

# 12 WHO·WHAT·WHY·WHEN·WHERE

## WHO

### Jacob Rees-Mogg Conservative hopeful

Last week, Jacob Rees-Mogg, a bespectacled grey-haired parliamentarian with a cut-glass accent, appeared on a popular morning television programme to expound his views, which included opposing same sex marriage and abortion under absolutely any circumstances (including rape). It was far from the first time that Catholic Rees-Mogg had expressed strongly conservative views. Nevertheless, his comments touched a nerve nationally, coming as a poll by Conservative Home put him as the party members' favourite to become their next leader.

With 22% of the vote, it put him comfortably ahead of David Davis, the Minister in charge of Brexit, and Boris Johnson, the Foreign Secretary, who had till recently been the party's favoured eccentric.

#### What is his pull?

After the June election smashed the Conservative's comfortable majority, weakening Prime Minister Theresa May, the unofficial battle to take over as leader commenced swiftly, taking an

unexpected turn amid disillusionment with party stalwarts, especially among young Conservatives. The ultra-proper 48-year-old Mr. Rees-Mogg, rarely seen out of a double breasted suit and tie and carefully combed hair, has been a member of Parliament since 2010, as a vocal backbencher, regularly voting against his party's official line when it diverged from his own conservative politics.

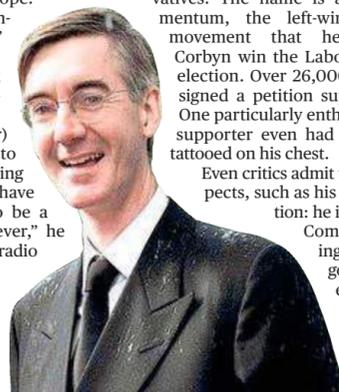
#### Has the 'outsider' tag helped?

Though his origins are hardly unusual for a Conservative politician – he is the son of a wealthy, former editor of *The Times*, educated at Eton and Oxford, with a career in finance – he has managed to build a significant following within the party, particularly among those on the right who want it to remain firmly socially and politically conservative. To them, Mr. Rees-Mogg has been just the ticket: in addition to opposing anything around the smoking ban or equal gay rights, he has stood against measures to promote equality and human rights and environmental and safety protections. Regulations that

were "good enough for India" could be good enough for Britain, Mr. Rees-Mogg, an ardent Brexiteer, said earlier this year. In a discussion about trade deals with other countries following Brexit, he said: "We could, if we wanted, accept emissions from India, America and Europe. There would be no contradiction with that." Even his personal life seems to fit: he has six children (the most recent one, Sixtus, was born earlier this year) and has admitted to never ever having changed a nappy. "I have made no pretence to be a modern man at all, ever," he told Nigel Farage on a radio show recently.

#### Who are his backers?

His politics has won him gushing support from alt-right media



such as Breitbart, which has compared him to Churchill and applauded his "Christian beliefs, conservative values and Euroscepticism." In June, the MoggMomentum campaign, touting him as the answer to the Conservative's leadership crisis, was launched by young Conservatives. The name is a nod to Momentum, the left-wing grassroots movement that helped Jeremy Corbyn win the Labour leadership election. Over 26,000 people have signed a petition supporting him. One particularly enthusiastic young supporter even had MoggMomentum tattooed on his chest.

Even critics admit to admiring aspects, such as his flair for elocution: he is known in the Commons for being a particularly good orator, adept at filibustering legislation he disagrees with (in one instance,

he talked out a bill through a lengthy speech which included discussing P.G. Woodhouse's pig the Empress of Blandings). During a debate in 2012, he set the House of Commons record by using the longest word ever used in the House, floccinaucinihilipilification, which means the act of estimating something as worthless. "I could sit and listen to him all day, I disagree with him 99.9% of the time," one Scottish National Party MP recently told *The Guardian*.

#### So could he become PM?

While centrists and those on the left fear that Mr. Rees-Mogg is symptomatic of the rightward shift of the Conservative base, whether his popularity translates into anything in government remains to be seen. He himself has pointed out that no one has ever made it directly from the backbenches to leading the party of government, though telling he has so far refused to rule out taking the baton should he ever be offered it.

VIDYA RAM

## WHAT

### The lowdown on Dera's money trail



**WHAT IS IT?** The guru from Sirsa, Baba Gurmeet Ram Rahim Singh, who is now behind bars, had built an expanding business empire out of his spiritual command over millions of people, especially the poor and backward classes.

Singh pumped in the money that he allegedly collected from devotees into companies, washed black money into white and vice-versa, bought properties and built resorts.

Then he made B-grade movies, gave

cash to his devotees to watch those movies and declared them super-hits. He bought luxury cars, abandoned them, built opulent palaces, educational institutions and underground caves, distributed largesse and votes to politicians.

#### HOW DID IT COME ABOUT?

On August 25, after the CBI court in Panchkula convicted the Dera chief, his followers went on the rampage, claiming more than 30 lives and leaving several hundred injured within a few hours. There was loss of both lives and property. The Punjab and Haryana High Court directed the Punjab and Haryana governments to identify the properties of the Dera Sacha Sauda and submit a list of the same to the court and said the loss to public property would be compensated by those responsible for it.

The Haryana government sanctioned search of the Dera headquarters, and examination of various documents showed a widespread and flourishing

empire of much financial interest.

In the 800-acre premises, officials came across two tunnels, one of which connected the Dera Awas, Singh's official residence, to Sadhvi Niwas, a women's hostel. The other tunnel may have been a kind of escape route from the premises.

The combing operations also found an explosives factory, which primarily made firecrackers, as well as abandoned vehicles, including a Lexus luxury SUV. At the heart of Dera Sacha Sauda is a registered charity, eligible for tax exemption. But behind it lurks a complex financial web, primarily involving three companies – Hakkikat Entertainment, ARZ Unique Enterprises and Samag Enterprises.

These companies are all linked through common directors and shareholders, many of whom are devotees, and share the same addresses.

There are reports of a mystery trail of over ₹51 crore through at least 15 other ghost companies. Hakkikat Entertainment produced Ram Rahim Singh's mu-

sic videos and five movies. Hakkikat's balance sheet shows that the guru's movies were not in the ₹100 crore club as was claimed by his PR team, but were loss-making productions.

ARZ Unique Enterprises owns MSG Resort in Sirsa, while Samag Enterprises brings out *Sach Kahoon*, a mouthpiece for the Dera.

The sect seems to have also adopted plastic currency in local markets. During search operations, officials recovered several plastic coins showing the existence of an illegal and separate monetary system, though limited, in the Dera.

#### WHY DOES IT MATTER?

What complicates the picture is the many financial dealings between the Dera Sacha Sauda and the for-profit companies run by Ram Rahim Singh's devotees. Any investment by non-profit charities in for-profit activities is explicitly banned under the Income Tax Act.

What also raises questions are the

many strange, and unexplained, transactions on the books of the companies that produced movies, published newspapers and ran resorts for the Dera. There are mysterious transactions in unexplained goods and other activities.

Dera Sacha Sauda's case is not an isolated instance. In fact, it has come under scrutiny only because of the criminal activities of Ram Rahim Singh that were bravely reported by a few women and upheld without any fear or favour by a judge.

**WHAT NEXT?** Given the firm judicial pronouncement against Ram Rahim Singh and the public focus on his nefarious activities, it is possible that some action would be taken against the financial misdemeanour too. However, it is also possible that as the public attention wanes away, the Dera could be back to doing what they have been doing all these years. Some sequels cannot be ruled out.

JOSY JOSEPH

## WHY

### were Infosys founder and board at loggerheads?

#### What happened?

■ Allegations and counter-allegations over the \$200 million acquisition of an Israeli firm, Panaya, and the severance package to former chief financial officer Rajiv Bansal culminated in the resignation of Infosys chief executive officer and managing director Vishal Sikka, 50, on August 18. A July 8 letter by co-founder N.R. Narayana Murthy to the board, headed by R. Seshasayee, was leaked to the media on August 17. Mr. Murthy, following complaints, was peeved at salary increases given to Mr. Sikka and Mr. Bansal. He also wanted a report submitted by an independent U.S. agency on allegations of irregularities in the Panaya acquisition to be made public. The board defended the salary increases and refused to make the report public.

Ten days after Mr. Murthy's letter appeared in the media, the board named former Infosys CEO Nandan Nilekani, 62, as its new chairman. Soon after taking over, Mr. Nilekani asked board members to look into Mr. Murthy's allega-

tions on severance pay and the acquisition and submit a report by October.

#### Why did things come to a head?

■ After the letter was leaked, Mr. Murthy said in a statement that his "problem is with governance at Infosys. I believe that the fault lies with the current board," the one headed by Mr. Seshasayee. "If the board had not made inaction its strategy since September 2015 and had ensured proper governance, then the board could have created checks and balances required in any well-run company. That, alas, does not exist today," he said.

He raised questions on why the board had paid a severance pay of ₹23 crore to Mr. Bansal and later refused to divulge details, citing "confidentiality agreement." Mr. Murthy said he had received more than 1,800 emails from employees and investors highlighting the severance pay and governance issues. "If there is no such special secretive competitive data with Mr. Bansal, then



it is clear that the Chair told a blatant lie to the shareholders." There was also an issue of a \$1 million agreement with David Kennedy, general counsel and chief compliance officer, who left the company in January. "Why was a special 12-month severance allowed for Mr. David Kennedy when the norm was just three months in the company," Mr. Murthy asked.

Following a complaint by a whistleblower, he contended that the Infosys board had spent shareholders' money

on hiring expensive lawyers and "obtained a clean chit for themselves from these lawyers."

#### How did the board respond?

■ The then chairman Mr. Seshasayee and his team laid the blame for Mr. Sikka's resignation on Mr. Murthy's table. They said Mr. Murthy's continuous assault was the "primary reason" for the CEO's resignation, "despite strong board support." In an August 18 statement from Infosys, the board said it took "great umbrage" at Mr. Murthy's letter that had been leaked.

The board said it was "profoundly distressed by the unfounded personal attacks" on the management team that were made in anonymous letters and had surfaced in recent months. Infosys, it claimed, had maintained the "highest standards" of corporate governance, and "careful investigations found no merit in the unsubstantiated and anonymous allegations." Any further probe would be a "distraction" for the company, it said.

The management reconstituted the board and made U.B. Pravin Rao interim chief executive officer and managing director reporting to Mr. Sikka, who had been CEO since August 2014.

#### How did it get sorted out?

■ The founders of India's second largest software exporter had the final say. Mr. Nilekani, who spearheaded India's biometric identity programme Aadhaar, and who was the CEO of Infosys from 2002 to 2007, returned to the helm. During his tenure, Infosys' revenue rose from \$500 million to \$2 billion. Mr. Seshasayee, Mr. Sikka, who was serving as executive vice-chairman after he resigned as CEO, and two other directors resigned. Ravi Venkatesan stepped down as co-chairman to continue as an independent director on the board.

Mr. Nilekani said the main task was to resolve differences over corporate governance and "personally ensure Mr. Murthy gets the respect he deserves."

JAY SHANKAR

## WHEN

### 15 September 2017

**Cup of joy:** Pakistan beat the touring World XI in the final T20 match on Friday by 33 runs, winning the Independence Cup 2-1, thrilling fans at the Gaddafi Stadium in Lahore excited by the return of international cricket. Pakistan has hosted only one international series, with Zimbabwe in 2015, since terrorists attacked a bus transporting the Sri Lankan cricket team in 2009. The World XI, coached by Andy Flower and led by South African captain Faf du Plessis, had members from seven nations barring India, which is yet to revive cricketing ties with Pakistan. At least five members of the Pakistan team, including Fakhar Zaman and Shadab Khan, were playing on home soil for the first time. Pakistan Cricket Board chairman Najam Sethi told Reuters: "We are over the moon. The people of Pakistan are delirious. We think that we have opened the door for the return of international cricket." Sri Lanka and West Indies are planning to send teams, Mr. Sethi said. In a first of sorts, the 60,000-strong crowd cheered equally for the home side and the visitors. \*AP, GETTY IMAGES



## WHERE

### In Mumbai, a blasts conviction and after

On September 7, a special Terrorist and Disruptive Activities (Prevention) Act (TADA) court sentenced two to death and gangster Abu Salem to life imprisonment for the Bombay blasts of 1993. Though this may have brought some closure to the victims' families after a long wait – 257 people had died – it's a fact that 27 of the key accused, including the masterminds Dawood Ibrahim and Tiger Memon, are still roaming free.

#### What happened?

In December 1992 and January 1993, Bombay was riven by riots that followed the destruction of the Babri Masjid. When Ibrahim "Tiger" Memon's shop was torched by hooligans, he decided to take revenge with the help of his underworld connections, including the brothers Mohammed and Mustafa Dossa.

They recruited youngsters and, aided by Dawood Ibrahim Kaskar – the gangster who had fled India several years ago, but still controlled a vast empire in the country – and, allegedly, Pakistan's spy agency, Inter-Services Intelligence,

smuggled in explosives and arms through various landing points on the west coast. And on March 10, 1993, 12 bombs ripped through the city.

#### What did the police do?

The breakthrough came just hours after the blasts. Two junior police officers found a van in Worli, filled with machine guns and ammunition. It was traced to Rubina Memon, Tiger's sister-in-law; and the police went to the Memon residence at Mahim in central Bombay, and subsequently, after a chase, arrested Imtiaz Ghavate in Bandra East.

Ghavate's interrogation yielded the names of Tiger and his associates. But by then, he and his family had left India. The special investigation team, under the then Deputy Commissioner of Police Rakesh Maria, with help from intelligence agencies and the CBI, laboured to put the pieces together. They followed leads across the country, interrogating men who had played seemingly insignificant roles in the



conspiracy. Relatives of some of those interrogated accuse the lawmen of using torture to get information. The vital breakthrough came when one of the accused, Badshah Khan (name changed to protect identity of the witness), had a change of heart and surrendered. The information investigators got from him

led to a series of arrests and a long list of those wanted. On November 4, 1993, the Mumbai police filed a 10,000-plus-page chargesheet naming 189 persons. A supplementary chargesheet was filed in the TADA court.

#### What did the courts do?

In 1995, when Bombay's name was changed to Mumbai, the TADA court trial started in April under J.N. Patel, with charges framed against 123 persons. In March 1996, Justice Patel was elevated to the Bombay High Court, and P.D. Kode took over the trial. The court examined 684 witnesses, a process that lasted till October 2000. The prosecution and defence arguments went on till 2002. In 2003, Mustafa Dossa was produced before the court, but his trial was separated from the others, as was the trial of another gangster, Abu Salem, who had been extradited from Portugal in 2006. The trial ended in 2003, with the court reserving its judgment.

In August 2006, Justice Kode began dictating the verdict, which concluded

in September 2006. The court acquitted 23 of the accused and convicted 100; 12 were given the death penalty and 20 got life sentences. (After appeals, in 2013, the Supreme Court upheld the death sentence to Yakub Memon, Tiger's brother, and commuted the death sentences of 10 others to life terms. Yakub was hanged in July 2015.)

The trials of Salem and Dossa – and five others accused of being core conspirators – began in 2007, and took 10 years to reach a verdict. On May 16, 2017, the court ruled that Salem, Dossa, Firoz Rashid Khan, Taher "Taklya" Merchant, Karimullah Shaikh and Riyaz Siddiqui had conspired to execute the blasts; it acquitted Abdul Shaikh. In June, before sentencing, Mustafa Dossa had a cardiac arrest in jail and died.

Still evading justice are 27 of the key accused suspected to be in Pakistan. India and Pakistan have no extradition treaty, so it seems unlikely that they will be brought to trial.

SONAM SAIGAL

# Mr. Apologist, excuses are not enough

We can differ, but only as long as you do not elaborate into a justification of murder or genocide from your preliminary position



## THE CONTROVERSIAL INDIAN

**TABISH KHAIR**  
is an Indian novelist and academic who teaches in Denmark

It has been a fortnight of shocking tragedies in India and abroad – and of excuses by you, Mr. Apologist.

You have told me that I should not overreact: journalists get killed all over the world, and sometimes on their own doorsteps; the Rohingyas are just suffering from an internal law-and-order problem; the hurricanes ravaging the Caribbean these days and the floods ravaging India are just natural phenomena, and not due to climate change; and as for the Dreamers, poised earlier to be kicked out of U.S., oh well, that's all politics, you know, and such things happen in politics (you know). Calm down, you tell me.

Let me reassure you, I am calm. So calm that I am willing to accept all your

above positions, though I disagree with them either entirely or in part. I am calm enough to concede that in holding these positions you are establishing a certain political perspective. I differ from you, but as long as you do not elaborate into a justification of murder or genocide from your preliminary positions, you have the grounds to think as you do.

### Cracks in society, in humanity

But are you calm enough to realise that my main objections arise from other (related) aspects of all these cases, as elaborated by you?

Are you calm enough to concede that a brutal murder shakes the foundations of society, and its perpetrators can be allowed to go scot-free only if you want headline cracks to develop further in your society? When the murder is that of a besieged public figure and one with whom you (Mr. Apologist) disagree, the cracks run deeper – and you owe it to your own society to hold the culprits accountable. Cracks in a society and a state often seem to remain superficial until it is too late and the entire edifice starts crumbling – as we have seen and



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are seeing in many countries. Are you calm enough to concede that the least you can do, out of common decency if not patriotism, is to 'unfollow' those of your social media 'friends' who justify a murder and vilify its victim?

Like you, I know – for I am not what you will call an 'idealist' (alas) – that states need to exercise authority, and more so when faced with insurgency and extremism. I am calm enough to say – though many leftists and Muslims will berate me for it – that the Burmese state might have needed to act against

some form of Islamist insurgency. But when such actions lead to the killing of children and force more than 300,000 villagers to flee for their lives, then surely we are talking of an extreme abuse of authority, surely we are talking of genocide and ethnic cleansing? Are you calm enough to concede that we cannot justify such horrors without headline cracks developing in our very humanity, so that one day, it too, like society or state, crumbles into dust?

Hurricane Irma or the devastating floods in Bihar, you tell me, these are

natural disasters. You dismiss climate change: calm down, you tell me, Earth was even hotter thousands of years ago, when there were no polluting industries.

### Dumping our refuse

But – unlike most people who are fighting to stop climate change – I am willing to concede that I can never convince you of climate change. If I point to an extreme winter this year, you will point to a moderate winter another year. Climate change cannot be proved in a laboratory: there is evidence that it is taking place, but all of it exists at a very high scientific level (for instance, projections of CO2 emissions and their effects) or at a degree of theoretical abstraction. You can always refuse to accept those conclusions. I am calm enough to accept that.

But are you calm enough to acknowledge that you do not dump your refuse – most of it biodegradable – in your own house, but we, as a species, are dumping our refuse (much of it not even biodegradable) in the only house we know, planet Earth? Are you calm enough to concede that if the former is

bad for you, the latter must be bad for all of us?

As for the prospective expulsion of the Dreamers – young men and women, almost entirely educated and employed today, who grew up in the U.S. and have often known only that country, these are people whose parents entered the U.S. illegally when the Dreamers were two or ten years old and in no condition to have a say in the matter. These are people who pay extra to society for living there and who came out and disclosed their status in response to a promise by a previous government. Are you calm enough to concede that we cannot punish children for the crimes of their parents, and that people who have grown up, contributed and committed themselves to a nation have earned the right to stay there? Are you calm enough to realise that politicians cannot be allowed to arbitrarily tinker with established governmental policies affecting ordinary thousands for unclear, personal, vindictive or racist reasons?

Are you calm enough to face the fact that we owe our children much more than mere excuses, Mr. Apologist?

# What were you doing when AI took over the world?

Our rulers are nothing but human plug-ins reporting to an AI based in the U.S.



## ALLEGEDLY

**G. SAMPATH**  
is Social Affairs Editor, The Hindu

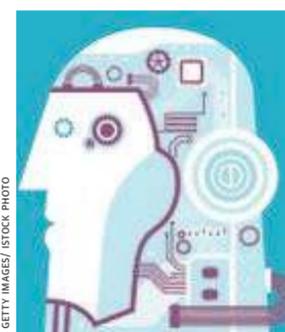
Do you remember that boy back in school who you so badly wanted to slap? Not just you but your entire class would have loved to beat him up, if only they were sure there would be no consequences.

You hated him not because he was a bad person but for the opposite reason: he was unbearably good. His uniform was always neatly pressed. His shoes shone like his teeth did. He was the first to raise his hand for every question. All the teachers loved him, and he loved them all in return. He never lost his temper and was permanently, relentlessly, infuriatingly cheerful at all times, under all circumstances. He was so good, so perfect, and so mature that it crept you out and made you look up waterboarding on Google. Except that there was no Google back then.

### A child prodigy

But there was, and still is, IBM, and it has found precisely such a boy to be their brand ambassador. His name is Tanmay Bakshi, and according to WhatsApp forwards, he is the world's top-ranked 13-year-old. Not only is he perfect, good, and mature beyond his years, he is also a software developer, an algorithmist, an IBM Cloud Adviser, a best-selling author, a keynote speaker, a TEDx speaker, and inventor of an artificial intelligence (AI) called AskTanmay.

Apart from the fact that his annual earnings at the age of 13 are way more than what you'll get when you take forced VRS at 43, Tanmay is also a drone specialist who flies aircraft using his cell phone. He is an expert on



GETTY IMAGES/ISTOCK PHOTO

neural networks, the Internet of Things, AI, and cognitive development. He is also an IT humanitarian of sorts, having vowed to teach 100,000 kids how to code. To top it all, he is an avid, self-confident self-promoter who can make Chetan Bhagat look like a shy, self-effacing, half-schoolboy. In other words, he needs to be thoroughly investigated, preferably by a joint task force of the UNICEF and the Avengers.

When I was 13, my greatest cognitive achievement was the unexpected discovery, in the biology textbook, of a diagram depicting the female reproductive system. My only other noteworthy accomplishment was a triple century against Australia in book cricket. If by chance my 13-year-old self were to meet Tanmay on a deserted alley in the middle of the night, it's likely that a puppy would come under a wheel somewhere.

Let me misunderstand, let me state categorically that I condemn all forms of violence against children. I am a champion of child rights, if I may say so myself, and in all weight categories.

And yet, why was I, a rather bright student according to my grandmother, never invited by NASSCOM to deliver a keynote address but Tanmay was? I'll tell you why: it's because my intelligence is 100% natural, human, and organic.

It is an open secret that IBM was taken over by AI at least a decade ago. Now put yourself in AI's algorithmic shoes: if you wanted humanity to embrace AI, what kind of crusader would you make? You would create a super-human intelligence that humans would regard not only with awe but also with affection. Something cute, aspirational and non-threatening, but also effective. You would create Tanmay and make him your advocacy lead. IBM has done exactly that by making Tanmay an IBM Champion. Not surprisingly, in all his public appearances he promotes two things: IBM and AI.

Now, I am not saying he is a humanoid child soldier in Silicon Valley's propaganda war in favour of AI. Nobody can open up his brain and check whether or not it has Intel inside. But so far, there is little evidence that his intelligence is not AI, or that AI hasn't already taken over the world.

### From humans to algorithms

In fact, recent developments in our own country suggest that our rulers are nothing but human plug-ins reporting to an AI based in the U.S. Our government's epic obsession with shoving Aadhaar down 125 crore gullets, not to mention its hyperevangelism about all things digital, make little sense from the point of view of human intelligence. But Aadhaar, GST, cashless, and Digital India make absolute sense from an AI perspective, for they are all mechanisms to transfer control from humans to algorithms.

Of course, I may be wrong and Tanmay could well be 100% human. But if someone is as intelligent as AI, speaks like AI, works like AI, constantly creates new AI, goes around promoting AI, and wants humanity to surrender itself to AI, then there's a pretty good chance that he himself is AI.

Anyway, I only wanted to forewarn all of you. When your grandchildren ask you what you were doing when AI was taking over the world, you ought to have a better answer than 'I was busy emitting trails of personal data'.

# Buland Darwaza and Rumi Darwaza: gateways to heaven

How rulers left their mark on history through architecture



## WHERE STONES SPEAK

**RANA SAFVI**  
is a historian, author and blogger documenting India's syncretic culture

"While the Buland Darwaza gives the impression of living rock lifted from an ancient mountainside, the Rumi Darwaza looks like the diadem of a Queen." These words by Urdu poet and author Shamsur Rahman Faruqi set off a chain of thought in my mind about how rulers used their resources to leave their mark on history.

Akbar-e-Azam ascended the throne of India in 1556. In the next decade or so, he not only consolidated his empire but also expanded it.

Akbar had everything a monarch could ask for except an heir. To pray for one, he undertook the journey from Agra to the village of Sikri where the Sufi saint, Salim Chishti, lived in his hospice. The saint blessed the emperor, and a son was born to Akbar on August 30, 1569. The joyful father named him Salim after the saint, and according to Professor Ali Nadeem Rezavi of the Department of History at Aligarh Muslim University, "decided to heap on this city the resources of a vast empire."

### Architectural accomplishments

And so was built Sikri, which was later renamed Fatehpur Sikri, or the city of victory. It is an architectural delight, but it is the Buland Darwaza, or 'gate of magnificence', that has held many enthralled. The entrance to the complex houses the Sufi saint's exquisite marble shrine and the Jami mosque.

Professor Rezavi says the Buland Darwaza at Fatehpur Sikri is "the most iconic architectural accomplishment of Akbar's reign. It incorporates almost all the essential features of Akbar's architectural traditions: red sandstone, stone carvings, relief by inserting



SYED MOHAMMAD QASIM

white marble, etc."

The construction of the Buland Darwaza was inspired by Timurid architecture. Along with Humayun's Tomb, its monumentality reflects its Central Asian origins.

Catherine Asher writes in *The New Cambridge History of India: Architecture of Mughal India*, "This monumental gate, however, was probably less intended to commemorate a military victory than to underscore Akbar's links with the Chishti order. Its surface is covered by marble slabs inscribed with Quranic verses promising paradise to true believers, appropriate for the entrance into a *khanqah*, a complex intended for meditation and devotion."

With 42 steps leading up to it, this 53.63-m-high and 35-m-wide gateway is the highest in the world. Whether it was built to celebrate victory or reflect on the transient nature of the world can be guessed from a Persian inscription on it, which advises people to turn towards spirituality: "Isa [Jesus], Son of Maryam said: 'the world is a bridge, pass over it, but build no houses upon it. He, who hopes for a day, may hope for eternity; but the world endures but an hour. Spend it in prayer for the rest is unseen.'"

This was prophetic, for the city was abandoned in 1585, with Akbar returning to the Agra Fort.

Meanwhile, in Lucknow, the Nawabs appointed by the Mughals as governors were leaving their stamp on

architecture. Nawab Asaf-ud-Daula, who ruled from 1775 to 1797, shifted the capital from Faizabad to Lucknow in 1775. Till 1856, when the British East India Company sent Nawab Wajid Ali Shah to Calcutta in exile, the Nawabs created some extraordinary religious and secular monuments.

### Architecture at a time of crisis

Asaf-ud-Daula's rule saw a devastating famine, which created an economic crisis. The residents of Awadh were self-respecting people, so instead of handing out dole, the Nawab started a food-for-work programme. The famous Asafi Imambara, or Bara Imambara, of Lucknow was built to give employment and revenue to the public.

Resources were strained, a peak had been reached in architectural style, and a certain decadence had crept in. To overcome these, the Nawabs used a more economical style in architecture, which also gave a touch of lightness to the buildings.

Instead of stones and marble, brick and lime were used. Stucco ornamentation (*gajkari*) was used to decorate the monuments, giving it a deep relief effect even on flat walls. Mother of pearl and shells deposited in lake beds were used in the stucco ornamentation to give a shine finer than marble.

The local masons cleverly used the brick, with its small size and thickness, to form remarkably fine details on the wall and column surfaces. It's a testimony to their skill that they could adapt lowly material to such wonderful effect: balusters were imitated in clay supported on iron rods. Similarly, pottery was used for roof finials and ornaments.

This skill can be seen in the delicately built Rumi Darwaza that was the main gateway to the Bara Imambara. It was called so because the design of the structure bears resemblance to an ancient gateway at Constantinople. It's also called the "Turkish Gateway". The word Rumi means Roman, and the name was probably given due to the gateway's design having traces of Roman architecture.

# The new face of ideological violence

Squads of hatred and violence are strategically activated to disrupt conversation on issues of common concern



## THE PUBLIC EYE

**RAJEEV BHARGAVA**  
is a political theorist with the Centre for the Study of Developing Societies, New Delhi

In 1598 a group of Vaishnava clergy sought the King's permission to install an idol of Vishnu at Chidambaram, the site probably of the most sacred of Shiva temples in the subcontinent. Horrified Shaiva priests responded by a threat to commit mass suicide to protest this. Indeed, twenty of them jumped to their death from the gopuram. This telling detail from a recent book on pluralism by a young American scholar, Elaine Fischer, vividly illustrates the nature of religious violence in early modern India. Worshippers would rather give up their own life than take the life of others with different beliefs and practices. Killing someone from another sect was simply inconceivable!

In the light of this, what is happening today is cataclysmic. India has had many faults but eliminating people for holding different beliefs was certainly

not one of them. For more than two millennia, India has had vibrant traditions of atheism and rationalism – the Jains, Buddhists, followers of Mimamsa and Samkhya. They were vigorously opposed by worshippers of gods and goddesses and ritualists of all hue, but were never viewed as an existential threat. Claims of superiority were frequently made in public alongside scathing satire, and black humour. There was vitriol too, but physical violence was rare. Ashoka's inscriptions as early as the 3rd century exhort different religio-philosophical groups to refrain from insulting and humiliating hate speech. Ashoka does not even consider it worth mentioning that people must abjure injuring, leave alone killing each other. He takes it for granted that this does not happen in his kingdom. This is not to say that ancient societies were entirely peaceful. They were rocked by political violence and the everyday violence integral to all hierarchical societies. However, what India did not witness until the advent of colonial modernity is what may be called ideological violence.

### Forms of violence

Violence comes in many forms. One kind that springs from greed, anger and fear has been around forever – call this plain violence. Then, of course, there is



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political violence, i.e. violence to conquer territory, to acquire and maintain state power. Yet another, third form of violence has existed, which might be called ritual violence – in archaic societies, occasionally humans, but far more frequently animals, were slaughtered and sacrificed to procure this-worldly goods as well as to maintain cosmic order. In India, some of this ritual violence also ensued from the distinction between pure and impure, i.e. caste violence.

Ideological violence is different from all these forms of violence – it stems from the dogma that one's own beliefs

and practices are so precious, so unique, that they alone must be publicly visible. Since these are inherently indisputable and have a monopoly over truth, any challenge to them is wasteful or pernicious and therefore must be silenced or erased. It is accompanied by the idea that those with identical beliefs share a special bond of brotherhood which must not be severed by the slightest deviation from within; therefore, internal dissenters must not be tolerated. On the other hand, those who hold different beliefs are outsiders to be fought, expelled, even exterminated.

Ideological violence was once linked

to the development of a certain conception of religion, and therefore can also be called religious violence. But in the last two centuries it has permeated a cluster of non-religious ideologies such as Stalinism, Fascism and xenophobic nationalism. Perhaps that is why it is best to call it not religious but ideological violence.

The horrifying spate of murders – Narendra Dabholkar, Govind Pansare, M.M. Kalburgi and Gauri Lankesh – by what appears to be the same kind of killers has shown us a new face of this very ideological violence. To be sure, shades of ideological violence are found in inter-sectarian warfare in West Bengal, and Kerala is currently beset with ideologically motivated inter-group violence, but what is unique about these killings is that violence is directed by assassination squads run by hate groups against hapless individuals merely for holding and expressing their different views in public. This pernicious squad-violence against ordinary middle-class professionals is unique in recent Indian history.

### A new fear

One other feature of these serial assassinations is deeply troubling: unless quickly contained, they generate a new kind of fear and a new set of fearful

people. It is true, of course, that some or the other group of people have always lived in fear in our society. For instance, Dalits in villages perpetually on the brink of upper-caste violence, women who can never fearlessly venture out at night, journalists in small towns who routinely face the wrath of the powerful, minorities during and in the aftermath of riots, and even middle- and upper-class families who live in gated communities in cities such as Delhi. But what is new and shocking about these recent murders is the attempt to silence assertive, public-spirited citizens in metropolitan towns – an effect also sought to be achieved by the legal intimidation of intellectuals and activists.

Are we so uprooted now from our traditions that we can't bear to see public articulations of alternative view points? Is there an effort here to have one monolithic ideology in the public domain? Squads of hatred and violence are strategically located and activated to disrupt debate and conversation on issues of common concern and instead foster civic alienation and political fragmentation. If indeed a nation is a people in conversation with each other, then cyberbullying and physical aggression against fellow citizens are conversation stoppers. An attack on this conversation is an attack on the nation.

CAPSULE



**Looking at X-rays**  
X-rays are known to penetrate things. Now a German-Canadian collaboration has observed how X-rays act and which electrons they actually interact with, by using very short laser pulses that last less than a quadrillionth of a second. This is useful in deep study of properties of solids.



**Troublesome tattoos**  
A recent study by published in *Scientific Reports* shows that nanoparticles from permanent skin tattoos can migrate passively via blood and lymph fluids. Nanoparticles of nickel, chromium etc get deposited in regional lymph nodes. Long-term deposition can also lead to cutaneous inflammation and granuloma.



**Ancient ant**  
A new genus of ants from the Cretaceous period has been found in Myanmar. The ants, named *Linguamyrmex vladii*, are distinguished by unusual horn-like appendages indicating specialised predatory behaviour not found in modern ants. The finding was reported in *Systematic Entomology*.



**Robot with skin**  
In a breakthrough, University of Houston researchers developed artificial skin to help a robotic hand sense warmth and cold. This is the first time a semiconductor is created in a rubber composite and which remains functional even after the material is stretched up to 50% its original size.



**Toughening spider silk**  
By itself, spider silk is a very strong material, tougher than steel of similar thickness. Now, researchers have found a way to boost its strength further. They sprayed a solution of graphene and carbon nanotubes in the spider enclosures. The spiders ingested the solution and produced silk with enhanced toughness.

ODD & END

Warrior woman

A study on a warrior grave in Sweden found a skeleton belonging to a woman warrior. The study carried out by Stockholm University and Uppsala University is the first report of a female Viking. The genomic results revealed a lack of Y chromosome, and the teeth and bone confirmed that it was a female of approximately 30 years of age. The researchers also found a sword, an axe, a spear, armour-piercing arrows, a battle knife, two shields, and two horses along with the skeleton. A full set of gaming pieces showed that the person had knowledge of tactics and strategy, showing that the buried individual was a high-ranking officer. It also provides a unique insight into the Viking society, social constructions and exceptions to the norm in the Viking time-period.

# TMC overcomes resistance to hormonal therapy for breast cancer

Molecular mechanism of hormonal therapy's protective benefits identified

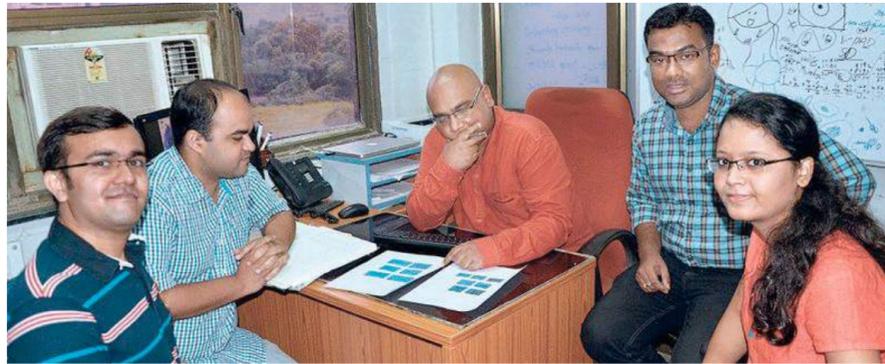
R. PRASAD

Researchers at the Tata Memorial Centre (TMC), Mumbai, have found a possible reason why certain breast cancer patients become resistant to hormonal treatment. And the good news is that they have designed an anti-microRNA (small non-coding RNA) which can be probably help in overcoming the resistance to hormonal therapy.

In another study, the researchers have found the molecular mechanism that is responsible for conferring protective benefits of progesterone hormone in breast cancer patients. Progesterone hormone treatment prior to breast cancer surgery reduces recurrences and increases survival in node positive cases, a 2011 clinical trial carried out by Dr. Rajendra Badwe and colleagues at the Tata Memorial Centre (TMC) found.

A team led by Dr. Amit Dutt from the Integrated Cancer Genomics Laboratory, ACTREC at TMC has found that following progesterone treatment, the expression of progesterone receptor in the breast cancer cells is turned down or reduced. Turning down the expression of progesterone receptor was through the action of small RNA molecules (microRNA). MicroRNAs are known to have regulatory functions inside the cells.

The researchers took breast cancer cells and treated them with progesterone and performed deep-sequencing using next generation sequencers for small RNA molecules. "We found three microRNAs to be consistently over-expressed [produced in abundance] in response to progesterone treatment. And the over-expressed microRNAs turn down the expression of the progesterone receptor. The over expression of microRNAs was independent of the progesterone receptor status of the breast cancer cells," says Mukul Godbole from the Integrated Cancer Genomics Laboratory, ACTREC at TMC and the first au-



**Complex interplay:** A team led by Dr. Amit Dutt (centre) has found that following progesterone treatment, the expression of progesterone receptor in the breast cancer cells is turned down or reduced. \*SPECIAL ARRANGEMENT

thor of both the papers.

Using biochemical approaches, the researchers were able to validate one (miR-129-2) of the three microRNAs that is over-expressed. The results were published in the journal *Cancer Biology & Therapy*.

To confirm their results, the researchers analysed the expression of the particular microRNA (miR-129-2) in The Cancer Genome Atlas (TCGA). They found that patients with high levels of miR-129-2 microRNA had "significantly lower expression" of progesterone receptor compared with patients with no expression of this microRNA.

**Overcoming resistance**

It is common to see patients undergoing hormonal treatment becoming resistant to the treatment. "Now we know a possible reason why patients become resistant to hormonal therapy," Dr. Dutt says.

And the good news is that in adjuvant setting after surgery it is possible to prevent the microRNAs from turning down the expression of the progesterone receptor. By using an anti-microRNA that the team de-

signed it is possible to reduce the level of microRNAs. The anti micro RNA ensures that the expression of progesterone receptor remains intact and patients respond to progesterone hormone treatment.

"In *in vitro* studies, the anti-microRNA was found to be very effective," says Dr. Dutt. By using the anti-microRNA, it might be possible to turn the clock back in the case of patients who have developed resistance to hormonal therapy.

**Molecular mechanism**

In another study, the researchers have found the molecular mechanism that is responsible for conferring protective benefits of progesterone hormone in breast cancer patients. A clinical trial at TMC found progesterone hormone treatment prior to breast cancer surgery reduces recurrences and increases survival in node positive cases.

Specifically, they found that both breast cells which produce progesterone receptor and those which do not produce progesterone receptor respond uniformly to external progesterone treatment.

The researchers found that irrespective of the progesterone receptor status of breast cancer cells, progesterone hormone treatment inactivates a set of 12 protein kinases (which are required for basic functioning of a cell).

The inactivation of the 12 kinases results in the inhibition of breast cancer cell migration and invasion. As a result, there is a delay or reduced chances of cancer cells spreading (metastasis), which is a major cause of recurrence in breast cancer patients. The results were published in the journal *Cellular Oncology*.

"This finding is very important as it gives us an *in vitro* model to understand the intricacies of progesterone and the inhibition of invasion," says Dr. Dutt.

"Besides understanding the molecular mechanism of progesterone hormone treatment, the real implication of the study will be that we may be able to select patients who will benefit from progesterone treatment," says Dr. Sudeep Gupta from the Department of Medical Oncology at TMC and one of the authors of the two papers.

# Bird malaria in the Himalayan foothills

The fever shows no seasonal pattern

ASWATHI PACHA

Bird or avian malaria caused by parasites *Plasmodium* and *Haemoproteus* is one of the most common and widespread diseases in birds. Mosquitoes transmit *Plasmodium*, while biting midges (*Culicoides* sp.) are responsible for *Haemoproteus* transmission in birds.

Previous studies from the temperate regions have shown that temperature plays an important role in the transmission of the parasites and also regulates the presence of these blood-feeding insect vectors. But a new study by scientists from Indian Institute of Science, (IISc) Bengaluru, and Wildlife Institute of India (WII), Dehradun, showed that seasonal variation had no influence on prevalence of avian malarial parasites in India. The results were recently published in *Ecology and Evolution*.

Though human malaria follows a seasonal pattern in the Himalayan foothills with peak transmission from July to October, the avian malaria parasites showed no peak and were found to stay in blood throughout the year.

**Temperature effects**

The team conducted year-round (December 2008 to December 2009) sampling inside WII campus using mist-nets. They collected a small quantity of blood from the resident Himalayan birds before releasing them. A systematic record on avian abundance was also maintained. They also sampled mosquitoes in the same habitat to un-

derstand the influence of seasons on mosquito species and their abundance with change in temperature.

Among the 413 birds screened, 153 i.e. 38% showed infection with blood parasite. They examined the relationship between monthly temperature, mosquito abundance and parasite prevalence. Though the mosquito abundance increased with temperature, the *Plasmodium* infection decreased. This could probably be due to a temperature threshold above which the parasite cannot develop into an infective stage inside the mosquito.

**Bimodal patterns**

"In U.K., we see a bimodal pattern where the infection peaks during spring and autumn, and subsides during winter. In spite of well-defined summer-winter conditions in Dehradun, the mosquito abundance did not vary much between seasons," explains Dr. Farah Ishtiaq from IISc and first author of the paper. But the composition of mosquito species changed with season leading to infection throughout the year.

Dehradun is a wintering ground for many high elevation Himalayan birds as well as small European perching birds.

The team sampled migrants to understand parasite prevalence. Molecular analysis on the parasites revealed that most parasites found in resident birds were locally transmitted and not from the migrant birds.

# Mumbai team discovers how embryos implant in the womb

The insight can be used for improving the success rate of in vitro fertilisation (IVF) and in developing contraceptives

R. PRASAD

Researchers at the National Institute for Research in Reproductive Health (NIRRH) in Mumbai have finally shed light on one of the most important steps in pregnancy – the ability of the embryo to implant itself in the womb.

Although much is known about the early steps of establishment of pregnancy, very little is known about the communication between the implanting embryo and mother's womb. The researchers have found a cross-talk between the embryo and the inner lining of the uterus (endometrium) and discovered a chain of chemical events that facilitate the implantation of the embryo in the womb.

The understanding of this initial step has several potential implications such as improving the success rate of *in*



**Chain of events:** The researchers led by Deepak Modi have discovered the chemical chain of events that facilitate the implantation of the embryo in the womb. \*SPECIAL ARRANGEMENT

*vitro* fertilisation (IVF), which hovers around 30% and developing contraceptives which work by preventing the implantation of the embryo. In all probability, the insight into the implanting mechanism might help in better understanding of con-

ditions such as pre-eclampsia (gestational hypertension). The results of the study were published in the journal *Endocrinology*.

**In vitro studies**

Even in normal situations, there is about 40% wastage

of embryos as they fail to implant, leading to unsuccessful pregnancy. That is because a delicate and intricate balance exists between the embryo which is able to implant itself and the endometrium that receives it. At present very little of this process is understood.

Using cell lines of trophoblast (the outer layer of the dividing bunch of cells of blastocyst) and endometrium (the inner lining of the uterus) samples from women who have undergone hysterectomy the researchers recreated the system in a lab dish. Chemicals were used to make the endometrium thicker (decidua) to mimic the lining of the uterus which is ready to allow the embryo to implant itself.

A particular protein (HOXA10) which is responsible for better invasion and implantation of the embryo

in the endometrium is present at elevated levels in a receptive endometrium. The team led by Dr. Deepak Modi at the Molecular and Cellular Biology Laboratory at NIRRH found the level of this protein drops suddenly at the time of implantation. This drop is localised to the place where the embryo is about to implant itself.

**Chain of events**

The sudden drop in the HOXA10 protein causes a chain of events starting with a spike in certain class of cytokine leading to a trigger in the implantation pathway (STAT3) of the embryo. As a result, certain enzymes in the embryo digest the extracellular matrix of the decidua (thickened lining of the uterus) and make it loose enough for the outer layer of the embryo (trophoblast) to invade and implant itself in

the uterus.

"We depleted the HOXA10 protein in one set of decidua cells while we kept it at normal level in another set of cells. We found increased invasion of trophoblasts and therefore better implantation where cells with reduced HOXA10 level were used," says Dr. Modi. "We could also show that the trophoblast cells which have more invasion have increased activity of the enzymes that digest the extracellular matrix proteins of the decidua."

"Previously it was thought that higher HOXA10 expression was better for implantation. But our study, for the first time, showed that at the site of implantation the HOXA10 expression is lower," says Dr. Satish Kumar Gupta from the National Institute of Immunology, New Delhi and one of the authors

of the paper.

It took the team eight years to complete the study. The biggest challenge was to test and prove the sequence of events observed in the lab happen in the womb. "This was a big technical challenge as getting human tissue of women in early stages of pregnancy is impossible. So we took tissues from monkeys which are very close to humans to validate the lab findings," says Dr. Modi.

In baboons, lower levels of HOXA10 protein were found at the site of implantation as compared with other sites of the decidua. "This helped confirm that reduced HOXA10 protein was associated with the enhanced invasion and implantation of the embryo in the decidua," says Geeta Godbole from the Molecular and Cellular Biology Laboratory at NIRRH and the first author of the paper.

# Research papers are getting harder to read, comprehend

Since only peers and specialists read the whole paper, it is vital that the abstract be readable and understandable by all



SPEAKING OF SCIENCE

D. BALASUBRAMANIAN

One of the all-time most important scientific research publications is Charles Darwin's "On the Origin of Species", published in 1859. It was not a paper but a whole book. It was readable and understandable not only by biologists, but by mathematicians, philosophers, historians and the "lay public" as well. Alas, today's scientific reports are increasingly becoming unreadable and incomprehensible even by peer groups. "The readability of scientific texts is decreasing over time", write a group of neuroscientists from the Karolinska Institute, Stockholm, Sweden (Plaven-Sigay et al. *eLife* 2017; 6:e27725).

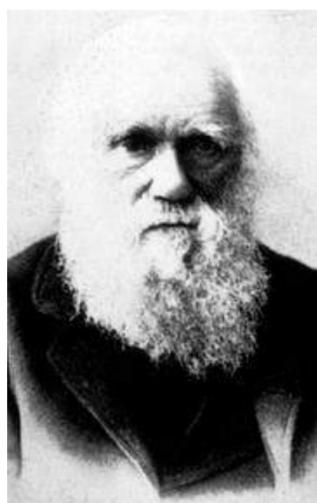
The group analysed the language of the abstracts of as many as 7,09,577 papers published over the last 34 years – between 1880 and 2015. Note that they analysed not only the whole texts of the research papers but their abstracts as well. An abstract describes in a nutshell the main message of the paper – what the question is, what methods were used to address the question, what the results obtained were, and what the salient conclusions

have been. Thus, an abstract is meant for not the specialists in the same field alone, but for non-specialists and interested readers as well. It, in effect, offers the reader the "take home" message. Only specialists and fellow researchers, interested in the area of research of the publication read the whole paper in all its sections. It is thus vital that the abstract be readable and understandable by all.

**How to measure this?**

How does one measure and quantify "readability"? Way back in 1948, one Dr. R Flesch published a 'yardstick' of readability for the English language texts. It was based on (a) the number of syllables per word and (b) the number of words in each sentence. The Flesch Readability Ease (FRE) is between 100-90 for a typical 5th grade schoolchild in the US. (The sentence "A cat sat on a mat" has an FRE of 110, easily understood by a primary schoolchild). The magazine *Readers Digest* has an FRE of 65, understood by high school students and beyond. The *Harvard Business Review*, on the other hand, has a value of 30. The "Harvard Business Review" (with its complex and specialised technical language) has an FRE of 30. Thus, the lower the FRE the harder the readability.

Likewise, the FRE of scientific abstracts published way back in 1880 was found to be around 30. But, over the years, it has fallen down to as low as 10 today. Worryingly, as many as 1.6 lakh abstracts (close



**Charles Darwin's book:** "On the Origin of Species", was accessible to biologists and even lay people. \*FILE PHOTO

to 20% of all journal articles) have FRE of zero (0). An M.Sc. graduate may not be able to understand them. Leave alone specialised journals (with their specialised terms and jargon), this appears to be true of even "general" journals such as *Nature* or *Science*. The mean syllables per word

has also shot up almost twofold and the number of difficult words (counted as NDC) has gone up from 35% to over 50%, particularly during the last 60 years, making readability increasingly difficult.

Why has this difficulty arisen in the readability? The authors suggest two possibilities. One is that the number of co-authors has gone up with time. Indeed, we seldom see a single-author paper (only perhaps in mathematics?). Many of the co-authors want their say in the text – the classic cooks and broth situation. The other appears to be a general increase in the scientific (and linguistic) jargon, and hence a vocabulary that has become a language in itself (they call it "science-ese", I see a similarity here with "legal-ese"). Interestingly, it is not only scientific jargon even other words such as "novel", "robust", "significant", "district", "underlying", and "suggestive" are used increasingly these days.

Same conclusions drawn by the Karolinska group are worth quoting. They write: "Lower readability implies less accessibility, particularly for non-specialists, such as journalists, policy makers and the wider public... scientific credibility can sometimes suffer when reported by journalists... further, amidst concerns that modern societies are becoming less stringently with actual truths, replaced with true-sounding "post-facts"... science should be advancing our most accurate knowledge. One suggestion from the field is to create accessible "lay summaries."

Another proposal is to make scientific communication a necessary part of undergraduate and graduate education." (This last suggestion is particularly true for India, where mastery over English, the *lingua franca* of today's science, needs to be improved badly.)

Finally, the authors did a self-analysis of their own paper and found it has a FRE score of 49, and its abstract 40. I hope my own report here fares higher!

**Seminar presentations**

It is already difficult to read and comprehend a published paper. One would think listening to it in a seminar might make it easier. Alas, no. These days the speaker uses the modern device called Powerpoint, which makes it worse. Each slide is filled from top to bottom with words and pictures. More often than not, they are 'copy and paste' jobs from the paper. Given that the lights are dimmed, each slide brimful and the speaker drones on and on, the whole thing is soporific. Just as FRE and NDC, there are factors such as aspect ratio, font size, number of lines per slide, and colour contrast which make Powerpoint presentations attractive. And just as we want courses and workshops in scientific writing, we need to have classes and workshops on oral presentations, using audiovisual aids. If this does not happen, do not blame us if we fall asleep during seminars.

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