

13 EXPLAINED



SOCIAL INTELLIGENCE

Moralists decry materialism, exalt spirituality, but world'd be more peaceful if everyone was OK w[ith] just making a living. Spirituality kills.
STEVEN PINKER, American cognitive scientist, psychologist, linguist and popular science author; professor at Harvard University Department of Psychology; advocate of evolutionary psychology and computational theory of mind; 337,000 followers.

Chemical weapons in the kitchen: why cutting onion makes you break into tears



Damaging an onion causes it to ramp up its defences — as its cells break, two separate substance combine to produce a chemical called LF that irritates eyes

JOANNA KLEIN

TRYING TO figure out why humans cry is exhausting. We cry about death, violence, breakups, abandoned puppies, sweet kisses and words charged with all kinds of meanings. We don't cry when we should, and we cry for no reason. But let's take a moment to appreciate the clarity of crying while cutting onions.

Onions make us teary because a reaction in the onion releases a chemical called lachrymatory factor, or LF, that irritates our eyes. Simply peeling an onion won't make your eyes water. But if you chop, cut, crush or smash one — boohoo. The onion's cells break open, allowing two normally separated substances to combine. Linked together like pieces of a puzzle, they become a potent chemical weapon.

"It turns into a gas. It hits your eyes, and then it hits your sensory nerves in your eyes and causes them to tear up," said Josie Silvaroli, an undergraduate at Case Western Reserve University in Ohio who helped describe how these pieces fit together, structurally speaking, in a paper published in July in the journal *ACS Chemical Biology*. "It's similar to tear gas."

Lachrymatory factor evolved as a defence mechanism, protecting onions against microbes and animals like us, even if we've learned to bear tears for the sake of flavour. Damaging an onion basically causes it to ramp up its defences: As cells break, the chemical reaction is unlocked.

Inside the intact cells of an onion, a molecule called sulfenic acid precursor floats around the watery filler like a napping human in a lazy river. Also floating in that cytoplasm are little sacs called vacuoles, containing a protein called alliinase, which is like a little drill sergeant of the process.

"One has not seen the other, but if you damage the cells, they can now meet and make these reactions," said Marcin Golczak, a biochemist at Case Western Reserve and principal investigator of the study.

The molecule and the protein fit together perfectly, the chemical structure of the molecules change, and that lazy floater becomes a smelly soldier armed with tear gas.

Only two other plants are known to contain LF, guinea hen weed (*Petiveria alliacea*) and Sicilian honey garlic (*Allium sisculium*), but you're far less likely to encounter them.



PAPER CLIP

FLAGGING INTERESTING RESEARCH

CHEMISTRY

CUTS AND TEARS

Published in *ACS Chemical Biology*, August 2017: "Enzyme That Makes You Cry — Crystal Structure of Lachrymatory Factor Synthase from *Allium cepa*"

AUTHORS: Marcin Golczak, Josie A Silvaroli, Surajit Banerjee and Others

By contrast, the average American eats about 20 pounds of onions a year.

That makes for a lot of onion sobbing. And while some people cry more than others, it's unclear why. It's also unclear why some varieties seem to be more tolerable than others. Golczak said potency might depend on freshness, amount of LF produced or even a mutation that would alter LF's activity.

But is it possible to avoid the onion feelies? In Japan, scientists engineered a tearless onion. But it lacks that signature onion flavour.

"The taste is completely different," Golczak said.

With regular onions, there are options: Chuck your onion in the fridge before you cut it, or submerge it in water while chopping. Reducing the temperature will slow down the reaction, resulting in less LF. And in water, LF gases will dilute, becoming less potent. These tactics also alter the flavour, by impairing the processes that produce it — similar to what happens with chilled tomatoes.

Unfortunately, it seems there's no simple way to avoid it. For the love of onions, sometimes you just have to cry.

THE NEW YORK TIMES

Hurricane Climate Change? Not yet

First Hurricane Harvey barreled into Texas on August 25, now Irma, one of the most powerful on record, is battering the Caribbean and has Florida in its sights. Jose, currently a tropical storm, trails behind in the mid-Atlantic; early on Wednesday, a coalescing weather system in the southwestern Gulf of Mexico became tropical storm Katia, the fourth named storm in two weeks. What is going on in the Caribbean?

SIMPLY PUT

Why are so many tropical storms developing so rapidly in this region?

The formation of several storms in rapid succession is not uncommon, especially in August, September and October, the most active months of the six-month hurricane season (June 1–November 30) during which 95% of hurricanes and major hurricanes form. According to scientists at the US National Oceanic and Atmospheric Administration (NOAA), in the late summer and early fall, conditions in the tropical Atlantic off Africa become just right for cyclonic storms to form. Among those conditions are warming waters, which fuel the growth of storms, and a relative lack of abrupt wind shifts, called wind shear, that tend to disrupt storm formation.

Based on its assessment of a range of factors, NOAA had, in fact, predicted a busy hurricane season in 2017. Its Climate Prediction Centre forecast 14–19 named storms and 5–9 hurricanes, including 2–5 major ones, this season. Twelve named storms have already hit since June 1, four of which strengthened into hurricanes, and Jose and Katia may well reach hurricane strength in the next few days.

Is this year's rapid hurricane activity the result of climate change?

Overall, as the planet warms, the atmosphere can indeed hold more moisture, so hurricanes, like other rainstorms, could be expected to produce more rain on average than in the past. And as sea level rises, the impact of storm surges from hurricanes would be expected to worsen, because the surges are on top of a higher baseline. According to climate scientist Katharine Hayhoe, an author of the most recent draft of a sweeping climate science report pulled together by 13 US federal agencies as part of the National Climate Assessment, tropical storms and hurricanes do gain energy from warm water, so the unusually warm water that has accompanied climate change "can have a role in intensifying a storm that already exists".

So what is the problem in assuming a link between the two phenomena?

Despite what many activists believe, the links between climate change and hurricane activity are complex, and there are still many uncertainties. The report co-authored by Dr Hayhoe pointed out that the science linking hurricanes to climate change was still emerging, and "the trend signal has not yet had time to rise above the background variability of natural processes". While computer "models generally show an increase in the number of very intense" storms, "studies of individual events will typically contain caveats", the report said.

Does NOAA consider climate change in developing its forecasts?

No. What it does consider, though, are longer-term cycles of hurricane activity based on a naturally occurring climate pattern called the Atlantic multidecadal oscillation, which affects ocean surface temperatures over 25 to 40 years.

Can hurricanes then be understood separately from climate change?

There isn't a straight yes-no answer. Atmospheric Sciences professor Andrew Dessler said that the most solid link between climate change and storms is that "storm surge is made worse by sea level rise, which we are certain humans have contributed to". Dr Hayhoe noted that scientists are not saying that hurricanes are necessarily caused by climate change, but are being affected by them. "We care about a changing climate because it exacerbates the natural risks and hazards that we already face," she said. "People always want to know is it climate change or is it not? The answer is it's in between."

THE NEW YORK TIMES



Satellite image shows Hurricane Irma, a record Category 5 storm, churning across the Atlantic Ocean on a collision course with Puerto Rico and the Virgin Islands earlier this week. Irma had hit Puerto Rico late Thursday night India time. *NASA/Reuters*

MEANING HURRICANE

WHAT THESE STORMS ARE, WHERE AND HOW THEY DEVELOP, AND HOW THEY ARE NAMED

What?

A hurricane is a type of storm that is called a "tropical cyclone" — among tropical cyclones, hurricanes are the most violent and devastating kind. Tropical cyclones are rotating low-pressure weather systems that form over tropical or subtropical waters. They have organised thunderstorms but no "fronts" — i.e., a boundary separating two air masses of different densities.

Where?

Tropical cyclones originate in the Atlantic basin, which includes the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico, the eastern North Pacific Ocean, and, less frequently, the central North Pacific Ocean.

How?

Tropical cyclone systems are like engines that require warm, moist air as fuel — which is why they form only in the tropical regions where the ocean is at least 80 degrees Fahrenheit (about 27 degrees Celsius) for up to at least 50 metres (165 feet) below the surface. As wind blows westward over the ocean, water evaporates and rises, forming cumulonimbus clouds. The process of development of a tropical cyclone starts thereafter, and passes through four stages — beginning with a tropical disturbance, followed by a tropical depression and a tropical storm, which finally develops into a cyclone. As the system intensifies, it packs in progressively larger and higher thunderstorms and higher wind speeds — thus, at 25–38 miles per hour (40–60 km/h), the disturbance graduates to a depression; once they cross 39 m/h, it becomes a storm; and after they reach 74 m/h (120 km/h), the storm is officially a cyclone. By then, the storm is at least 50,000 ft high (commercial jetliners have a normal cruising altitude of 39,000 ft), 125 miles (200 km) across, and has an eye 5–30 miles (8–48 km) wide.



A view of the aftermath of Hurricane Irma on Sint Maarten Dutch part of the Saint Martin island in the Caribbean on Thursday. *Netherlands Ministry of Defence/Reuters*

When?

The so-called "hurricane season" in the Caribbean begins on June 1 and ends on November 30, although hurricanes can, and have, occurred outside of this timeframe. Twelve hurricanes develop on average every year in the Atlantic basin. The National Oceanic and Atmospheric Administration (NOAA) of the US Department of Commerce has among the world's most advanced hurricane observation systems to predict and track these storms.

Names

Hurricanes are given short, distinctive, easily remembered names because they make them easy to identify and describe, and are less prone to error, especially while exchanging detailed storm information between hundreds of widely scattered stations, coastal bases, and ships at sea, and when more than one storm system is active in the same broad geographical area. The World Meteorological Organisation (WMO), a specialised agency of the United Nations, maintains six-yearly rotating lists of names for each of the world's tropical cyclone basins. Thus, 21 names have been decided for each year from 2017–22, and the 2017 list will be used again in 2023.

If a cyclone is particularly deadly or costly (such as Andrew, 1992; Katrina, 2005; or Sandy, 2012) then its name is retired and replaced by another one. Should there be more than 21 storms in a season the subsequent storms are named after the Greek alphabet, beginning with Alpha, Beta, Gamma, and so on. As per the WMO list for 2017, the next three storms after Harvey and Irma in the Caribbean Sea, Gulf of Mexico and North Atlantic, are called Jose, Katia and Lee, and so on.

Sources: Web sites of NOAA, WMO and Scijinks, a joint NOAA and NASA educational web site

Size of Contingency Fund: where govt, RBI disagree



IN FACT

BY SHAJI VIKRAMAN

EXPRESS EDITORS INTERPRET

ECONOMIC AFFAIRS Secretary Subhash Garg said last week that the Centre was in talks with the Reserve Bank of India over the transfer of surplus from the earnings of the central bank. The surplus sum transferred from earnings during 2016–17 was Rs 30,659 crore, less than half of the Rs 65,876 crore transferred the previous year. Clearly, the government was expecting more — akin to a dividend payment from the RBI.

Part of the reason for the smaller surplus was the RBI's setting aside Rs 13,140 crore for its Contingency Fund (CF), a provision that

was not made last year. The RBI says the CF is meant for unforeseen contingencies — it is basically a buffer against valuation losses on bond holdings or foreign exchange assets in the event of a rise in interest rates or appreciation of the rupee. The Fund would also be helpful in a "black swan" event — such as the collapse of Lehman Brothers or of local banks that may threaten financial stability.

Over the last two decades, RBI has, in fact, built up the CF and other buffers such as an Asset Development Reserve. But its logic for making such provisions has not found takers at North Block. For three years — 2013–14, 2014–15 and 2015–16 — RBI transferred 99.99% of its surplus to the government, a massive jump from 37.20% in 2011–12 and 53.40% in 2012–13. The higher payouts were in line with the recommendations of a committee headed by YH Malegam, a well-known chartered accountant who was on the central bank's board. The payout from its earnings peaked at Rs 65,876 crore for 2015–16 (which accrued to the Centre in the following fiscal).



The question is, what level of reserves —

call it buffer, contingency or anything else — should a central bank keep to tide over extreme financial disruptions? The government's view has been that compared to many other central banks in the world, the RBI has been earmarking amounts far in excess of what is needed to maintain its creditworthiness. The government's argument is that at 26.5% of total assets — the RBI's CF is the second largest in the world after Norway — is way higher than the median of 10%. For many central banks, in fact, this figure is just 2% or 3%, and RBI's reserves buffer is at least Rs 3 lakh crore more than what is reasonable, goes the government's argument. Also, the government argues that as the owner of the Indian central bank, the sovereign would infuse more capital (or recapitalise) if at all the RBI's balance sheet were to be impacted.

An assessment of the adequate level of reserves could be subjective — from the perspective of both the Ministry of Finance and of the RBI. This is because of the differing ways in which the government and the RBI perceive and acknowledge the risks that a central bank faces or anticipates.

The RBI bases its assessment on an economic model — a risk management frame-

work, which it has adopted to calculate the level of reserves that need to be maintained. In his recently released book, *I Do What I Do*, former RBI Governor Raghuram Rajan has said that based on the results of a sophisticated risk analysis by RBI staff, the board of the central bank had decided over the last three years that the an equity position (including reserves) of around Rs 10 lakh crore was adequate.

The government, on the other hand, reckons there is nothing special about the composition of the RBI's assets, and the risk to the Indian central bank is significantly less compared to its peers. It does seem like the Ministry may be working on a benchmark to compare the RBI and other central banks. Chief Economic Advisor Arvind Subramanian has in the past made out a case for utilising the RBI's reserves to provide capital to state-owned banks. Rajan has, however, argued against the transfer of a special dividend to the government over and above the surplus — it just amounts to putting back into the system the money the RBI made from it, he has said.

"So if the RBI were to pay a special dividend to the government, it would have to

create additional permanent reserves or print more money. And to accommodate any special dividend, the RBI will have to withdraw an equivalent amount of money from the public by selling government bonds in its portfolio," Rajan has written in his book.



In his book *Advice & Dissent: My Life in Public Service*, former RBI Governor Y V Reddy narrated his interaction with Jaswant Singh, the Finance Minister in 2003–04, on the cost of adding to India's foreign exchange reserves.

This cost is basically when more foreign funds flow in, and the RBI mops it up. As foreign capital comes in, the central bank buys dollars and releases rupees which fuels liquidity, and could stoke inflation. To lower that impact and reduce liquidity, the central bank sells government bonds from its portfolio, or issues what are called "market stabilisation" bills or bonds, whose interest burden is borne by the government.

The issue was who would bear the cost. If the government did, it would add to its borrowings. If the RBI did it, its balance sheet

would turn from surplus to deficit.

"We can have both the RBI's and government's balance sheets showing deficit, or only the government's which is already in the red. It is good to make a central bank balance sheet a healthy one. It can serve the government better," Reddy told Jaswant Singh. The Minister responded by saying, "I will do nothing in any way that undermines our central bank. I want our central bank to be strong. It should command respect. We will approve your proposal."

The RBI's approach on bolstering its reserves may be guided by a desire to ensure, to the extent possible, that it does not have to approach the government — its owner — for capital at any time. Strengthening its balance sheet in preparation for a black swan event could be its way of protecting its independence from the government. It will be interesting now to see how the arguments progress, and which view prevails finally. With the accounts for the year having been finalised and adopted, it would be extraordinary if the central bank approves a payout over and above the surplus.

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The Indian EXPRESS

FOUNDED BY

RAMNATH GOENKA

BECAUSE THE TRUTH INVOLVES US ALL

From silence to speech

Those who want to silence dissent are trying to force people into making the reverse journey



SHASHI DESHPANDE

SOLUTION IS ELSEWHERE

Apex court does well to demand accountability for cow vigilantism. But curbing the crime will require political will

IT IS HEARTENING that a Chief Justice of India-led bench of the Supreme Court has said, unequivocally, that cow vigilantism “must stop”. It is reassuring that the apex court has raised the issue of responsibility, not just for taking action after the crime has been committed but also for its prevention. From J&K to Maharashtra, Rajasthan to Assam, vigilante mobs have been emboldened by the abdications of those in power and authority, and the general climate of impunity, to target minorities and the vulnerable in the name of the cow. The SC’s firm intervention serves as a much-needed call for accountability for a crime that shames us all. Yet, having said that, the SC’s specific prescription — it has directed all state governments to appoint a senior police officer as the nodal officer in each district to deal with these cases, and asked chief secretaries and DGPs to file status reports on action taken to prevent them — raises questions.

It is evident that states, primarily responsible for law and order, need to be spurred to take action against groups that are challenging government’s writ. The case of Mohammad Akhlaq, whose lynching in Dadri, UP, in September 2015, triggered by suspicions that he was storing beef, drew the nation’s attention to the new, brutal phenomenon that has been chillingly mimicked in different states since, is illustrative: Two years later, charges are yet to be framed against the accused in the local fast track court. But is the appointing of a nodal officer in every district, only for dealing with cow vigilantism, the most effective way forward? How and on what basis will cases of violence in the name of the cow be separated and prioritised from those that involve, say, communal violence? The question is, essentially: Is the judiciary, once again, going beyond enunciating the high judicial principle and treading into matters of implementation, a domain it is ill-equipped for? While the SC bench refused to accede to the petitioners’ plea to ask the Centre to direct the states under Article 256 of the Constitution, which could have invited accusations of encroachment of states’ rights, it could itself be veering into the administrator’s turf against the spirit of the separation of powers. The court could also be accused of tokenism. Its directive does not address the systemic problems of a grossly under-resourced police force, subject to political control. Its own historic judgement on police reform in the famous Prakash Singh case, more than a decade ago, still awaits implementation.

The fact also is that the recurring violence in the name of the cow is not just a law and order problem. It draws upon a politics of brute majoritarianism, of minority-baiting, bigotry and hate. Such violence is also being emboldened on the ground because its perpetrators invoke the ideology of the ruling Sangh Parivar. Prime Minister Narendra Modi has spoken against cow vigilantism, but until he can ensure that his message is heeded by his own party and government, cow vigilantism will continue to take its terrible toll.

STAGE FRIGHTS

Mamata Banerjee lets down her own, and the Opposition’s, cause by playing tit for tat politics with the BJP

TWO EVENTS IN West Bengal, where BJP national president Amit Shah and RSS chief Mohan Bhagwat were the star attractions, have been cancelled. Bhagwat was to deliver the keynote address at the popular Mahajati Sadan in Kolkata, at an event commemorating Sister Nivedita’s 150th birth anniversary, but the booking was withdrawn by the authorities on the plea of repairs. Shah was to preside over a seminar at the state capital’s biggest venue, the Netaji Indoor Stadium, and his party was told to put in a formal application. When it was duly filed, the BJP was apparently told that the stadium was booked outright. Given her declared antipathy to the right, the hand of state chief minister Mamata Banerjee is not ruled out by the BJP and RSS.

To be sure, Banerjee was hit hard when the CBI filed chargesheets against almost the entire top leadership of her party over the Narada scam, and had threatened to jail BJP leaders in retaliation. Besides, Amit Shah has promoted a look east policy as part of the BJP’s preparation for the general elections in 2019, and the party’s presence in West Bengal has been growing. The most visible sign was aggressive Ram Navami celebrations, a novelty in Bengal’s cultural landscape. The BJP’s strategy takes advantage of Banerjee’s industrious cultivation of the Muslim vote, and has forced her to take evasive action by visiting the Puri temple and celebrating Hanuman, even as Trinamool Congress workers have joined in the Ram Navami game. Both sides in the contest for West Bengal appear willing to go right down to the wire.

But in getting down and dirty, Banerjee, who brought the Left low in West Bengal, may be doing a disservice not just to the rules of the game, but also to her own cause. Nitish Kumar’s absorption into the NDA alliance has left a void in the Opposition at the national level. However, to be a credible candidate for the role, which requires the width of view and the statesmanship to get divergent regional parties and interest groups with all their separate compulsions and contradictions to agree, she must rise above the pettiness which is seen to have typified West Bengal politics in recent years. The impression that she is denying the political right a voice in Kolkata by giving them stage frights, so to speak, cannot be a compelling credential to take to the national level.

GEORGE SMILEY RETURNS

John Le Carré’s greatest character is back. The quiet spy is worth the wait

IN ANGLo-SAXON FICTION, there are broadly two archetypes of the spy. The first, more popular one, is typified by Bond, James Bond: An entitled, violent, womanising alpha male, often at odds with the bureaucrats in charge, whose sheer physicality is a force for “good”. Then there’s George Smiley. The most enduring character from John Le Carré’s novels set in the Cold War, Smiley is a more subtle, layered character — a confessor, a “nerd”, a cuckold and a bureaucrat — and he arrives at patriotism via a much more arduous route, through the moral compromises that are the essence of espionage. Today, when international relations seem to be coming full circle since the fall of the Berlin Wall, Smiley is back in Le Carré’s latest work, *A Legacy of Spies*.

The appeal of Le Carré’s work, particularly the books set in the Cold War, lies in the contrast between the starkly ideological nature of the conflict — two grand narratives competing for the world — and the many shades of grey for those fighting at its frontlines. In the *Karla* trilogy, Smiley battles his eponymous Soviet nemesis, hunting moles and double-agents, and planting them in return. But there is more to Smiley (and all of Le Carré’s work) than the spy games. There are critiques of the upper classes that occupy the civil services, of the graded loyalties to friends and country and the hypocrisies of world politics.

The return of Smiley can go one of two ways for arguably the finest writer of spy thrillers. Already middle-aged when he first appeared, the spymaster could appear anachronistic in a time of technology, and a post-ideological, post-truth world. Or, as is more likely given Le Carré’s skill, Smiley will appear as memory and inject a dose of understanding and subtlety, without descending to maudlin nostalgia. He will hide in the shadows, rather than loom large like a great hero charging to the rescue of the Western order. Either way, if James Bond still thrives, there is surely room for the quiet spy.

TO HEAR THE news of Gauri Lankesh’s death was like watching the replay of a movie I had seen before. Men came on a motorbike, shot her and then vanished. No one saw them. M.M. Kalburgi’s murder was eerily similar. There, too, the men came on a motorbike and, their job done, vanished. Nobody saw them. Kalburgi was a teacher and scholar, Gauri a journalist and activist, but they had this in common: They believed in speaking what they considered was the truth. It is now two years since Kalburgi’s death, but the men remain untraced. Now, once again there is a killing, once again the protests, the candle-lit vigils, the banners, the placards. Once again, the government promises an investigation, a search for the killers, but can we believe them? Is Gauri’s murder also going to remain an unsolved case?

When a murder takes place, the priority is obviously finding the killer. But perhaps in Gauri’s case, as in Kalburgi’s, even if the killers are found, it may provide only a partial answer to the question who. The killers in these cases, and in the earlier two cases of Narendra Dabholkar and Govind Pansare, were obviously professional assassins. Mercenaries, experienced in killing. Gauri’s killers came in the dark and vanished like ghosts. Why was Gauri killed is the next question.

All political parties have condemned the murder, all of them have expressed their shock. The Congress government even gave her a state funeral! There are conflicting theories doing the rounds, red herrings are dragged in. Kalburgi’s death was called the result of a property dispute by the investigating police and some politicians, the Naxalites hinted at in Gauri’s death. Protesting on Gauri’s behalf seems like shadow boxing. Whom are we fighting? The murder seems to be surrounded by a dark fog of confusion. Is there

a power behind the curtain operating the strings, making the moves? Or is that, too, a chimera?

The one question that urgently demands an answer is: Are we now living in a country where people are killed because of their ideology, their beliefs? Are we living in a country where dissent is silenced by a bullet? Two years ago, there was a protest in India which began with writers and went on to embrace scientists, film-makers, social scientists, teachers and many others. This protest erupted after the killing of a man on the suspicion that he had eaten beef and because of the deaths of Dabholkar, Pansare and Kalburgi. In spite of the attempts of the government and its followers to trivialise and sully the issue, it was one of the most heartening movements of recent times, because the protestors had no political leanings and no agenda of their own — except to reassert the idea of India as a country of multiplicities, a country where each citizen has the right to live life the way she/he wants. Instead, we now have an idea of a country where one religion, one way of living, one culture, is the privileged one.

Gauri was a vehement anti-Hindutva person. She was hated for her views, she was called a Naxal sympathiser, a Hindu hater. But however strong her views, she posed no threat to those she opposed. Nor were the three men killed earlier any threat. And yet all of them were chosen targets, their murders well-planned. There is only one explanation for this; Gauri and the others were killed to send a message to all those who oppose this idea of India. The message is: If you dissent, we are waiting for you. To kill some and instil fears in many is a way of silencing people.

If you are not with us you are against us, President George W. Bush told the world after 9/11. This is exactly the way it is in India today. If you don’t agree with us, you are the

enemy. There are footsoldiers who help by spewing venom on the social networking sites. Gauri, too, was attacked in the vilest terms. The abuses, the kind of things being said about her as a woman, the threats of gang rape, the rejoicing over her death — all these come out of sick minds.

Today, we are being told what being a patriot or a nationalist means. Those of us who have lived in this country all our lives and are tied to it by an umbilical cord are bewildered and angry. Do we need anyone to tell us how to love our country? Perhaps one of the things these deaths have told us is that one of the best ways of loving our country is refusing to be afraid, refusing to be silenced.

“The only way to keep ourselves free is to speak, not to let ourselves be silenced either by pernicious laws or by mob screaming” — the words of an American crime writer, Sara Paretsky, in an essay written after 9/11. She speaks of “every writer’s difficult journey” as a “movement from silence to speech”. Those who want to silence dissent are trying to force people into making the reverse journey — from speech to silence. But for a writer, for a journalist, silence is also death. Perumal Murugan knew it, which is why he announced the death of Perumal Murugan the writer when he decided to stop writing. Whoever they are, those who are trying to silence voices forget one thing: Silence one voice and a hundred, a thousand voices will take its place.

Gauri Lankesh is dead. She was a brave woman who tried to live a life according to her beliefs and convictions. Perhaps the protest meetings, the candle-lit vigils, the banners, the placards may be useful in making people aware of the person who died, of why the person died. And of how important it is to speak, to refuse to be afraid.

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ALOK KUMAR VERMA

COVERING THE TRACKS

Last mile works for maintenance are essential for safe, fast rail travel

WITH THE rising incidence of accidents on the Indian Railways (IR), a question should be asked: Why is it not able to safely carry trains at 100 to 130 km/hr when railways elsewhere are carrying trains at a much higher speeds of 160 to 200 km/hr with the infrastructure and rolling stock based on the same technologies as IR’s?

In rail transport worldwide, raising the speed of trains while also reducing the speed differential between freight and passenger trains have been the key to increasing capacity and improving safety. Notable examples are the railway systems in Western Europe, North America and China.

The recent accident near Khatauli station on August 19, which resulted in the death of 23 passengers, is a reminder of the dangers of the excessive over-utilisation of the lines. The section where the accident occurred carries 35 trains a day against a capacity of 25 trains. Reportedly, block (temporary suspension of traffic) for carrying out repairs to a broken rail was refused. The maintenance staff started the repairs just when the train approached the site at full speed and derailed.

According to the latest data, utilisation exceeds the capacity on 65 per cent of busy routes. It is 120 per cent to 150 per cent on 32 per cent of the routes, and utilisation exceeds 150 per cent on 9 per cent of the routes. For optimal performance, utilisation should be 80 to 90 per cent of the capacity. Over-utilisation is leaving little time for

safety inspections and essential maintenance of track and other infrastructure as well as the rolling stock. The focus of IR has shifted to daily fire-fighting, to somehow keep trains running, leading to all sorts of maladies like inter-departmental tussles and low morale. Arguably, IR has one of the highest incidences of accidents due to material, equipment and human failures.

From 1985-2000, IR acquired locomotives, coaches and wagons and carried out modernisation and upgradation of track and other infrastructure, with massive infusion of funds. But it kept deferring the last mile works (which include the easing of sharp curves, strengthening some bridges, improving track geometry to tighter tolerances, cab signalling etc.) that are needed to unlock the full potential of an upgraded network.

The last mile works are tough to execute, requiring immaculate planning and precise execution. Blocks will be regularly needed for which some services may have to be diverted or curtailed temporarily. Services that can be catered to by road transport, like short distance passenger trains, shall have to be closed altogether.

A comparison with the Chinese Railway (CR) is illustrative of the magnitude of IR’s failure. Till the 1990s, the speed of trains on CR was limited to 100 to 120 km/hr. But in the 10 years (1997-2007), it undertook a “speed-up” campaign in six rounds and raised speeds to 160 km/hr on 14,000 km

and to 200 km/hr on 5,370 km route-lengths. Simultaneously, the speed of freight trains was raised to 100 to 120 km/hr. With the streamlining traffic flow, line capacity was increased by 60 to 70 per cent.

As its capacity stagnated right through 2000-10, IR started overloading wagons. In another knee-jerk response, IR latched on to the idea of building two Dedicated Freight Corridors (DFCs) with three more to come in future. DFCs have been built by some railways outside India for the limited purpose of carrying heavy minerals from mines. IR also began pushing for building High-Speed Rail (HSR) lines. HSR lines are too costly and suited for countries with very high per capita income. When the plan to build DFCs was announced, E. Sreedharan, India’s best-known railway engineer, had questioned the wisdom of building them. He has also said that India can wait for HSR.

Indian Railways has remained stuck at 130 km/hr since 1969, while congestion on the trunk routes sky-rocketed. It’s time to shift focus to the core network that carries more than 80 per cent of the total traffic. The last mile works for upgrading the trunk routes which were repeatedly deferred should be undertaken on a priority basis so that the entire nation can realise the benefits of faster and safer travel. Else, safety on Indian Railway will only worsen.

The writer retired from India Railway Service of Engineers (IRSE) in 2016

SEPTEMBER 8, 1977, FORTY YEARS AGO

SHAH COMMISSION THE EVIDENCE COLLECTED by the Shah Commission showing how Indira Gandhi misused the official media to further her election prospects in March this year is strong enough to have Mrs Gandhi and several of her Congress minions disqualified from electoral politics for six years, according to sources in the Shah Commission. Misuse of government-controlled media by the Congress government before and during the March Lok Sabha poll will be one of the first cases to be taken up by the Shah Commission for public hearing later this month. The Commission has received affidavits from the heads of government media units, *Samachar*, and several newspaper editors detailing how the government threatened and browbeat

them into playing up Congress election prospects even after the Emergency was relaxed and elections announced.

US-CHINA RELATIONS

CHINESE VICE-PREMIER DENG Xiaoping said efforts to normalise diplomatic relations between China and the US suffered a setback during the visit of the US Secretary of State, Cyrus Vance. In an interview with the Associated Press, Deng said the Vance discussions represented a retreat from proposals advanced by the former president, Gerald Ford, and the former secretary of state, Henry Kissinger. Ford promised in December 1975 that if re-elected he would break diplomatic relations with Taiwan and establish them with Peking. Vance discussed the setting up

of a US liaison mission in Taiwan and a full diplomatic mission in Peking, but the Chinese rejected that. Though the Chinese regard Taiwan as an internal problem that permits no foreign interference, they would take into consideration the special conditions prevailing in Taiwan in trying to solve the problem with the US.

FOUNTAIN COLLAPSE

THE RED SANDSTONE fountain, which stands to the left of Vijay Chowk, collapsed in the national capital. The tall projection and the bowl developed cracks and broke into pieces. The fountain, one of a twin, was a New Delhi landmark being part of the Central Secretariat Complex, built by Herbert Baker in the 1920s.

15 THE IDEAS PAGE

An India where knowledge is free

Let's celebrate progress made by literacy programmes, learn from their success and failures, and chalk out ways to reach new learners



M. VENKAIHAH NAIDU

AS INDIA JOINS the rest of the world in celebrating the 51st International Literacy Day today, I would like to emphasise the important role of literacy in the development architecture of all countries and its crucial role as a development accelerator. It is a day when we recollect our freedom struggle and the words of Mahatma Gandhi who called mass illiteracy a sin and a shame that must be eradicated. It is a day when we reflect on our progress over the last 70 years and evaluate our progress in achieving the goals put forth eloquently by Jawaharlal Nehru on the midnight of August 15, 1947: "To bring freedom and opportunity to the common man, to create social, economic and political institutions which will ensure justice and fullness of life to every man and woman".

As we take stock of our achievements over the years, we can look back with pride at the many milestones we have crossed. Only 18 per cent of our population could read and write in 1947. Today, nearly 74 per cent of our population has basic literacy skills. Over 95 per cent of the country's children are in school and nearly 86 per cent of young people are functionally literate. This is not a small achievement. However, we have to draw inspiration from our past successes and move forward.

We cannot ignore the fact that today nearly 35 crore youth and adults are outside the world of literates and are unable to participate effectively in the development of the country. About 40 per cent of our schoolchildren do not acquire literacy skills with satisfactory proficiency even after completing elementary education. We have a formidable challenge that needs to be recognised and systematically addressed.

We have an opportunity today to celebrate our collective achievements. Many individuals and institutions have contributed to this national effort. The enlightened rulers of Travancore and Baroda expanded education opportunities. Inspired by Mahatma Gandhi, Welthy Fisher and Frank Laubach set up the Literacy House in Lucknow in 1953. There were active campaigns for adult literacy like the Grama Shikshan Mohim in 1959. Excellent momentum was generated through the 1990s by the Government of India's National Literacy Mission.

Prime Minister Narendra Modi reiterated the current government's credo at the BRICS conference in Xiamen, China on September 5. "The bedrock of our development agenda lies in the notion of Sabka Saath, Sabka Vikas," he said. The country is embarking on a faster development trajectory to shape a new India in the next five years. Globally, we have committed to the implementation of the 2030 Agenda for Sustainable Development. The agenda envisages a "world with universal literacy". Target 4.6 of the Sustainable Development Goals is: "By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy".

If India has to ensure that all youth, and a substantial proportion of adults, acquire these skills, we may need to review our past strategies in light of today's requirements. We need to learn from successful examples from within the country and outside it. We may have to chalk out new ways to reach out



Subrata Dhar

to learners who have not been reached till now. This has to be a collective effort: The government has to lead the process but the civil society and the private sector should also play key roles.

I recall the words of the Telugu poet Gurajada Apparao, "Deshamante matti kaadody, deshamante manushulo" (The country is not the land under our feet but it is the people who live on the land). The government of India is committed to inclusive growth. That is the underlying guiding principle of "sabka vikas". Literacy is the first step towards building a participatory, vibrant and more inclusive democracy. It helps individuals to access and exercise the various rights and entitlements provided to them under the Constitution. Problems like poverty, infant mortality, population growth and gender inequality are better resolved in a literate society. Literacy enables individuals to access economic, political and social benefits. In India, literacy can play an important role in empowering people as well as improving their quality of life — especially of women and those belonging to the disadvantaged groups of society.

We should continue to strive for universal literacy through the two-pronged approach that we have been following. First, we must improve the quality of pre-primary and school education to ensure that all children graduating from school have the necessary literacy skills. Second, we must provide opportunities for learning to those who have never been to a school or have dropped out, and also to the young people and adults who need to acquire basic skills to expand their livelihood opportunities.

The Saakshar Bharat Programme and the Sarva Shiksha Abhiyan are the government's key policy instruments in the realm of improving literacy. The Saakshar Bharat Programme focuses primarily on rural areas in low-female literacy districts. The initiative has helped in the establishment of an institutional framework that promotes adult education centres up to the gram panchayat level. I am glad that the focus has been on female literacy because of its potential multiplier effects, including better health outcomes and improvement of nutritional status.

Today, more than a crore adult learners appear for the bi-annual Learners Assessment Tests held across the country. Around 6.66 crore learners have passed the

Over 95 per cent of the country's children are in school and nearly 86 per cent of young people are functionally literate. This is not a small achievement. However, we have to draw inspiration from our past successes and move forward. We cannot ignore the fact that today nearly 35 crore youth and adults are outside the literate world and therefore are unable to participate effectively in the development of the country. About 40 per cent of our schoolchildren do not acquire literacy skills with satisfactory proficiency even after completing elementary education. We have a formidable challenge that needs to be recognised and systematically addressed.

assessment test conducted by the National Institute of Open Schooling up to March 2017, 70 per cent of them are women. The National Literacy Mission Authority (NLMA) is not only imparting basic literacy to adult learners but has also forged partnerships with various agencies to link literacy with other dimensions of socio-economic development like electoral, financial and legal literacy. Its initiatives pertain primarily to rural women. A special drive was undertaken under Saakshar Bharat districts to mobilise more than one crore learners to open and operate bank accounts under the Pradhan Mantri Jan Dhan Yojana. The NLMA's state partners, such as the state literacy mission authorities (SLMAs), state resource centres and jan shiksha sansthanas have motivated over one crore beneficiaries to avail benefits of the Pradhan Mantri Suraksha Bima Yojana. The authority has also tried to align the Saakshar Bharat Programme with the Saansad Adarsh Gram Yojana.

Literacy programmes can enhance their value if they are creatively linked to the other initiatives of the government like the Swachh Bharat, Mission, Pradhan Mantri Ujjawala Yojana, Beti Bachao Beti Padhao, Digital India Mission and Skill India Mission. The Human Resource Development Ministry has decided to redesign the Saakshar Bharat programme keeping in view the country's requirements in the next five years. It is also heartening that in the new variant of the Saakshar Bharat Programme, school and college students are likely to be involved in teaching their illiterate parents, grandparents and neighbours.

We must use technology to make the literacy programmes more effective. Digital learning materials can address the diverse learning needs of different age groups more effectively. Literacy can be made more meaningful if it is linked to the daily lives of the learners. Community learning centres can become the hubs of imparting literacy and community empowerment.

Let us create a new India built on the base of a literate, educated, empowered population. Let us realise that heaven of freedom that Rabindranath Tagore spoke about when he said, "Where the mind is without fear and the head is held high, where knowledge is free; where the world has not been broken up into fragments by narrow domestic walls".

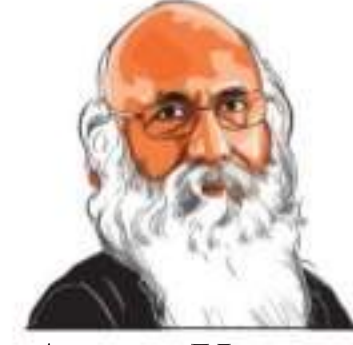
The writer is Vice President of India

WHAT THE OTHERS SAY

"[Bipin] Rawat has such a big mouth that he could ignite the hostile atmosphere between Beijing and New Delhi."
—GLOBAL TIMES, CHINA

Calling black white

There is a lot of pain, no visible gain, from demonetisation. No amount of spin can mask the fact that it has dented the economy



ARUN KUMAR

DEMONETISATION HAS LED to much pain. Prime Minister Narendra Modi had promised that the pain would last only for 50 days, but would benefit the country enormously in the future. Invoking the image of soldiers standing at the frontier, it was said, civilians should stand in queues at the banks for a noble cause. People bought this line more or less despite the hardships, including many deaths. Nearly 10 months down the line, where does the nation stand now since the RBI has admitted that almost 99 per cent of the Rs 15.44 lakh crore of the demonetised currency returned to its coffers. In an earlier piece ('An embarrassment of riches' IE, August 1), I had mentioned that by January 13, 2017, 98.8 per cent of the demonetised notes were back.

The proponents of demonetisation have given a new spin. They portray the return of the notes as a success. They claim that those with black money were forced to deposit their illegal hoards in the banks and they can now be caught by the tax department and made to pay additional taxes. This, the argument goes, would expand the tax base. Further, they argue that the idle black money is now in the banks and that would lead to efficiency because the cash-to-GDP ratio would decline. They believe there is a formalisation of the informal economy and that the economy is moving towards a less cash economy. These are the long-term benefits even if there was short-term pain.

Who suffered and who gained? Are these the same set of people? A large number of those who never generated any black money were put to tremendous hardship. They lost jobs and had to stand in queues for days to withdraw their own money. Trade and businesses suffered. People were forced to return to their villages because they lost jobs in the cities. Routine banking could not be done and the aged faced enormous hardship. In contrast, the well-off never stood in queues because they had customer relations managers who helped them deposit and withdraw cash. Some of the money deposited may have been black, but it is hard to tell whether the currency was black or white since it has the same colour.

The argument that those who deposited their black money will henceforth be in the tax net is incorrect. It is unclear how many new tax payers have been discovered. The finance minister said there were 91 lakh new tax payers in 2016-17. The Central Board of Taxes has given the figure as 56 lakh and this is the figure quoted by the prime minister in his Independence Day speech. But the

Economic Survey says the number increased post demonetisation by 5.4 lakh. The income declared in these tax returns is Rs 10,587 crore so the additional tax collection would be Rs 3,500 crore or 0.3 per cent of the total direct tax collection. Is this the predicted significant enhancement of the tax base?

It is also said that 18 lakh notices have been sent to those entities which deposited large sums of money in their bank accounts. Businesses have large cash in hand and that is not black. So, it would have to be established that the money deposited was from black incomes. The income tax department does not have the capacity to audit more than a few lakh entities a year. So it is not going to be able to tackle whichever is the correct figure — 91 lakh or 56 lakh or 18 lakh or 5.4 lakh entities. It will take years to collect additional taxes given that there would be litigation. The income tax department wins a tiny fraction of the cases.

Black cash is less than 1 per cent of the black wealth, so demonetisation was at best capable of unearthing just this much. But, the actual effect is far less than that because 99 per cent of that one per cent is back. So, demonetisation cannot make a dent on the black economy and its failure was a foregone conclusion.

What does it mean when it is claimed money that was outside has come into the banks or that it has got formalised? Currency in circulation is supposed to move in the economy and not sit in the banks. It also circulates in the informal economy from where it goes back and forth into the banks. Money coming to the banks is lent out to earn a return and not meant to sit idle. Unfortunately, credit off-take from banks is at a historic low because demand is short. It even turned negative for the first time in July. Once the economy picks up, the demand for cash will rise and credit would expand.

Demonetisation dented the economy severely and it has not yet recovered because capacity utilisation fell and that led to a decline in investment. The unorganised sector has declined by anything from 60 to 80 per cent, according to surveys from that period, and the rate of growth of the economy turned negative. GST has aggravated that effect because it has hit the unorganised sector hard. Thus, the economy, especially its unorganised component, has faced two shocks within six months of each other.

More digitisation, less cash economy, expansion of tax base via more raids, closing down shell companies and catching benami property could have been implemented independent of demonetisation and the huge shock to the economy. The government admits as much when it says demonetisation was only one of the steps in the fight against the black economy. If so, why pronounce that demonetisation is a success on the basis of outcomes achieved through other steps? Policy success, clearly, is being claimed by invoking afterthoughts.

The writer is Malcolm Adiseshiah Chair Professor, Institute of Social Sciences

LETTER TO THE EDITOR

CHECK THE MOB

THIS IS WITH reference to the articles, 'Truth without fear or favour', 'Asking the wrong question' and 'Death of a journalist', (IE, September 7). Free expression, that key ingredient of democracy, is today embattled in India. Lynching by cow vigilantes has become common. Objective journalism is the cornerstone of democracy and people should force the government to take steps to safeguard it.

Ajay Corriea, Vasai

ONE AGAINST TERROR

THIS REFERS TO the editorial 'Moving past Doklam' (IE, September 6). It is heartening that the Chinese President Xi Jinping and Prime Minister Narendra Modi have resolved to put petty feuds behind and focus on bigger issues. Cooperation between China and India in matters of economy would make both nations' peoples progress towards prosperity. Terrorism is a common adversary of all BRICS countries and must be fought collectively. Episodes like the one at Doklam strain relations between the two countries and must be avoided.

Subhash Vaid, Noida

JUST REWARD

THIS REFERS TO the editorial, 'Madam Raksha Mantri' (IE, September 4). The promotion of Nirjala Sitharaman, Piyush Goyal, Dharmendra Pradhan and Mukhtar Abbas Naqvi in the cabinet reshuffle proves that performance pays. The four former bureaucrats who have been achievers in their carriers are expected to be so in their new avatar as well. This may not be the last expansion of the Cabinet before the 2019 election. The JD(U) and the prospective new en-

LETTER OF THE WEEK AWARD

To encourage quality reader intervention, The Indian Express offers the Letter of the Week award. The letter adjudged the best for the week is published every Saturday. Letters may be e-mailed to editpage@expressindia.com or sent to The Indian Express, B-1/B, Sector 10, Noida-UP 201301. Letter writers should mention their postal address and phone number.

THE WINNER RECEIVES SELECT EXPRESS PUBLICATIONS

trant in the NDA, AIADMK, will have to be accommodated before that for which berths are still available

M.C. Joshi, Lucknow

UNWELCOME GUESTS

THIS REFERS TO the editorial, 'Welcome the refugee' (IE, September 7). India accepted the Rohingya refugees with an understanding that the community is "most persecuted" (as declared by UN). But our investigation agencies found that people from this community have links with extremist groups in Myanmar. Moreover, we are facing the problem of jobless growth.

Juhi Soni, Delhi

THE URDU PRESS

THE CABINET RESHUFFLE

COMMENTING IN A lighter vein on the recent reshuffle in the Union Council of Ministers, editor of *Inquilab*, Shakeel Shamsi, in his column on September 4, writes: "Usually, BJP leaders are particular about choosing auspicious time and other details for any event. But this time, Prime Minister Narendra Modi, ignoring superstition, opted for the swearing in on September 3, of 13 Ministers."

He adds: "The most surprising decision taken by Modi and Shah is the appointment of Nirjala Sitharaman as Defence Minister. By putting the responsibility of the defence of the country on the strong shoulders of a woman, the PM has given great encouragement to women. We hope that the problems of the armed forces would definitely be solved during her tenure... Another unexpected feature of the reshuffle is the non-inclusion of any JD(U) representative in the cabinet."

Rashtriya Sahara, in its editorial, writes: "Apart from winning the support of women by taking a step towards empowering them, a signal has also been given that in the days to come the BJP would concentrate its full attention on South India."

Roznama Khabrein, in its editorial on

September 5 writes: "Very importantly, the prime minister has placed a greater trust in bureaucrats than in elected representatives, adding four new bureaucrats to those already in the government."

Sahafat, on the same day, writes: "It remains to be seen what former senior bureaucrats, who have been allocated work different from their fields of experience, are able to achieve in their new positions."

PRIVACY JUDGMENT

SAHAFAT, IN ITS editorial on August 26, writes: "The judgment of the Supreme Court (SC) declaring privacy a fundamental right is historic and would have far reaching effects... Now the government has no right to find out or share any information about our personal life... But, even after the judgment, many questions remain unanswered. Some experts say that this judgement has given a shock to the government's process of surveillance and now any citizen can refuse to get an Aadhaar card made. It seems that the tug of war between the government and those opposed to Aadhaar mandatory may continue."

Roznama Khabrein, in its editorial on the same day, writes: "With the SC's judge-

ment, we can once again celebrate our independence. It has given a rude shock to fascist forces... Privacy is faced with threats not only from the government, but also from non-governmental elements and the court has asked the government to try and ensure that a system is evolved whereby data is firmly protected... But there is another angle to the issue. If anyone has committed a crime, he cannot refuse to give information behind the veil of privacy... The judgment is like a guideline. Now its contours have to be examined and only then will it take proper shape."

Aakar Patel, in his column in *Rashtriya Sahara* on August 27, recalled the prime minister's opposition to Aadhaar during his election campaign in April 2014 saying that he would put an end to the Aadhaar card after coming to power. "Should the PM not explain now why has he gone back on his stand?"

POLITICS AND THE BABA

RASHTRIVYA SAHARA, IN its editorial on August 29, writes: "With the CBI court awarding a 20-year sentence to (Baba) Gurmeet Singh for his sexual offence 15 years ago, he has undoubtedly been brought to justice. But who will be

punished for the deaths of the 38 persons who were victims of violence by his supporters after the conviction of the Baba on August 25? Who will compensate the damages to the offices and properties of the government?"

The daily *Munsif*, in its editorial on August 28, writes: "M.L. Khattar government in Haryana had to face severe criticism from the Punjab and Haryana High Court which said about the state government surrendered before the supporters of Dera Sacha Sauda due to political priorities... The political support behind the so-called Babas plays a vital role in their extraordinary popularity. This support by political parties is with the intention of using the crores of bhakts (devotees) of the Babas as vote banks. In the last parliamentary elections, many Babas played an important role in the BJP's victory. Amit Shah had met Gurmeet Ram Rahim Singh and sought his blessings for the elections in Haryana and Gujarat."

Sahafat, in its editorial on August 29, writes: "If there was a non-BJP government in Haryana today, Narendra Modi would have got it dismissed and enforced President's Rule there."

Compiled by Seema Chishty