracy.

### 'Foreign' Plastic Invades Great Nicobar Island

- ➔ The pristine beaches of the Great Nicobar Island, India's southernmost territory, are under threat from plastic. A survey of five beaches in the islands recorded the presence of plastic bottles. Sixty of these were analysed and found to be of 'non-Indian origin,' according to researchers, whose findings appear in the latest edition of Current Science. **"Major portion of the litter (40.5%) was of Malaysian origin. It was followed by Indonesia (23.9%) and Thailand**



(16.3%). Other countries contributed a minor portion,” researchers Biraja Kumar Sahu and B. Baskar note in their study. The litter of Indian origin only amounted to 2.2%, they said. Mr. Sahu is affiliated to the CSIR-Institute of Minerals and Materials Technology and Mr. Baskar to the Mayo Clinic, Rochester in Minnesota, USA. About 10 countries including India contributed to the plastic litter in the island. They were Malaysia, Indonesia, Thailand, Singapore, Philippines, Vietnam, India, Myanmar, China and Japan. The overwhelming contribution from Indonesia and Thailand was likely due to its proximity to the island; the plastic is likely to have made its way to the island because of water currents via the Malacca Strait, which is a major shipping route. “The huge quantities of marine debris observed on this island might be due to improper handling of the solid waste from fishing/Mariculture activity and ship traffic,” the researchers note. However, the researchers also point out that litter of Indian origin on beaches and mangroves of the Andaman Islands is continuously increasing. This is probably due to lack of proper guidelines and inadequate staff to monitor these islands, they said. The Great Nicobar Island of Andaman has an area of about 1044 sq. km. According to the 2011 census, has a population of about 8,069. The island is home to one of the most primitive tribes of India — the Shompens. The island includes the Great Nicobar Biosphere Reserve (GNBR) comprising of the Galathea National Park and the Campbell Bay National Park. The island harbours a wide spectrum of ecosystems from tropical wet evergreen forests, mountain ranges and coastal plains. The island is also home to giant robber crabs, crab-eating macaques, the rare megapode as well as leatherback turtles. Plastic pollution has emerged as one of the severest threats to ocean ecosystems and its concentration has reached 5,80,000 pieces per square kilometre. Plastic represents 83% of the marine litter found. The remaining 17% is mainly textiles, paper, metal and wood.

### Mizoram Becomes Top State with HIV Prevalence Rate

- ➔ Mizoram, one of the least populated States in India, reports nine positive cases of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) a day. The virus “strike rate” has made Mizoram top the list of States with an HIV prevalence rate of 2.04% followed by two other north-eastern States — next-door neighbour Manipur with 1.43% and Nagaland with 1.15%. Data compiled by the Mizoram State AIDS Control Society (MSACS) show that 67.21% of the positive cases from 2006 to March 2019 have been transmitted sexually, 1.03% of the transmission route being homosexual. The next major cause, accounting for 28.12% cases, is infected needles shared by intravenous drug users. The Christian-majority State bordering Bangladesh and Myanmar has battled drug trafficking and abuse for a long time. Narcotic substances such as methamphetamine and heroin are smuggled in from Myanmar.

### Hindutva’ s Attempt at Rewriting History Is Futile (Vikas Pathak - Teacher at The Asian College of Journalism, Chennai)

- ➔ Home Minister Amit Shah’s call to rewrite history isn’t surprising. Each regime seeks legitimacy from the past and the Bhartiya Janata Party (BJP) government isn’t an exception. That Mr. Shah added that the rewriting should be from an “Indian perspective” was also politically astute, aimed as it was at creating the impression that the BJP’s world view alone qualifies as “Indian”. The truth, however, is more complex. Rewriting of history was creatively attempted long back when Tara Chand sought to counter the colonial attempt to see religious conflict as central to India with a counter-narrative of composite culture. Of course, there were



other, conservative, Indian scholars like **Jadunath Sarkar and R.C. Majumdar** who also sought to write history from “Indian perspectives”. With Marxist historiography — **D.D. Koshambi** blazed the trail in the 1950s — becoming part of India’s official history in the 1970s, conservative historians slowly went out of the syllabi of top universities. What Mr. Shah is seeking now is a fresh meta-narrative to make sense of India’s past in sync with the BJP’s world view. But the task is easier said than done. Former Minister for Human Resource Development **Murli Manohar Joshi** had tried something similar around two decades ago. But, as a professor of physics, he fell into a ‘positivist’ trap, viewing history through the prism of the natural sciences. He, thus, insisted that he was attempting a “rectification” of history, as if there was a “correct” history waiting to be rescued from Marxist historiography. The half-hearted attempt shorn of rigour bore no fruit. For, history writing, as philosophers of history **E.H. Carr** and **R.G. Collingwood** have argued, is never “objective”. Mr. Joshi failed to create grounds for a possible, alternative, Hindutva school of history writing. Such a school would have had its own problems — perhaps it would have undermined the role of minorities — but it would at least have offered Hindutva a historiography of its own. In this sense, Mr. Shah is a step ahead of Mr. Joshi. Yet, there is considerable evidence to say that Hindutva will find it difficult to build an alternative historiography. To begin with, it has very few people having the competence for such an exercise. There are reasons for this. **One, top universities are generally liberal or left spaces, and much talent automatically turns away from Hindutva.** Another reason is the very orientation of Hindutva: while leaders emerging from its ideological universe aren’t averse to viewing science, technology and economics through the prism of the global academia, they want to maintain autonomy in the realm of history writing. This may by itself be a laudable principle, but it comes with a serious problem of backward projection of modern science into the ancient past. Much effort is wasted in seeking to make the Indian civilisation look older by somehow trying to push back its antiquity. **The endeavour is surprising, as our antiquity isn’t under question. The problem lies in the non-acceptance of Indian knowledge traditions in the wider scheme of world philosophy. This makes a globally accepted, autonomous, Indian epistemological tradition difficult to construct. Talking about ancient aviation on the basis of a suspect ‘Vaimanika Shastra’, reading the Mahabharata and Ramayana literally to allege the presence of modern science in ancient India, or claiming purportedly therapeutic effects in cow urine only take Hindutva voices farther from acceptable academic knowledge.** Yet, they stick to these positions and bitterly claim a Western or liberal conspiracy to put them down. The fact remains that very few in the Hindutva universe are even engaging in academic debates with rigour. Even rejections of Eurocentrism have come more from the likes of **Ashis Nandy** and **T.N. Madan**. Mr. Shah talked about the need to know more about the Gupta empire. However, what he is oblivious of is that alternative perspectives do not spring from the projection of one king over another but require a deeper epistemological engagement that proposes new categories for making sense of the world. And these must arise from within Indian traditions, if the alternative claims to be “Indian”. For this, the traditions have to be read anew. And this will happen not by discarding current readings but by transcending them with fresh insights drawn from the vast corpus of Indian traditions. The BJP has mastered electoral politics but it’s yet to understand the language of academia.

[Not Green, But Greenwash \(Aryaman Jain - An Environmental Engineer and Aseem Shrivastava - Teacher of Eco Sophy At Ashoka University\)](#)





→ From producing artificial meat to using renewable energy, businesses seem to be driven by concern for our planet. But are they really? Or is this all an attempt to gain a sense of credibility for a project otherwise driven by the mundane, old profit motive? In this age of misinformation, it can be difficult to distinguish between green and greenwash. In Mumbai, despite a sustained and widespread citizens' campaign, the Aarey forest has been chopped down. Despite a number of alternative available sites for the Metro car depot, the agency has remained stubborn on the forest land. The push for the capital-intensive Metro has come at a time when the city's bus service is in tatters. Still, it is argued that the Metro is the only option to improve the city's public transport. Amidst the grief over the felling, there are some who are justifying the move. Their argument is that building a Metro will prevent an increase in emissions. They are comparing car and bus emissions saved by the building of Metro transport with the carbon absorbed by a forest. It is as though the sole purpose of a forest is to serve as a carbon sink for human emissions. Would the forest have been able to defend itself better had its carbon-absorptive capacity been higher? Or if the Metro could attract a smaller number of commuters away from private cars? Here you can see the cognitive failure at the heart of our ecological crisis. **Public transport infrastructure does not absorb carbon dioxide. It cannot provide habitat, recharge groundwater, or safeguard our soil. The ecological crisis is much bigger than just carbon emissions.** Apart from deteriorating air quality and climate, this is a crisis of many things: the loss of biodiversity, freshwater, soil, forests. It is a crisis of the loss of our souls. If we are to really address the ecological crisis, especially climate change, we need a fall in emissions, not a slower-than-projected rate of increase of emissions. It is only within the caged logical framework of slower than otherwise ever-increasing emissions that this argument has even the most limited merits. Still, those justifying the move make a leap of logic and compare the saved emissions against the graph of ever-increasing emissions from mathematical models (which have their own political-economic assumptions). But the only relevant graph to compare against is the rate at which carbon emissions must fall in order to avoid catastrophe. Lastly, we must ask a crucial question: does the Metro really replace cars? Or is the class of urban Indians who take the Metro not a few rungs below the ones who ride daily in cars? That is to say, **isn't it true that most of the car-owning metropolitan elites would not ride the subway with the public even if it was cost-effective? There isn't much evidence that when a Metro arrives in a city or the bus system gets better, car sales drop.** If the Metro really replaces cars, Metro infrastructure should take up the space that cars take up in the city's landscape. But instead, the Metro consumes trees, soil and aquifers, even as we keep getting new flyovers and expressways. Are these going to be our 'solutions' to the ecological crisis? If so, let us prepare for new problems, especially air quality worsening further and the contribution towards climate change becoming yet greater. Unfortunately, it is easily forgotten that it is possible to keep increasing public transport and personal car transport at the same time. Indeed, that is exactly what has been happening. People in India have to travel more and more because jobs are being offered further and further from homes, since capital is being accumulated in a handful of metropolitan centres of wealth — by dispossessing the rest of the country. This process is also known by another name — 'development'. And all political parties support it. Technological solutions work by effectively increasing the supply of goods and services. This increase may alleviate shortages for a brief time. Consumption rises, but does not abate in the long run. The greater supply is absorbed by the market. In an acquisitive society, demand takes no time to catch up with supply. Before the Asian Games in 1982, there were a handful of flyovers in New Delhi. People complained of traffic problems. Scores of new flyovers were constructed, felling thousands of trees in the process. In the end,



traffic congestion grew much worse. Likewise, more fuel-efficient cars have meant that car owners take many more trips, in effect nullifying the saving of fuel from the technical innovation. This is the simple reason why any advocacy of a lasting technological solution to ecological challenges is only destined to set the stage for the next generation of ecological problems. Crucially, new problems also mean that innovative entrepreneurs get fresh opportunities in the marketplace. We forget that in the bargain we approach catastrophe quicker.

### Green Crackers'

- In October 2018, the Supreme Court had ruled that only “green firecrackers” having low emission and permissible sound limits were to be sold and used. It had also fixed a timeslot for fireworks — between 8 pm and 10 pm on Diwali, and between 11.45 pm and 12.30 am on Christmas Eve and New Year. This decision followed a complete ban on the sale of firecrackers in Delhi by the Supreme Court in November 2016 after the national capital witnessed a severe episode of smog, described by the Centre for Science and Environment as the worst in 17 years. This year, on October 5, in a bid to combat air pollution, the Union Ministry of Science and Technology launched environment-friendly firecrackers developed by the Council of Scientific and Industrial Research (CSIR) laboratories. CSIR-NEERI (CSIR-National Environmental Engineering Research Institute) states that it has been working since January 2018 to develop new and improved formulations for reducing emissions from fireworks. “CSIR-NEERI developed new formulations for reduced emission light and sound emitting crackers (SWAS, SAFAL, STAR) with 30% reduction in particulate matter using Potassium Nitrate (KNO<sub>3</sub>) as oxidant”. In other words, the “green firecrackers” are supposed to have a changed composition of chemicals, and emit 30% less particulate matter when burned as compared to traditional firecrackers. **Particulate matter is a mixture of solid particles and liquid droplets suspended in the air. These include PM<sub>10</sub>, which are particles with a diameter equal to or less than 10 micrometres, and PM<sub>2.5</sub> that are of diameter equal to or less than 2.5 micrometres.** Numerous studies have linked particulate pollution exposure to many health problems, including **premature death in people with heart or lung diseases.** They can also settle on ground or water and, depending upon their chemical composition, may have an adverse impact on them. They could, and they have been modified. Apart from ‘green crackers’, there are other formulations based on new oxidisers, fuel and additives — singly or in combination — which have managed to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions by more than 50%. These are being tested at present, and are showing encouraging results. Other than these new formulations, CSIR-NEERI also teamed up with fireworks manufacturers and “examined and assessed the possibilities of improvements in conventional formulations based on barium nitrate to meet the stipulated norms of green crackers”. This effort too has produced some results. For instance, there is a light-emitting cracker that has partially substituted barium nitrate with potassium nitrate and strontium nitrate. Dr Sadhana Rayalu, chief scientist and head of NEERI’s Environment Materials Division (EMD), said the firecrackers use a proprietary additive that acts as a dust suppressant. She added, “The usage of chemicals is less in green crackers. The total quantity is being maintained by using CSIR proprietary additive... which on fragmentation releases dust suppressants.” Some of the ‘green crackers’ have also replaced barium nitrate as an oxidiser for combustion. **Barium nitrate hurts health when inhaled, causing irritation in the nose, throat and lungs. High exposure to barium nitrate can also cause nausea and irregular heartbeat.** Among the new firecrackers developed are environment-friendly versions of traditional anar, chakri, sparklers, and other light-sound



emitting firecrackers. According to NEERI, these exploit the exothermic heat of materials such as zeolite, clay and silica gel for burning, and also match the performance of commercial firecrackers in terms of sound. Union Minister Dr Harsh Vardhan has said a Quick Response (QR) code will be put on the firecrackers to differentiate them from conventional ones. He has also said the cost of these firecrackers would be the same as conventional ones, and that they are already available in the market. **Under the current framework, the composition of firecrackers is disclosed to manufacturers after signing of a Memorandum of Understanding and a non-disclosure agreement. Following this, manufacturers have to apply to the Petroleum and Explosives Safety Organisation (PESO) for authorisation.** The samples thus produced are submitted to CSIR for emission testing. Nearly 165 fireworks manufacturers had been roped in for production, and around 65 more were in the process of coming on board as of October 5.

### Monsoon Out, Monsoon In

- This Wednesday witnessed a rare meteorological coincidence. The southwest, or summer, monsoon, finally withdrew from the country, having overstayed and delayed its retreat by a record time. **The same day, the northeast, or winter, monsoon made its onset, on time. The two events rarely happen simultaneously,** though the three month-winter monsoon season is supposed to begin almost immediately after the end of the June-September summer monsoon season. In common vocabulary, a reference to the monsoon usually means the southwest summer monsoon. That is because it is the main monsoon season that brings widespread rain all across the country. For many parts of India, this is the only time they receive rainfall. **These four months bring about 75 per cent of India's annual rainfall.** However, for some regions of south India, it is the winter monsoon that is much more important. Though much less heard of, the northeast monsoon is as permanent a feature of the Indian subcontinent's climate system as is the summer monsoon. The northeast monsoon does not have anything to do with the Northeast region of the country, though a part of the system does originate from the area above it. The northeast monsoon derives its name from the direction in which it travels – from the northeast to the southwest. **The months of October, November and December are supposed to comprise the northeast monsoon season, though the normal date for the onset of this monsoon is only around October 20. The southern peninsular region receives rains in the first half of October as well, but that is attributable to the retreating summer monsoon. The summer monsoon season ends on September 30 but the withdrawal does not happen overnight. From the beginning of the season, as it starts its northward journey over the Indian landmass, the monsoon takes a month and a half to cover the entire country. The southward withdrawal takes place over a period of three to four weeks. It usually starts around the second week of September and continues till about the second week of October, bringing rain as it retreats.** This year, the withdrawal was completed in just eight days, beginning on October 9. The northeast monsoon season brings rainfall to just five of the 36 meteorological divisions in the country — Tamil Nadu (which includes Puducherry), Kerala, Coastal Andhra Pradesh, Rayalaseema and South Interior Karnataka. As such, this season contributes only 11 per cent to India's annual rainfall of 1,187 mm, compared to about 75 per cent in the summer monsoon season (the remaining rain comes in other non-monsoon months). **Many other parts of the country, like the Gangetic plains and northern states, also receive some rain in November and December but this is not due to the northeast monsoon. It is caused mainly by the Western Disturbances, an eastward-moving rain-bearing wind system that originates beyond Afghanistan and Iran, picking up moisture from as far as the Mediterranean Sea, even the**



Atlantic Ocean. The northeast monsoon is particularly important for Tamil Nadu, which receives almost half its annual rainfall (438 mm of the annual 914.4 mm) during this season. The southwest monsoon contributes just 35 per cent to Tamil Nadu's annual rainfall (the rest comes in other non-monsoon months). Within the state, some districts get up to 60 per cent of their annual rainfall during this time. Similarly, Rayalaseema region and Coastal Andhra Pradesh both about 30 per cent, and South Interior Karnataka receives about 20 per cent of its annual rainfall during the northeast monsoon season. Like the southwest monsoon, the northeast monsoon is also impacted by the warming and cooling of sea surface waters in the central Pacific Ocean. But the impact is the opposite. **The northeast monsoon is known to receive a boost from El Niño, when the sea surface temperatures in the equatorial Pacific Ocean, off the western coast of South America, are warmer than usual.** And, when the opposite phenomena La Niña happens, rainfall during the northeast monsoon is known to get depressed. **This year the El Niño Southern Oscillation, or ENSO, is in neutral state and is likely to remain like that for the rest of the year.** Unlike for the southwest monsoon, the India Meteorological Department does not come out with a long-range forecast for the winter monsoon. But after unusually high rainfall during the southwest monsoon, the northeast monsoon is also expected to deliver good rainfall. According to an analysis by Sridhar Balasubramanian, an associate professor of mechanical engineering and an adjunct faculty member at IDP Climate Studies at IIT Bombay, this year's northeast monsoon is likely to be normal, and likely to result in rainfall that is 100-102 per cent of the long period average. November is likely to be the wettest month of the season.

## Business & Economics

### Are RCEP Trade Negotiations on Sticky Ground?

- Negotiations on the final agreement under the Regional Comprehensive Economic Partnership (RCEP) are becoming increasingly urgent as the deadline approaches. The RCEP countries are expected to finalise, in November 2019, the agreement and the countries that would be members. The final ministerial meeting prior to that concluded recently, but with no final agreement in place. The Leaders Summit, in which Prime Minister Narendra Modi is taking part, will to be held on November 4 in Bangkok, Thailand. But there are several sticking points that remain preventing a harmonious agreement from taking shape. **Once finalised, the RCEP trade grouping will be one of the world's biggest free trade pacts as it includes the 10 Association of South East Asian Nations (ASEAN), as well as India, China, Australia, New Zealand, Japan and South Korea. These 16 nations account for a little less than half of the world's population and about a third of the world's GDP. Trade between the 16 countries also makes up a little more than a quarter of global trade.** Talks on finalising RCEP began all the way back in 2012, but have not yet been concluded. The uncertainty in global trade is slowing down talks further. Once the deal is concluded, it will likely bring stability to trade relations in an area where such ties have historically been unpredictable. **The deal — in essence a free trade agreement between the signatories — would open up markets of each of the partner countries to the others.** On the face of it, this is a favourable outcome for all involved, but there are some niggling issues, especially between India and China, that are throwing a spanner in the works. In addition, there is a fear that, at a time when the U.S. and China are embroiled in





a trade war, a trade grouping with China at the helm would mean that the other countries, including India, would be forced to take its side against the U.S. This is a complicated issue since India and the Prime Minister have been going to great lengths to further bolster trade with the U.S. In fact, the two countries are currently in talks on a bilateral trade deal, which could be put at risk if India is seen to be overtly siding with China. The main problem Indian industry has with the RCEP trade deal is that it would give China near-unfettered access to India markets. Cheap imports from China have already been seen to be impacting India's domestic industry, with the Indian government having taken a number of steps to curb such imports. These include imposing a safeguard duty on solar panel imports, and imposing anti-dumping measures on items such as steel. According to reports from the various RCEP negotiations that have taken place, India would, under the agreement, reduce duties on 80% of items imported from China. While this is a smaller percentage of items as compared to what India is prepared to do for other countries, the figure has nevertheless spooked Indian industry, especially the agriculture and dairy sectors. Under the agreement, India would have to cut duties on 86% of imports from Australia and New Zealand, and 90% for products from ASEAN, Japan and South Korea. That said, India's problems with RCEP are not restricted to China. There are several other aspects to the RCEP agreement which include investments and e-commerce that are of major concern as well. It has already been reported that India has agreed to the investment chapter of the RCEP agreement, which would mean that the government can no longer mandate that a company investing in India must also transfer technology and know-how to its Indian partners. The investment chapter also says that a signatory government cannot set a cap on the amount of royalties an Indian company can pay to its foreign parent or partner. These aspects have also raised concerns since technology sharing was a major way in which Indian companies were being able to compete globally. Further, there is also the fear that companies might be forced to transfer huge royalty sums to foreign partners, instead of paying dividends to Indian shareholders. The e-commerce chapter, which is still under negotiation, is quite tricky because it contains provisions that, if agreed to, would mean that India would not be able to pursue its data localisation plans. The wording of the agreement would be key. India's Commerce Minister Piyush Goyal has held several rounds of meetings with industry representatives and has heard their concerns in detail. These concerns have certainly played a part in India's uncertain stance when it comes to joining the grouping. However, time is running out. China has already said that the grouping should go ahead without the nay-sayers, with a clause allowing them to join later. This suggestion was echoed by Malaysia as well, but was ultimately rejected. It does not seem a good idea for India to be out of the agreement from its inception, only to join it later. This would mean it would have missed out on the chance to frame the discussions and the precedents from the beginning and would have to accept them later. India should make clear its stance and stick to it. If it is joining, it should say so and reassure other countries, which would possibly reduce friction during negotiations. If India is not going to join the group, experts say it should stick to the decision and not change its mind later.

### [A Tax Policy That Could Work \(Jayati Ghosh - Professor of Economics at Jawaharlal Nehru University, New Delhi\)](#)

- ➔ The Indian government should now be desperate to raise more tax revenues. It missed its tax targets massively in the last fiscal year, largely because of poor goods and services tax (GST) collections. Its declared budgetary target for the current year requires tax receipts to increase



by around 25%, when the first quarter increase was only 6% over the previous year. In the misplaced belief that what is required to address the current slowdown is more tax relief to corporates, it has offered tax rate reductions to 25% of profits to companies that do not avail of other concessions, and further rebates to new companies. So very significant tax shortfalls are likely even in the current year, unless the government takes proactive measures. But such measures need not — and should not — take the form of the tax terrorism that this government has been prone to, or increasing GST rates, which would be regressive and counterproductive in the slowdown. Fortunately, there are other measures that could provide significantly more tax revenues to the government. **One obvious low-hanging fruit is a strategy to ensure that multinational companies (MNCs) actually pay their fair share of taxes.** It is well known that MNCs manage to avoid taxation in most countries, by shifting their declared costs and revenues through transfer pricing across subsidiaries, practices described as “**base erosion and profit shifting**” (BEPS). Matters have got even worse with **digital companies, some of the largest of which make billions of dollars in profits across the globe, but pay barely any taxes anywhere.** The International Monetary Fund has estimated that countries lose \$500 billion a year because of this. Also, it creates an uneven playing field, since **domestic companies have to pay taxes that MNCs can avoid.** The Organisation for Economic Co-operation and Development (OECD) has now recognised this through its BEPS Initiative, and has even attempted a belated attempt to include developing countries through what it calls its inclusive process. So far, this process has delivered a few benefits, but these are limited because it has continued to operate on the basis of the arm’s-length principle of treating the subsidiaries as separate entities. But this can change if there is political will. The idea is this: since an MNC actually functions as one entity, it should be treated that way for tax purposes. **So, the total global profits of a multinational should be calculated, and then apportioned across countries according to some formula based on sales, employment and users (for digital companies).** This is something that is actually already used in the United States where state governments have the power to set direct and indirect tax rates. Obviously, a minimum corporate tax should be internationally agreed upon for this to prevent companies shifting to low tax jurisdictions (ICRICT has suggested 25%). Then, each country can simply impose taxes on the MNCs operating in their jurisdictions, in terms of their own shares based on the formula. It could be argued that this would only work if all countries agree, and certainly that is the ideal to be aimed at. But the beauty of this proposal is that just some large countries can move the debate and make it less advantageous for global companies to shift their profits around. If the big markets such as the United States and the European Union together decided to tax according to this proposed principle, there would be little incentive for many MNCs to try and shift reported profits to other places. Indeed, the Indian government has already proposed in a white paper that it could take such a unilateral initiative for digital companies. **The OECD BEPS Initiative will be meeting on October 19 to set out its own proposal, and for the first time, it is willing to consider the possibility of unitary taxation.** But there are some stings in the tail that may well render the proposed measures practically impotent. These concerns are set out clearly in a new report from ICRICT. The biggest problem is the arbitrary separation between what OECD calls “routine” and “residual” profits, and the proposal that only residual profits will be subject to unitary taxation. This has no economic justification, since profits are anyway net of various costs and interest. The proposal does not clearly specify the criteria for determining routine profits, instead suggesting that the “arm’s-length principle” will be used to decide this, which defeats the entire purpose. As it happens, there is no system of corporate taxation anywhere in the world that makes such a distinction — so why should an international



system rely on this? Another concern is about the formula to be used to distribute taxable profits. The OECD suggests only sales revenues as the criterion, but developing countries would lose out from this because they are often the producers of commodities that are consumed in the advanced economies. Instead, the G24 group of (some of the most influential) developing countries has proposed that a combination of sales/users and employment should be used, which makes much more sense. It is important for the Indian government to look at this issue seriously and take a clear position at the OECD meeting, because the outcome will be very important for its own ability to raise tax revenues. A government that is currently ineffective in battling both economic slowdown and declining tax revenues cannot afford to neglect this crucial opportunity. But more public pressure may be required to make the government respond.

### Another Grim Reminder

- The IMF followed the World Bank in reducing its forecast for India's economic growth in the current financial year. While the IMF cut its July projection for real GDP growth by a substantial 0.9 percentage point to 6.1%, the bank slashed the estimate by as much as 1.5 percentage points to 6%. These magnitudes of reduction underscore the severity of the ongoing slowdown and affirm the welter of grim data and predictions from other forecasters, both global and domestic. Interestingly, by the bank's own admission, its forecast is more optimistic than the average estimate of 32 Indian respondents who were polled as part of its South Asian Economic Policy Network Survey: these economists expect growth to be 5.7% this fiscal. The only significant issue of debate is over the cause of the malaise, with the World Bank largely echoing what the Centre's economic mandarins have been saying — that this is a cyclical slowdown, exacerbated by global influences. A view, however, that neither the Indian experts surveyed, nor Moody's Investors Service, broadly concur with. While Moody's pared its projection to 5.8%, ascribing the downturn partly to "long-lasting factors", only 10% of the respondents in the network survey considered it a "purely cyclical" development and as many as 25% saw structural factors as being solely responsible.

### World Bank Cuts India's Growth Projection To 6%

- After a broad-based deceleration in the initial quarters of this fiscal year, India's growth rate is projected to fall to 6%, the World Bank said. However, the bank in its latest edition of the South Asia Economic Focus said the country was expected to gradually recover to 6.9% in 2021 and 7.2% in 2022 as it assumed that the monetary stance would remain accommodative, given benign price dynamics. The report, which has been released ahead of the annual meeting of the World Bank with the International Monetary Fund, noted India's economic growth decelerated for the second consecutive year. In 2018-19, it stood at 6.8%, down from 7.2% in the 2017-18 financial year. While industrial output growth increased to 6.9% due to a pick-up in manufacturing and construction activities, the growth in agriculture and the services sector moderated to 2.9% and 7.5%, respectively. In the first quarter of 2019-20, the economy experienced a significant and broad-based growth deceleration with a sharp decline in private consumption on the demand side and the weakening of growth in both industry and services on the supply side, the report said. Reflecting on the below-trend economic momentum and persistently low food prices, the headline inflation averaged 3.4% in 2018-19 and remained well below the RBI's mid-range target of 4% in the first half of 2019-2020. This allowed the RBI to ease monetary policy via a cumulative 135 basis point cut in the repo rate since January 2019



and shift the policy stance from neutral to accommodative, it said. The World Bank report also noted that the current account deficit had widened to 2.1% of the GDP in 2018-19 from 1.8% a year before, mostly reflecting a deteriorating trade balance. On the financing side, significant capital outflows in the first half of the current year were followed by a sharp reversal from October 2018 onwards and a build-up of international reserves to \$411.9 billion at the end of the fiscal year. Likewise, while the rupee initially lost ground against the Dollar (12.1% depreciation between March and October 2018), it appreciated by about seven per cent up to March 2019, the report said. "The general government deficit is estimated to have widened by 0.2 percentage points to 5.9% of the GDP in 2018-19. This is despite the central government improving its balance by 0.2 percentage points over the previous year. The general government debt remained stable and sustainable - being largely domestic and long term-at around 67% of GDP, the report said. According to the World Bank, poverty has continued to decline, albeit possibly at a slower pace than earlier. Between 2011-12 and 2015-16, the poverty rate declined from 21.6% to 13.4% (\$1.90 PPP/day). The report, however, said disruptions brought about by the introduction of the GST and demonetisation, combined with the stress in the rural economy and a high youth unemployment rate in urban areas may have heightened the risks for the poorest households. The significant slowdown in the first quarter of the fiscal year and high frequency indicators, thereafter, suggested that the output growth would not exceed 6% for the full fiscal year, the bank said.

### First Private Train Violates Railway Tariff Law

- The country's first private train has contravened the Railways Act, 1989, since the Central government is the competent authority to decide on tariff and not the IRCTC, say top railway officials. The much-publicised train service flagged off on the Lucknow-Delhi-Lucknow corridor on October 4 charges a higher fare than the existing Shatabdi Express and other trains on the same route. The issue is being closely watched in the context of the move to run 150 more trains in private mode. The Indian Railways had entrusted IRCTC, its commercial tourism and catering arm, with the task of operating two premium trains using the fully air-conditioned rakes of the semi-high speed Tejas Express. The second private train will soon be run on the Mumbai-Ahmedabad-Mumbai sector. While the first corporate-run train has received good feedback from passengers, who compared its amenities and on-board service favourably with global standards, senior railway officials say the tariff fixed is apparently in violation of the Railways Act. The fares are higher and there is hardly any change in the running time. The Delhi-Lucknow Private Train No 82502, IRCTC Tejas Express takes 6 hours and 30 minutes to cover the 511 km distance with stops at Ghaziabad (two minutes) and Kanpur Central (five minutes). The train charges ₹2,450 for AC Executive Class and ₹1,565 for the AC Chair Car including GST and catering. On the other hand, Train No 12004 Delhi-Lucknow Shatabdi Express takes 6 hours 35 minutes to cover the same distance but with five stops - Ghaziabad, Aligarh, Tundla, Etawah (two minutes each) and Kanpur Central (five minutes). This train charges ₹1855 for AC Executive Class and Rs 1,165 for the AC Chair Car including GST, Super Fast and reservation charges. The tariff for AC Chair Car for the Suhaildev Super Fast Express and Garib Rath Express on the same sector is ₹645 and ₹480 respectively. According to a senior railway official, the Railways Act had clearly laid down that rates for carriage of passenger and goods would be decided by the Central Government. Also, tickets for private train are available only online which again is contrary to the rule book. "There can't be a 100% sale online. The Act says that there has to be a counter at the railway station with working hours displayed."





[A Cost-Effective Way to Power Generation \(Thillai Rajan A. - Professor, Department Of Management Studies, IIT Madras. Akash Deep - Senior Lecturer in Public Policy, Harvard Kennedy School\)](#)

→ India has been aggressively expanding its power generation capacity. Today's installed capacity of 358 GW is about four times of what it was in 1997-98, which shows a doubling of capacity in each of the past two decades — or about 75 MW per day. By India's historical standards, these are astonishing numbers indeed. In recent years, the major growth drivers have been renewable energy sources such as solar and wind power, and investment from the private sector. The private sector accounts for almost half the installed generation capacity. For the last three years, growth in generation from renewables has been close to 25%. **India aims to have a renewables capacity of 175 GW by 2022 and 500 GW by 2030.** Solar and wind power plants would account for much of the targeted capacity from renewables. How can this be achieved? **Today, thermal generation capacity accounts for about two-thirds the installed generation capacity in the country.** This shows that though there is increasing awareness about the environmental impact of fossil fuels, the reliance on thermal plants is unlikely to end any time soon. Thermal plant capacities are large and therefore targeted capacity additions can be achieved by constructing fewer such plants. **On average, it would take 18 solar or wind projects to generate the same quantity of power as one thermal plant. For the same reason, switching from fossil fuel to renewables will remain challenging as the administrative overheads that would have to be incurred in setting up the multiple projects could significantly add to the cost. Not surprisingly, infrastructure projects have an inverse relationship between size and unit cost, indicating economies of scale.** As the capacity of power plants increases, the average cost of power per MW reduces. **The average cost per MW for a thermal plant is about 25% lower than that of a solar plant.** In order to surmount the cost advantages that large thermal plants enjoy today, we must focus on developing larger solar and wind power plants that can also exploit similar economies of scale. The next point is that of ownership. Over the last two decades, 63% of the total planned generation capacity has come from the private sector. Private investment has been even more pronounced in renewables, accounting for almost 90% of investment in wind and solar projects. So, has private investment helped? Private sector plants have an average cost per MW that is 12-34% lower for all categories except solar. Lower capacity cost has a direct impact on electricity tariffs. **Electricity tariffs broadly consist of two components: fixed capacity costs and operation and maintenance costs, which include fuel expenses. In general, capacity costs account for more than 90% of the levelized cost of electricity, irrespective of the fuel type.** If we are able to create additional capacity at lower cost, then it will play a big role in keeping electricity tariffs low. Private investment in the power sector has not only helped in augmenting capacity but has also helped in lowering cost. Even as total capacity in generation has been growing, the cost of installing additional capacity has fallen. The reasons for the decline could be as follows: First, advances in technology have resulted in the construction of larger power plants. Compared to the 15-year period before 2013, power plants installed in the past six years have on average been significantly bigger, even twice as large in the case of hydel power. The economies of scale in power generation appear to have been dramatic. The second point could be the increasing share of private sector investment. The share of private sector in capacity creation has been 70% in the last decade as compared to 46% in the decade before that. And, as indicated previously, private sector capacity has lower costs. Falling marginal costs suggest that retiring some existing high-cost capacity plants with newer plants could be explored. With



economic growth, the demand for power in India is only going to increase further. To put things in perspective, China added generation capacity that was equal to a third of India's total installed capacity in 2018. As India continues to ramp up capacity, it is imperative to create generation assets with the lowest unit cost by optimising plant capacities and encouraging private sector investment. Declining marginal cost for capacity provides opportunities for replacing existing capacity with newer capacity that are more efficient. However, the challenge of replacing fossil fuel-fired plants with renewables prevails.

### Jio Alleges 'Illegal Extraction'

- Reliance Jio has alleged that rival telecom operators – Bharti Airtel, Vodafone Idea and BSNL – are passing off calls to fixed line telephones as calls to mobile numbers to “illegally extract” a mobile termination charge of 6 paise per minute, leading to undue enrichment of these operators at the cost of Reliance Jio. In a letter to the Telecom Authority of India (TRAI) dated October 14, Jio has said the three operators are “fraudulently masquerading wireline numbers as mobile numbers...for undue enrichment by receiving terminating charge as mobile number...” The company explained that its rivals had implemented a process wherein they offer mobile numbers to enterprises for customer care or helpline numbers such as 8888888888 (for Just Dial), 9313931393 (for Oyo Rooms), 9115691156 (for Videocon D2H) and 8888823456 (for HP Gas). However, as per Reliance Jio, in these cases, mobile number is used just as a virtual number for routing calls to call centre set-ups which operate on a wireline setup with hunting facilities – a feature that allows multiple telephone lines to act as a single group. Besides, seeking a levy of “severest penalties” on these operator’s violations of various regulations, Jio has sought that these Telco’s be directed to refund the applicable mobile termination charge amount to Reliance Jio as well as other operators with compound interest. This “fraudulent operation” by other Telco’s has not only led to Reliance Jio paying a termination charge of six paise per minute but also cost the firm revenues of up to 52 paise per minute for these calls, the operator said in the letter.

### Life & Science

### Framing Laws for Outer Space (Shreyashi - Former Legal Intern, Ministry of Law and Justice, And Sidharth Kapoor - Former Researcher, Observer Research Foundation)

- Recently it was reported that the “world’s first space crime” may have been committed by a NASA astronaut, Anne McClain. She is suspected of signing into the personal bank account of her estranged spouse from a computer aboard the International Space Station (ISS). The law which is applicable to the case is the International Space Station Inter-Governmental Agreement (IGA). The drafters of this agreement had made provisions to meet such a contingency. Article 22 of the Agreement concerns itself with criminal jurisdiction and states that countries which are mentioned in the agreement may exercise criminal jurisdiction over personnel in flights who are their respective nationals. Hence, the laws of the U.S. will be applicable in this situation concerning the first space crime. On this occasion, the scientific and legal communities appear to have successfully evaded jurisdictional and procedural ambiguities. Nevertheless, a few questions remain. What will happen when legal issues that are beyond the foresight of existing agreements arise? What will happen when crimes take



place on commercial space vehicles sent by private corporations, third-party nations, and jurisdictions not already covered? NASA executives recently announced that parts of the ISS will be opened up for more commercial opportunities. Such steps could provide a fillip to filming movies or commercials in space, space tourism, sending astronauts of space-ambitious countries into space, and much more. Although there are legal documents that govern space, such as the Outer Space Treaty, the Moon Agreement, the Registration Convention, the Rescue Agreement, and the Liability Convention, none of them comprehends a detailed framework to cater to criminal disputes that might arise on commercial space vessels, which will have personnel and space tourists from different jurisdictions. Space ambitions could lead to an increasing number of autonomous space stations established by countries such as India and China. Consider India's space exploration ambition – ISRO is expected to become capable of sending Indians to the ISS owing to missions such as Mission Gaganyaan. Are humans from different cultural, political and economic settings likely to stop committing crimes in space? In such a scenario, far-sighted laws are essential to cater to every situation of potential criminality that might occur. Consequently, it is not inconceivable that India then might have to become party to the IGA or contemplate a perceptive treaty with ISS nations to meet legal contingencies to dock its space vehicle there. If so, India will have to include provisions relating to offences in space in the Indian Penal Code, as that could be material in situations involving outer space, Indian citizens, and space equipment. India might also need to formulate new international agreements on space, or sign MOUs to that effect. The same national pride that emerged out of India's ambitious plan to reach Mars on its first attempt must be blended with the formulation of visionary laws, clear of legal ambiguities, which cater directly to the needs of rapidly evolving space science. It is imperative, therefore, that India's legal prowess is therefore applied urgently and rigorously to the situational complexities of space exploration. Only by keeping pace with the explosive growth in space technology can India hope to remain at the forefront of scientific development in this exciting field.

### Cutting Risk of Polio

- The world polio day on October 24 marked an important milestone in the war against polio when the Global Commission for the Certification of Poliomyelitis Eradication officially declared that wild poliovirus type 3 has been eradicated. The last case of wild poliovirus type 3 was seen in northern Nigeria in 2012. This is the second wild poliovirus to be declared eliminated — the first was in 2015 when type 2 wild poliovirus was declared as eliminated. With two of the three wild polioviruses eliminated, only type 1 wild poliovirus is still in circulation and is restricted to just two countries — Afghanistan and Pakistan. As on October 23, there were 18 cases of polio caused by wild virus type 1 in Afghanistan and 76 polio cases in Pakistan this year. While the number of cases reported this year from Afghanistan is quite close to the 21 reported last year, there has been over six-fold increase in the number of cases in Pakistan. Though India has excellent polio immunisation coverage and measures have been put in place to prevent the spread from polio-endemic countries, there is no room for complacency. What does the official declaration of wild type 3 poliovirus elimination mean in the war against polio? Put simply, it opens up the possibility of switching from the currently used bivalent oral polio vaccine containing type 1 and type 3 to a monovalent vaccine containing only type 1. The globally synchronised switch in April 2016 from a vaccine containing all the three types (trivalent) to a bivalent vaccine was done to reduce the number of vaccine-derived poliovirus (VDVP) cases. Until 2015, the type 2 strain in the trivalent oral vaccine accounted for over 90% of VDVP cases globally. While the type 3 poliovirus in the vaccine is the least likely to cause



vaccine-derived polio, it has the greatest propensity to cause vaccine-associated paralytic polio (VAPP). Though the risk of VAPP is small, it is caused when the live, weakened virus used in the vaccine turns virulent in the intestine of the vaccinated child or spreads to close contacts who have not been immunised. VAPP can be greatly reduced if there is a switch from the bivalent to a monovalent vaccine containing only type 1. Alternatively, the risk of VAPP can be reduced 80-90% if every child receives the bivalent vaccine and one dose of inactivated polio vaccine injection. Though India does not count VAPP cases, a 2002 paper and a communication indicated that India had 181, 129 and 109 cases in 1999, 2000 and 2001, respectively. A recent paper suggests that post 2016, India might have 75 VAPP cases annually due to global IPV vaccine shortage and "delay in IPV implementation in India's national immunisation programme".

### 1-In-3 Young Children Undernourished or Overweight

- Despite a nearly 40% drop from 1990 to 2015 of stunting in poor countries, 149 million children four or younger are today still too short for their age, a clinical condition that impairs both brain and body development. Another 50 million are afflicted by wasting, a chronic and debilitating thinness also born of poverty. At the same time, half of youngsters across the globe under five are not getting essential vitamins and minerals, a long-standing problem UNICEF has dubbed "hidden hunger." Over the last three decades, however, another form of child malnutrition has surged across the developing world: excess weight. "This triple burden — undernutrition, a lack of crucial micronutrients, obesity — is increasingly found in the same country, sometimes in the same neighbourhood, and often in the same household," Victor Aguayo, head of UNICEF's nutrition programme, told AFP. "A mother who is overweight or obese can have children who are stunted or wasted." Across all age groups, more than 800 million people in the world are constantly hungry and another two billion are eating too much of the wrong foods, driving epidemics of obesity, heart disease and diabetes. Among children under five, diet during first 1,000 days after conception is the foundation for physical health and mental development. And yet, only two-in-five infants under six months are exclusively breastfed, as recommended. Sales of milk-based formula have risen worldwide by 40%, and in upper middle-income countries such as Brazil, China and Turkey by nearly three-quarters. Missing vitamins and minerals, meanwhile, can lead to compromised immune systems, poor sight and hearing defects. A lack of iron can cause anaemia and reduced IQ. "It's 'hidden' because you don't notice the impact until it is too late," Brian Keeley, editor-in-chief of report, told AFP. "You don't notice that the child is running a little slower than everyone else, struggling a bit in school." The rise of obesity, however, is plain to see. The problem was virtually non-existent in poor countries 30 years ago, but today at least 10% of under five-year olds are overweight or obese in three-quarters of low-income nations. Progress in fighting undernourishment will also be hampered by climate change, the report warned. Research by scientists at Harvard University, meanwhile, have shown that the increased concentration of CO<sub>2</sub> in the air is sapping staple food crops of those essential nutrients and vitamins, including zinc, iron and vitamin B. Making sure every child has access to a healthy diet must become a "political priority" if widespread malnutrition is to be conquered, especially in developing countries, the report said.





### Scientists Create Customised Drug for Girl with Brain Disease

- A new drug created to treat just one patient, has pushed the bounds of personalised medicine. The drug, described in the *New England Journal of Medicine*, is believed to be the first “custom” treatment for a genetic disease. It is called Milasen, named after the only patient who will ever take it: Mila Makovec, who lives with her mother, Julia Vitarello, in Longmont, Colorado, in the U.S. Mila, 8, has a rapidly progressing neurological disorder that is fatal. Her symptoms started at age 3. Within a few years, she had gone from an agile, talkative child to one who was blind and unable to stand or hold up her head. She needed a feeding tube and experienced up to 30 seizures a day, each lasting one or two minutes. Ms. Vitarello learned in December 2016 that Mila had **Batten’s disease**. But the girl’s case was puzzling, doctors said. Batten’s disease is recessive- a patient must inherit two mutated versions of a gene, MFSD8, to develop the disease. Mila had just one mutated gene, and the other copy seemed normal. They should have been sufficient to prevent the disease. In March 2017, Timothy Yu and his colleagues at Boston Children’s Hospital discovered that the problem with the intact gene lay in an extraneous bit of DNA that had scrambled the manufacturing of an important protein. That gave Dr. Yu an idea: Why not make a custom piece of RNA to block the effects of the extraneous DNA? Developing such a drug would be expensive, but there were no other options. Ms. Vitarello already had set up Mila’s Miracle Foundation and was appealing for donations. She eventually raised \$3 million for a variety of research efforts. Dr. Yu’s team oversaw development of the drug, tested it in rodents, and consulted with the Food and Drug Administration. In January 2018, the agency granted permission to give the drug to Mila. She got her first dose on January 31, 2018. The drug was delivered through a spinal tap, so it could reach her brain. Within a month, Ms. Vitarello noticed a difference. Mila was having fewer seizures, and they were not lasting as long. With continued treatments, the number of seizures has diminished so much that the girl has between zero and six a day, and they last less than a minute. Still, Mila has lost the last few words of her vocabulary and remains severely disabled. “She is starting not to respond to things that made her laugh or smile,” Ms. Vitarello said. **Milasen is believed to be the first drug developed for a single patient (CAR-T cancer therapies, while individualised, are not drugs).** But the path forward is not clear, Dr. Yu and his colleagues said. Milasen will not cure Mila, Ms. Vitarello acknowledged. “As a mom, I still feel hopeful,” Ms. Vitarello added. “But I have one foot in hope and one foot in reality.”

### Can Typhoid Be an Illness of The Past?

- The world is rid of smallpox. Globe-wide vaccination against it made this possible. We are close to getting rid of polio as well, and hoping that it too may no longer afflict us. Now, with a new vaccine against typhoid, **made by an Indian vaccine manufacturer, Bharat Biotech of Hyderabad**, that has been approved by WHO, typhoid, too, may soon be a thing of the past. The journal *Nature Medicine* called this one of the “Treatments that made headlines in 2018.” The journal writes: And it is here that we read with pride that “The WHO has approved a vaccine against typhoid fever, called **Typbar TCV**, short for **typhoid conjugate vaccine**. It is the only vaccine deemed safe enough for use in infants starting at 6 months of age. **This vaccine is the first conjugate vaccine — a vaccine in which a weak antigen (of the typhoid germ) is attached to a strong antigen (from the tetanus germ) to elicit antibody responses — against a bacterial disease (typhoid) that “affects up to 20 million people annually”** This vaccine was tried in a unique human challenge model by an Oxford University group, and found to be superior to other competitive vaccines (made by e.g., Sanofi Pasteur, France). Based on this,



the vaccine has been cleared for introduction in the National Immunization Programmes in Africa and Asia. **Many people across even India do not realise that over one-third of the world's vaccines are made in our country today by just a handful of biotech firms and distributed across the Indian continent, Africa and Asia.** All this has happened during the last 30 years or so. Until then, we imported vaccines made abroad and manufactured them here using the same process, on license. It is only when biotech firms forayed into the discovery of local strains of bacteria and viruses that indigenous creation of vaccines using modern biological methods began happening. **Until recently, vaccine against typhoid was made by injecting live, but grossly weakened typhoid germs into the human body, provoking the body to mount immunochemicals called antibodies.** Later, scientists found that it was not good to use live germs, since there are unwanted side-effects. Hence, they started using an important molecular component (the polymer that coats or covers the surface of the germ) which can elicit the same antibody from the injected 'host'.

### Scientists Find Clues to How Brain Controls Pain

- Pain perception is essential for survival, but how much something hurts can sometimes be amplified or suppressed: for example, soldiers who sustain an injury in battle often recall not feeling anything at the time. A new study published in Cell Reports honed in on the brain circuitry responsible for upgrading or downgrading these pain signals, likening the mechanism to how a home thermostat controls room temperature. Yarimar Carrasquillo, the paper's senior author and a scientist for the National Centre for Complementary and Integrative Health (NCCIH), said the region responsible was the **central amygdala**, which according to her work appeared to play a dual role. Studying mice, Ms. Carrasquillo and her colleagues found that the activity in neurons that express protein **kinase C-delta** amplified pain, while neurons that express **somatostatin** inhibited the chain of activity in the nerves required to communicate pain. The central amygdala isn't completely responsible for pain itself: if it were removed entirely, then "the 'ouch' of things, or the protective pain, would remain intact," said Ms. Carrasquillo. "It seems to be sitting there waiting for something to happen," for example responding to stress or anxiety that amplifies pain, or being forced to focus on a task that diverts your attention and reduces pain. Experiencing pain can be a vital warning to seek help, for example in a person experiencing appendicitis or a heart attack. People who are born with insensitivity to pain, meanwhile, often do not realise the severity of injuries and are at greater risk of early death. But not all pain is useful. According to a 2012 survey, about 11% of U.S. adults have pain every day and more than 17% of them have severe levels of pain. Often this leads to dependence on potent painkillers like opioids, or attempting to self-medicate through counterfeit or illicit drugs that are increasingly laced with deadly fentanyl. By better understanding the brain mechanisms responsible for pain modulation, researchers hope to eventually find better cures: potentially ones that target only those forms of pain that are "bad" and not useful.

### Trends Project Extreme El Niño More Often

- The El Niño is a widely discussed phenomenon, particularly in India where it can impact the southwest monsoon. In fact, El Niño events cause serious shifts in weather patterns across the globe. While El Niño is a naturally occurring phenomenon, a key question that scientists frequently ask is: In a continuously warming planet, how will climate change affect the creation of strong El Niño events? In a new study, researchers have found that because of climate



change, extreme El Niño events are likely to become more frequent. The study was done by a team of international climate researchers led by Bin Wang of the University of Hawaii at Manoa International Pacific Research Centre (IPRC). It has been published in the journal Proceedings of the National Academy of Science. El Niño is a climate phenomenon that takes place over the equatorial Pacific. **It is one phase of an alternating cycle known as El Niño Southern Oscillation (ENSO).** When there is a warming of the sea surface temperature in the eastern and central equatorial Pacific Ocean, it is known as **El Niño**. When the opposite cooling phase takes place, it is known as **La Niña**. ENSO can cause extreme weather events in many regions of the world, and therefore has very important implications for seasonal climate predictions, including the monsoon in India. **While El Niño causes warmer temperatures over the equatorial Pacific, these are known to suppress monsoon rainfall. When La Niña happens, it has been found to be helpful in bringing good rainfall.** The researchers examined details of 33 El Niño events from 1901 to 2017. For each event, they evaluated the onset location of the warming, its evolution and its ultimate strength. Based on such parameters, **the team identified four types of El Niño, each with distinct onset and strengthening patterns.** They found a shift in El Niño behaviour since the late 1970s. **All events beginning in the eastern Pacific occurred prior to that time, while all events originating in the western-central Pacific happened since then.** The researchers suggested, therefore, **that climate change effects have shifted the El Niño onset location from the eastern Pacific to the western Pacific, and caused more frequent extreme El Niño events.** The team focused on the factors that seemed to be controlling these shifts, including increased surface temperatures in the western Pacific warm pool, and easterly winds in the central Pacific. They found that with continued global warming, **those factors may lead to a continued increase in frequency in extreme El Niño events.** "Simulations with global climate models suggest that if the observed background changes continue under future anthropogenic forcing, more frequent extreme El Niño events will induce profound socioeconomic consequences," Wang said in a statement released by his university. The classification system in this study provides a tool for climate modelling of El Niño and La Niña.

### The Mystery of The Melanistic Manta Rays

- Spanning up to 25 feet from wing to wing, manta rays look like U.F.O.'s from below. If you ever get a chance to dive with them, look up. Lights won't beam down and abduct you, but something about their bellies may surprise you. Most are white, but some are splattered with unique black blotches. This trait, known as melanism, is seen with some frequency on land. **For many terrestrial animals, having a black coat seems to offer an evolutionary advantage. It helps some pocket mice hide out, some snakes regulate their body temperature and some insects resist diseases.** But underwater, melanism is far less common. Of the hundreds of species of cartilaginous fish in the ocean, only two — the two known species of manta rays — exhibit this trait, and then only in some populations. The reason for this dark pigmentation has long been unknown. The mystery of the melanistic mantas remains unsolved. But in a study published Tuesday in Proceedings of the Royal Society B, researchers confirmed that some manta ray populations have more melanistic individuals than others, and at least one possible explanation was definitively eliminated. For the moment, the team hypothesizes that an evolutionary process that is neutral, and not related to predation, might be at play. And their work demonstrates that some scientific questions don't have black-or-white answers. To study the manta-ray enigma, the researchers looked at the frequency of melanism in thousands of photos uploaded by divers, dive operators and underwater photographers between 2003 and 2018 in different locations in and around the Indian and Pacific oceans.



They found that melanism varied from place to place. In Indonesia's Raja Ampat islands, for example, 40 percent of the reef manta population was melanistic, but in others, it was hard to find even two melanistic mantas. This suggested that some evolutionary advantage could be selecting for this trait in these populations, but what? Mantas have few predators, in part because of their size. They also tend to have white bellies, which enable them to blend in with contrasting light from the surface and avoid being seen from below. Presumably a black belly would make them more conspicuous, and more prone to predation. The researchers tested that idea by following a few individual animals through years of photos, then determining whether coloration influenced the animals' survival. The results, described in the new paper, showed no difference in the survivorship of white and melanistic rays. Whatever the role of those dark blotches, they weren't making the rays more visible to predators. One potential explanation for why some manta populations may have more melanism than others, they say, is that the trait may spread at random when different groups meet. Or perhaps the trait is passed down among individuals in populations that have become isolated. Genetics are complex, and in future research Ms. Venables and her colleagues hope to identify the genes responsible for melanism in mantas, which could be linked to other traits that are important for survival.

### Vital Additions to Empirical Research (Maitreesh Ghatak - Professor of Economics at The London School of Economics and A Fellow of The British Academy)

- If Rip Van Winkle was an academic economist and woke up from a two-decade long sleep this week, he would be baffled by the news of the Nobel Prize in Economics this year awarded to **Abhijit Banerjee, Esther Duflo, and Michael Kremer** for pioneering the use of randomised control trials (RCTs) in development economics. Back in the late 1990s, this was not a well-known concept, let alone a widely practised research method. Moreover, research in economics was still largely theoretical although the shift in a more empirical direction had already started. **It is true that the concept of randomised experiments is well-known in medical trials, and the idea itself goes back to the statistician Ronald Fisher back in the 1930s.** RCTs use the following insight: you select two groups that are similar and then randomly select one to receive the treatment (a drug, or a policy) being tested and then compare the outcome of this group (called the **treatment group**) with that of the other group (called the **control group**). If the difference is statistically significant, then that is attributed to the treatment. Using this method in economics has altered our views about what policies work and what do not. **Michael Kremer was visiting Kenya where he spent a year teaching school student in the late 1980s as part of a small educational NGO, and came up with the idea of applying RCTs in the development context somewhat accidentally, or shall we say, randomly. In deciding whether a rural school should prioritise building more classrooms or giving out new textbooks and uniforms, he suggested that the non-governmental organisation (NGO) phase these interventions randomly to study their impact. Over the next two decades, together with Mr. Banerjee, Ms. Duflo and many of their colleagues in the academic and policy world, this method now has become one of the main tools used in empirical work in development economics and in related fields.** It has also led to a paradigm shift in development policy evaluation — the World Bank, and many governments and large NGOs now insist on randomised control methods wherever feasible. The key innovation here is not coming up with the idea of randomisation but applying it in real life with programmes and interventions that directly affect the lives of the poor. From testing drugs to placing government programmes as





well as those carried out by NGOs on a randomised basis across villages, households, and organisations, takes quite a leap of imagination. **The reason it caught on in academic research in economics is because with greater computing power and large data-sets that were available, empirical work was in ascendance and yet, given the nature of data that is collected in usual surveys, it is hard to establish the effect of any programme on any outcome in a rigorous way. The key worry is, the programme or intervention may have been tried out in areas where something else was going on and so we could be picking up a spurious correlation.** RCTs solve this problem by placing the programme in a randomised way. RCTs, however, can mostly be applied to study problems at the micro-level where the implementation of an individual programme can be done in a randomised way that allows for a statistically satisfactory evaluation of the programme's impact. To the extent RCTs are not feasible, which is often the case with more large-scale macro-level questions, one has to rely on other, more roundabout methods to overcome the problem of causal inference. **This immediately points to both the strength and weaknesses of RCTs: when feasible, they are a great tool to use, but for many questions of great interest in development economics such as broad macro-level issues or the more long-run aspects of development and institutional change, they are not feasible.** As with any new method that attracts young researchers and research funding, there are grounds to worry that this will push out important research that uses other methods, including theory and empirical work that does not use RCTs. However, the tension is not always so stark. A new generation of RCTs are going beyond programme evaluation and asking how individuals react to change in prices, contracts, and new information in the context of specific markets such as land or credit. Here the experiments are often informed by theory. For example, a recent RCT offered different terms of sharecropping contracts in a randomised way to find out the effect of higher crop-shares on agricultural productivity in the context of tenancy. The evidence suggested significant productivity gains, confirming the importance of incentives. Interestingly the study confirms the findings of earlier studies like the one on 'Operation Barga', the tenancy reform programme carried out in West Bengal by the Left Front government in the late 1970s and early 1980s, which shifted crop-share up. In that study, which happens to be by Mr. Banerjee, me and Paul Gertler in the pre-RCT days, **there was no way of fully controlling for all other factors that had changed contemporaneously, such as empowering panchayats.** This is an example of how RCTs can be potentially applied to a broader set of issues going beyond programme evaluation. Moreover, one key limitation of RCTs is they can establish what works, but cannot say much about what could have worked better or whether it could work in a very different environment. This is a general problem of empirical work not unique to RCTs and once again, the solution is not to abandon RCTs but see how they can be combined with theoretical models to simulate the effect of alternative policies or what could happen in a very different environment. As with any new method, while there is always some displacement of existing methods there are also potential synergies that harness the strengths of both. **If we step outside the academic world, there is a whole set of issues regarding the use of RCTs and how they can form the basis of evidence-based policy. There is the concern that funding by large donor or private philanthropic organisations may influence the policy agenda in certain directions.** Also, imposing a test of purity that the only form of evidence that counts is that generated by RCTs may lead us to ignore many other forms of useful evidence, and that may be potentially dangerous. Finally, there is the critique that given the political environment within which policymaking and programme implementation happens, it is unrealistic to expect anything more than marginal gains from improving the design of anti-poverty programmes. These



concerns cannot be dismissed. However, where the RCT revolution deserves credit even in the context of these criticisms is creating a consensus that evidence is important in the context of policy — which pushes us to be aware of both what we know and what we do not know — and to quantify and compare the costs and benefits of alternative programmes. This may be the most important impact of RCTs in the public domain, especially in the context of India where policy formulation and implementation is often done in a highly centralised fashion and carried out without looking at the evidence or trying to test the waters and generate some evidence, as has been the case with how demonetisation was carried out and how the Goods and Services Tax was implemented. **As much as medicine should not be prescribed without diagnosis, policies should not be implemented without evidence and to the extent RCTs have brought the spotlight on this, more power to them on this count.**

- The award carries a purse of 9 million Swedish krona (about Rs 6.5 crore) to be shared among the three winners. When asked what she would do with the “considerable” prize money given that most of her work is on alleviating poverty, Duflo recalled Marie Curie, who had bought a gram of radium with the prize money from her first Nobel (in Physics in 1903): “We will discuss and decide what our ‘gram of radium’ is.” **Like Curie, who won the 1903 Nobel with her husband Pierre, Duflo is married to Banerjee, with whom she shares the honour in part.** They have been collaborating for long, and in 2011 wrote the book *Poor Economics: Rethinking Poverty & The Ways to End it together*. The couple are at the Massachusetts Institute of Technology; Kremer is at Harvard University. “The research conducted by this year’s Laureates has considerably improved our ability to fight global poverty,” the Nobel citation says. “Their new experiment-based approach has transformed development economics.” In *Poor Economics*, Banerjee and Duflo bemoaned how the debates on poverty “tend to be fixated on the ‘big questions’: What is the ultimate cause of poverty? How much faith should we place in free markets? Is democracy good for the poor? Does foreign aid have a role to play? And so on”. Banerjee, Duflo and Kremer, who have been working together since the mid 1990s, are different in that they do not get stuck with the “big questions”. Instead, they break down a problem, study its different aspects, conduct various experiments and, based on such “evidence”, decide what needs to be done. Thus, instead of looking for the silver bullet to prop up the 700 million people globally who still live in extreme poverty, they look at the various dimensions of poverty — poor health, inadequate education, etc. They then drill down further on each of these components. Within poor health, for instance, they look at nutrition, provisioning of medicines, and vaccination, etc. Within vaccinations, they try to ascertain “what works” and “why”. As Duflo said immediately after the announcement: “People have reduced the poor to caricatures without understanding the roots of their problems. (We decided) let’s try to unpack the problem and analyse each component scientifically and rigorously.” “The lack of a grand universal answer might sound vaguely disappointing, but in fact it is exactly what a policy maker should want to know — not that there are a million ways that the poor are trapped but that there are a few key factors that create the trap, and that alleviating those particular problems could set them free and point them toward a virtuous cycle of increasing wealth and investment,” Banerjee and Duflo said in *Poor Economics*. Breaking down the poverty problem and focussing on the smaller issues such as “how best to fix diarrhoea or dengue” yielded some very surprising results. For instance, it is often believed that many poor countries (like India) do not have the resources to adequately provide education, and that this resource crunch is the reason why school-going children do not learn more. But their field experiments showed that lack of resources is not the primary problem. In fact, studies showed that neither providing more textbooks nor free school meals improved learning outcomes.



Instead, as was brought out in schools in Mumbai and Vadodara, the biggest problem is that teaching is not sufficiently adapted to the pupils' needs. In other words, providing teaching assistants to the weakest students was a far more effective way of improving education in the short to medium term. Similarly, on tackling teacher absenteeism, what worked better was to employ them on short-term contracts (which could be extended if they showed good results) instead of having fewer students per "permanent" teacher, in order to reduce the burden on teachers and incentivise them to teach. The "new, powerful tool" employed by the Laureates is the use of Randomised Control Trials (or RCTs). So if one wanted to understand whether providing a mobile vaccination van and/or a sack of grains would incentivise villagers to vaccinate their kids, then under an RCT, village households would be divided into four groups. Group A would be provided with a mobile vaccination van facility, Group B would be given a sack of food grains, Group C would get both, and Group D would get neither. Households would be chosen at random to ensure there was no bias, and that any difference in vaccination levels was essentially because of the "intervention". Group D is called the "control" group while others are called "treatment" groups. Such an experiment would not only show whether a policy initiative works, but would also provide a measure of the difference it brings about. It would also show what happens when more than one initiative are combined. This would help policymakers to have the evidence before they choose a policy. The use of RCTs as the provider of "hard" and incontrovertible evidence has been questioned by many leading economists — none more so than Angus Deaton, the winner of the Economics Nobel in 2015, who said "randomisation does not equalise two groups", and warned against over-reliance on RCTs to frame policies. While randomly assigning people or households makes it likely that the groups are equivalent, randomisation "cannot guarantee" it. That's because one group may perform differently from the other, not because of the "treatment" that it has been given, but because it has more women or more educated people in it. More fundamentally, RCTs do not guarantee if something that worked in Kerala will work in Bihar, or if something that worked for a small group will also work at scale. This Nobel, albeit indirectly, for RCTs will likely stoke this debate again.

### Prize for Peace

- Ethiopian Prime Minister Abiy Ahmed Ali was awarded the 2019 Nobel Peace Prize on Friday for "his important work to promote reconciliation, solidarity and social justice". In its citation, the Norwegian Nobel Committee said: "Abiy Ahmed Ali has initiated important reforms that give many citizens hope for a better life and a brighter future." When Abiy became Prime Minister in 2018, Ethiopia had been locked in conflict with Eritrea for 20 years. In July that year, the former Army officer-turned-PM, then 41, stepped across the border, held Eritrean President Isaias Afwerki in a warm embrace and signalled the beginning of a peace effort, announcing to the world that war was no longer an option. The Nobel Committee noted how Abiy, in cooperation with Afwerki, worked out the principles of a peace agreement, set out in declarations the two leaders signed in Asmara during that July visit and in Jeddah in September. It also listed domestic achievements by Abiy in his first 100 days as Prime Minister — lifting Emergency, granting amnesty to thousands of political prisoners, discontinuing media censorship, legalising outlawed opposition groups, dismissing military and civilian leaders suspected of corruption, and increasing the influence of women in political and community life. The stalemate Abiy helped break is about a border dispute that began in 1998. Conflict between the two countries, however, has a longer history. **Eritrea, once an Italian colony, was merged with Ethiopia in 1936 during Benito Mussolini's regime, then taken over**



by the British during the Second World War. After the War, a United Nations declaration in 1950 made Eritrea part of a federation with Ethiopia. When Eritrean groups launched a struggle for independence in 1961, Ethiopia dissolved the federation and annexed Eritrea in 1962. After a war that lasted 30 years, Eritrea gained international recognition as an independent country in 1993. Just five years later, however, war broke out over the control of Badme, a border town both countries coveted. The violence, which went on until an agreement to cease hostilities in 2000, claimed 80,000 lives and separated countless families. Since then, the two countries were in a state the Nobel Committee described as “no peace, no war”. In the two agreements during and after Abiy’s visit, the two countries have announced the resumption of trade, diplomatic, and travel ties and “a new era of peace and friendship” in the Horn of Africa. “... Telecommunications have been restored, allowing families that were split up in the war to contact each other. In the days that followed this breakthrough, some Ethiopians called Eritrean numbers randomly, and vice versa, just to speak to someone on the other side, simply because they could. Others tracked down parents, siblings and friends,” The New York Times reported. Ethiopia is Africa’s second largest country by population, but landlocked, while tiny Eritrea is connecting by sea to the Middle East. Through the years of conflict, Ethiopia had depended heavily on Djibouti for access to the Gulf of Aden and onward to the Arabian Sea. The peace deal opened up Eritrean ports for Ethiopian use. While the peace effort is a step forward, ethnic rivalries in Ethiopia have flared in recent years and the country has millions of internally displaced refugees. “No doubt some people will think this year’s prize is being awarded too early. The Norwegian Nobel Committee believes it is now that Abiy Ahmed’s efforts deserve recognition and need encouragement,” the Committee said. It acknowledged Afwerki too: “Peace does not arise from the actions of one party alone. When Prime Minister Abiy reached out his hand, President Afwerki grasped it...”

### Why Is There No Mathematics Nobel? The Theories, The Facts, The Myths

- Every Nobel season, which has just ended with the award of the Prize in Economic Sciences in Memory of Alfred Nobel, one question keeps popping up. Why is there no Nobel Prize for mathematics? Researchers have looked for answers, and the generally accepted theory is that the idea of such a prize never occurred to Alfred Nobel. One popular myth they discount is that Nobel disliked mathematicians because one of them had an affair with his wife — for, **Nobel never married**. Others claim that Nobel kept mathematics away from his list for fear that it would be awarded to the Swedish mathematician Gösta Mittag-Leffler, who allegedly had an affair with Sophie Hess, a Viennese with whom Nobel himself had a relationship. Scholars dismiss this too; the evidence does not add up. In 1888, a French obituary described Alfred Nobel, the **inventor of dynamite**, him as the “Merchant of Death”. The newspaper had made a mistake: the man who had died was Ludvig Nobel, brother of Alfred (1833-1896). It upset Alfred Nobel, who hoped his real obituary would not include the words “Merchant of Death” — and thus the idea of setting up the Prizes, University of Michigan mathematician Lizhen Ji wrote in the journal Notices of the International Congress of Chinese Mathematicians in 2013. Nobel chose Physics and Chemistry because he was a scientist himself. Physiology or Medicine, because he was a healthy man and valued progress in medicine, Ji wrote. Literature, because he himself had written plays and poems in his youth. And Peace, because, according to Ji, he hoped the Prize would one day be awarded to the Baroness Bertha von Suttner, another woman with whom Nobel once had a relationship. Eventually, she did win the Peace Nobel for her novel Lay Down Your Arms — in 1905, some years after Nobel’s death. “For natural reasons, the thought of a prize in mathematics never entered Nobel’s mind,” wrote





the mathematicians Lars Gårding and Lars Hörmander in one of the definitive researches works on the subject, published in *Mathematical Intelligencer* in 1985. Ji referred to their findings that Nobel did not use much mathematics in his work or business, and did not enjoy mathematics either. **There are other prizes that honour achievements in mathematics. The Fields Medal, named after a Canadian mathematician, is awarded by the International Mathematical Union to mathematicians under age 40. The Abel Prize, named after the genius Neils Henrik Abel, is awarded by the Norwegian government. Other awards, such as the Shaw Prize, King Faisal International Prize, and Wolf Prize, include mathematics alongside other fields.** The Nobel Prize in various fields has recognised mathematicians and mathematics-related work on some occasions. Bertrand Russell won it for Literature in 1950, Max Born and Walter Bothe won the Physics Prize in 1954 for statistical work in quantum mechanics, and the **legendary mathematician John Nash shared the 1994 Economics Prize for his work on game theory.**

“In any case, it’s a silly question. Nobel didn’t set up a prize for geology, archaeology, engineering, painting, sculpture, music — or football, for that matter. Not to mention hundreds of other areas of human activity. It would have bankrupted even him to cover everything,” he said. Stockholm has an institute for mathematical research named after Mittag-Leffler. One of its first employees was the Russian Sonya Kowalevski who, according to Ji’s paper, had many admirers, including Alfred Nobel. She happened to be a mathematician. **This is only the second time a woman has bagged the prestigious award, popularly called the Economics Nobel, and it is a first for a husband-wife duo to win in this discipline — Mr. Banerjee is married to Ms. Duflo.**

### What is Elastocaloric Effect?

- When rubbers bands are twisted and untwisted, it produces a cooling effect. This is called the “elastocaloric” effect, and researchers have suggested that it can be used in a very relevant context today. Researchers from multiple universities, including Nankai University in China, have found that the elastocaloric effect, if harnessed, may be able to do away with the need of fluid refrigerants used in fridges and air-conditioners. These fluids are susceptible to leakages, and can contribute to global warming. The results of the research were published in the journal *Science* on Friday. In the elastocaloric effect, the transfer of heat works much the same way as when fluid refrigerants are compressed and expanded. When a rubber band is stretched, it absorbs heat from its environment, and when it is released, it gradually cools down. In order to figure out how the twisting mechanism might be able to enable a fridge, the researchers compared the cooling power of rubber fibres, nylon and polyethylene fishing lines and nickel-titanium wires. They observed high cooling from twist changes in twisted, coiled and supercoiled fibres. They reported that the level of efficiency of the heat exchange in rubber bands “is comparable to that of standard refrigerants and twice as high as stretching the same materials without twisting”. To demonstrate this setup, the researchers developed a fridge the size of a ballpoint pen cartridge that was able to bring down the temperature of a small volume of water by 8°C in a few seconds. They suggested that their findings may lead to the development of greener, higher-efficiency and low-cost cooling technology.

### Scandal to Controversy

- Austrian writer Peter Handke bagged the 2019 Nobel Prize for Literature, and Polish author Olga Tokarczuk was named the winner for 2018. Last year, the Swedish Academy, which



awards the annual Nobel Prize for Literature, called off the ceremony after a sex scandal. The Swedish body called for reforms in the secretive organisation and said it wanted to move on from the scandal. **But apart from the 'Eurocentric' choice for 2018 and 2019, picking Handke, who has played down Serb atrocities against Bosnian Muslims in the Balkan war, have left many writers and critics fuming.** According to critics, Handke's choice is controversial because of his Serbia-as-victim stance in the Balkan war and for attending the funeral of former Serbian President Slobodan Milošević. Under Milosevic's regime, thousands of ethnic Albanians were killed and at least a million had to flee. The Serbian president was indicted for war crimes in 1999 but died in 2006 before a ruling was reached. At the funeral, Handke said: "I don't know the truth. But I look. I listen. I feel. I remember. This is why I am here today, close to Yugoslavia, close to Serbia, close to Slobodan Milosevic," Balkan Transitional Justice, a platform that looks at justice issues for the former Yugoslav countries, posted on its website. On Twitter, Kosovo's Ambassador to Washington, Vlora Citaku, reacted strongly: "Have we become so numb to racism, so emotionally desensitized to violence, so comfortable with appeasement that we can overlook one's subscription & service to the twisted agenda of a genocidal maniac?" Writer Hari Kunzru, who has taught the Austrian's works, told The Guardian: "Handke is a troubling choice for a Nobel committee that is trying to put the prize on track after recent scandals. He is a fine writer, who combines great insight with shocking ethical blindness," adding, "More than ever we need public intellectuals who are able to make a robust defence of human rights in the face of the indifference and cynicism of our political leaders. Handke is not such a person."

### Unravelling the Secrets of The Universe

- On October 8, the royal Swedish Academy of Sciences announced that the Nobel Prize in Physics would go to three people: One half of it would be shared by **Michel Mayor and Didier Queloz** of the University of Geneva, for discovering for the first time a planet outside our solar system orbiting a Sun-like star; the other half would go to James Peebles, Princeton University, for his contribution to physical cosmology. The word planet is a general term that describes any celestial body that moves around a star. Well, there are also "rogue" planets that do not orbit stars. An exoplanet is a planet outside our solar system. **The very first, significant "false alarm" came from no place other than Chennai, then known as Madras. Captain William Stephen Jacob who was the director of the Madras Observatory (The East India Observatory at Madras) from 1849 to 1858, made this "finding" in 1855. He was studying the binary star (a pair of stars that orbit each other) named 70 Ophiuchi and noticed a slight difference in the orbital motions of the pair.** He attributed this to the presence of a planet orbiting them. He published this result in the Monthly Notices of the Royal Astronomical Society. His findings were corroborated by astronomer Thomas Jefferson Jackson See who even deduced that the planet would take 36 years to orbit the stars. Sadly, however, both of their calculations were later shown to have mistakes. This story is narrated in the book *Worlds Beyond Our Own*, by Prof. Sujan Sengupta, of the Indian Institute of Astrophysics, Bengaluru. Incidentally, the Madras observatory later evolved into the Indian Institute of Astrophysics. **The constellation Pegasus has a star 51 Pegasi which is some 50 light years away from earth. On October 6, 1995, the prize-winning duo discovered a planet orbiting it. It was named 51 Pegasi b, as per astronomical conventions. It is a gas giant, about half the size of Jupiter, which is why it was given the name Dimidium, meaning one-half. It orbits its star in just four days.** It is unlikely that we can survive that. According to the NASA exoplanet archive, as of October 10, 2019, there are **4,073 confirmed exoplanets**. This webpage hosts one of the archives that has such



lists and data. Today, there are not just ground-based telescopes but space missions that search for exoplanets, such as the **Kepler Space Telescope**. In the beginning was the **Big Bang**, about 13.8 billion years ago. No one knows much about the earliest states of the universe, but theories hold that it was a compact, hot and opaque particle soup. About 400,000 years after the Big Bang, the universe expanded and cooled to a few thousand degrees Celsius. This caused it to become transparent, allowing light to pass through it. This ancient afterglow of the Big Bang, the remnants of which still can be observed, is known as the cosmic microwave background (CMB). The universe continued to expand and cool and its present temperature is close to 2 kelvin. That is, approximately minus 271 degrees Celsius. Peebles realised that measuring the CMB's temperature could provide information about how much matter had been created in the Big Bang. He also saw that the release of this light played a role in how matter could form clumps creating what we now see as galaxies. This was a major breakthrough. This discovery by Peebles heralded a new era of cosmology. Many questions — how old is the universe? What is its fate? How much matter and energy does it contain? These could be answered by studying the variation of the CMB. The news release of the Nobel academy describes these variations as wavelets on the sea surface — small from a distance but significant when close. **By measuring the speeds of rotating galaxies, scientists were able to see that a lot of mass needed to be there that would hold the galaxies together with the strength of their gravitational attraction. Before Peebles intervened, the missing mass was attributed to neutrinos. Peebles instead said this is due to a hitherto unknown type of "dark" matter particles. However, while they could "see" a portion of this mass, a large part of it could not be seen. Hence the mass missing from view was named "dark" matter. It is to be understood that in this case "seeing" is not being used in the sense that the matter in question is very far away and hence cannot be seen. It means that even though this matter is all around us, close as well as far away, we only feel it through its gravity, but we cannot see it through other interactions.**

### How Do Oxygen Levels Affect Cell Metabolism?

- This year, the Nobel Prize for Physiology or Medicine was awarded to three scientists, William G. Kaelin Jr. from Howard Hughes Medical Institute, Maryland, U.S., Sir Peter J. Ratcliffe from Francis Crick Institute, London, and Gregg L. Semenza from the Johns Hopkins Institute for Cell Engineering for their discovery of **how cells sense and adapt to oxygen availability**. The three scientists have uncovered the genetic mechanisms that allow cells to respond to varying levels of oxygen. Oxygen is used by all cells to convert food to useful energy. While oxygen is essential for the survival of cells, excess or too little oxygen can lead to adverse health consequences. Oxygen supply temporarily reduces in muscles during intense exercise and under such conditions the cells adapt their metabolism to low oxygen levels. Proper growth of the foetus and placenta depends on the ability of the cells to sense oxygen. Drugs have already been developed to treat anaemia by making the body produce increased number of red blood cells. Similarly, drugs to increase oxygen availability in people with heart disease and lung cancer are being tested. Many diseases can be treated by increasing the function of a particular pathway of the oxygen-sensing machinery. At the same time, inhibiting or blocking the pathway will have implications in treating cancer, heart attack, stroke and pulmonary hypertension. **Cancers are known to hijack the oxygen-regulation machinery to stimulate blood vessel formation and also re-programme the metabolism in order to adapt to low oxygen conditions.** The reprogramming of metabolism gives cancer cells the plasticity to shift from a state where they have limited potential to cause cancer to a state when they have



greater potential for long-term growth. Efforts are under way to develop drugs that can block the oxygen-sensing machinery of cancer cells to kill them. The rate at which we respire depends on the amount of oxygen being carried in the blood. Specialised cells present next to large blood vessels in the neck sense the blood oxygen level and alert the brain to increase the rate of respiration when the oxygen level in the blood goes down. This discovery won a Nobel Prize in 1938. At the beginning of the last century, scientists knew that specialised cells present in the kidneys make and release a hormone called erythropoietin. When oxygen level is low, as in high altitudes, more of this hormone is produced and released, leading to increased production of red blood cells in the bone marrow — helping the body adapt to high altitudes. Besides increasing red blood cells, the body also grows new blood vessels to increase blood supply. Both Prof. Semenza and Sir Ratcliffe independently studied how the erythropoietin gene is regulated by varying oxygen levels. Both researchers found that the oxygen-sensing mechanism is not restricted to kidneys where the erythropoietin is produced but by diverse cells in tissues other than the kidney. Prof. Semenza identified a pair of genes that express two proteins. When the oxygen level is low, one of the proteins (HIF-1alpha) turns on certain genes, including the erythropoietin gene, to increase the production of erythropoietin. The hormone, in turn, increases the oxygen availability by boosting the production of red blood cells. Prof. Kaelin Jr., who was studying an inherited syndrome called von Hippel-Lindau's disease (VHL disease) found that people had increased risk of cancer when they inherited VHL mutations. He found the VHL gene seemed to be involved in how cells respond to oxygen. The function of the HIF-1alpha protein, which turns on the genes to produce more erythropoietin, is blocked and is rapidly degraded when the oxygen level is normal but remains intact when oxygen level is low. Sir Ratcliffe found that VHL interacts with the HIF-1alpha protein and degrades it when the oxygen level is normal. This ensures that excess red blood cells are not produced when the oxygen level is normal. In 2001, Prof. Kaelin Jr. and Sir Ratcliffe both elucidated more details on the mechanism of degradation of HIF-1alpha protein by VHL when the oxygen level is normal but not when the oxygen level is low. Athletes have been found to use erythropoietin, synthetic oxygen carriers and blood transfusions for blood doping. Each of the three substances or methods is banned by the World Anti-Doping Agency (WADA). While the use of erythropoietin in people who are anaemic due to chronic kidney disease helps in increasing the oxygen level in the blood, the use of the hormone by normal, healthy people can lead to serious health risks. In the case of healthy people who have a normal red blood cell count, the use of external erythropoietin is highly likely to make the blood thick (increase viscosity) leading to an increased risk of heart disease, stroke, and cerebral or pulmonary embolism (clot that blocks the flow of blood).

### Greening the Powerhouses

- At a recent summit of mayors held in Copenhagen under the C40 Cities initiative, Al Gore, the former U.S. Vice-President and climate campaigner, said cities really have no choice, since too many national governments have come under the influence of special interests, and are no longer willing to lead. The mayors at the summit were keen, because their cities represent an estimated 70% of global carbon dioxide emissions. They also realise that nearly 90% of urban areas are at high risk from extreme climate events such as storms, because they are situated along coastlines. These cities are home to millions, many of them poor and ill-equipped to handle floods; many also endure cycles of drought and heat waves. Indisputably, urbanisation will remain a strong trend this century. Annually, about 70 million people will be drawn to cities and towns for the next three decades, according to the special report on global warming of





1.5°C issued by the Intergovernmental Panel on Climate Change last year. This means mayors of cities worldwide, and State governments in India, must prepare for difficult times with action plans for urban centres. This is a greenfield opportunity for policymakers, since much of the infrastructure in India remains to be built, unlike cities in the developed world. All planning must therefore be climate-centric. In Copenhagen, mayors from Toronto and Berlin spoke about expensive plans to retrofit buildings for energy efficiency and shift their transport infrastructure to greener options. Montreal is shifting city logistics to electric vehicles, keeping large trucks confined to centralised terminals. India does not have to repeat the cycle and can leapfrog the era of dirty fuels. Rome's Mayor Virginia Raggi has an aggressive plan to ban diesel emissions, encourage sustainable shared mobility including biking and walking, and pursue a green new deal. China's Hangzhou already has the largest public bicycle-sharing system and is moving to a smart bus service. Hong Kong is ready to harvest super typhoons in new drainage tunnels that will reuse rainwater and grow biodiversity. Singapore will put a price on carbon. Novo Nordisk, a healthcare company, wants to partner with mayors on its Cities Changing Diabetes programme to "bend the curve" on the public health challenge through better facilities for biking, walking and urban mobility. India's fast-expanding cities and towns need such far-sighted measures. But today, climate change is not integral to their planning, despite the risk to residents and economic assets. It will take innovation, technology and financing to adapt to drought, floods and heat islands. At the C40 summit, Kolkata bagged an award for green mobility, and Delhi's Chief Minister Arvind Kejriwal informed the delegates that the national capital was cutting emissions by inducting 1,000 electric buses, planting trees on a massive scale, and eliminating the use of dangerous industrial chemicals. Delhi is also setting up a task force for clean air. These must be the priorities for all cities. Determined policies can restore the power of the commons: through inclusive and green urban spaces, sustainable mobility, protected water sources and a reduction of waste — all of which will sharply reduce carbon emissions in a growing economy. It is almost four years since India signed the Paris Agreement, a period during which the Environment Ministry should have helped States come up with city-level action plans, since the country lacks empowered mayors. In 2020, the Paris framework will enter its active phase of implementation, and fast-growing countries will be expected to demonstrate their efforts at greening their economies. This is an opportunity, and not a threat. India's urbanisation should move to a trajectory of low emissions, reflected in urban governance that incentivises eco-friendly design.

### What Is Keeping the Pixel 4 Out of India

- Imagine being able to control your smartphone without touching it? Dismissing a notification or snoozing an alarm with just a wave of your hand? The idea, then called 'Air Gestures', was first propagated by Samsung with the Galaxy S4 and more recently with the Galaxy Note 10 series. Now, Google Pixel 4 will use a radar-based **Soli chip** to introduce Motion Sense, a feature that provides similar touchless gesture-based controls. Soli also enables a Face Unlock feature on the Pixel 4. But the Soli chipset could also be the reason why the Pixel 4 phones are not making their way to India. A look at the reasons: Project Soli, driven by Google's Advanced Technology and Projects (ATAP) team, was first showcased back in 2015. The idea is that a radar chip can be used to detect hand movements and gestures to interpret what they could mean. It's only recently that Google figured out how to reduce the size of this radar chip and fit it on the front of the smartphone, still ensuring accuracy. And that's why it is coming to Pixel 4. Soli is a dedicated radar chip on the front of the Pixel to collect raw data of hand gestures and then interpret them correctly for the right commands. Google says the miniature radar



understands human motions at various scales, from the tap of a finger to the movements of the body. It is always sensing for movement while maintaining a low footprint — keep in mind Soli is not a camera and doesn't capture any visual images. Soli relies on a custom-built machine learning (ML) model to understand a large range of possible movements. Google says these models run on the device and sensor data is never sent to their servers. **The Soli radar chip emits electromagnetic waves in a broad beam and when a human hand interacts with this, some of these waves are reflected back to the antenna. The ML-model quickly interprets the properties of the reflected signal to carry out the required command. This Motion Sense technology allows Pixel 4 users to wave their hands to snooze an alarm or skip songs or go back to the last song without touching the screen. Users will have the option of going to settings to turn Motion Sense on or off. However, Motion Sense will only work in countries where this radar tech has been approved for consumer use. The list includes "US, Canada, Singapore, Australia, Taiwan, and most European countries." India has not yet given a go-ahead for this technology. The Soli radar chip works on the 60 GHz spectrum frequency as it has the least interference for the kind of minute movements Google wants to track. However, the 60 GHz spectrum is not commercially usable in India. In a consultation paper titled "Proliferation of Broadband through Public Wi-Fi Networks," the Telecom Regulatory Authority of India wrote that "most countries have already delicensed the 60 GHz band and this band has a good device ecosystem. The 60 GHz band is also known as V-band or WiGig band (Wi-Fi at 60 GHz) using IEEE 802.11ad protocol." The TRAI also recommends that the "... V-band (57-64 GHz) may be explored for allocation to the telecom service providers." But that is yet to happen. Without this USP available in the country, it would not have made much sense for Google to bring the pricey Pixel 4 to India.**

  
**DreamIAS**