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MINISTRY OF SCIENCE AND TECHNOLOGY



MK Yadav Sir

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CONFEDERATION OF INDIAN TEXTILE INDUSTRY

(Syllabus: GS Paper 3 – Economy)

Textile sector needs cheaper inputs: CITI

The Hindu Bureau
COIMBATORE



The Confederation of Indian Textile Industry (CITI) has urged the government to ensure availability of cotton and man-made fibre (MMF) at internationally-competitive prices to propel the Indian textile industry towards the target of $350 billion by 2030.

The government should remove import duty from all varieties of cotton, including cotton waste and raise cotton productivity with a focus on specialised seed varieties. On the MMF front, it should exempt all fibres and yarns that are not available domestically from the scope of Quality Control Orders (QCOs).

It should also exempt inputs imported by Advance Authorisation holders, EoU and SEZ units from the mandatory QCOs issued by the Department of Chemicals and Petrochemicals on the lines of exemption provided for QCOs by the Textiles Ministry.

"Raw material availability at internationally-competing prices can address stagnation in the industry," said Rakesh Mehra, Chairman CITI.

Context: The **Confederation of Indian Textile Industry (CITI)** has urged the government to ensure availability of cotton and manmade fibre (MMF) at internationally-competitive prices to propel the Indian textile industry towards the target of $350 billion by 2030.

Confederation of Indian Textile Industry (CITI)

- **About**: It is the sole National Association representing the entire Textile and Clothing Industry, inclusive of domestic and exporting units, alongside regional and sectoral associations, spanning from farms to garments and textile machinery.
- **International Collaborations**: CITI has signed Memorandums of Understanding (MOUs) with Thirteen major International Textile Associations, aimed at fostering textiles trade and investment globally.
- **Interface with Government**: Serving as a crucial interface between the Government of India and the industry, CITI aids in policy formulation, providing policy inputs, supporting the textile and clothing sector, association, capacity building, and awareness creation to bolster industry growth.
- **Skill Development:** CITI, as a founding member of the National Skill Development Corporation (NSDC) and a promoter of the Textile Sector Skill Council, plays a pioneering role in augmenting the availability of skilled workforce for the sector.
- **Technological Advancements**: As a founding member of the Indian Textile Machinery Exhibition (ITME) Society, CITI contributes significantly to technological advancements and enhancements within the textile sector.

Textile Sector in India

- **Global Textile Production**: India holds the second position in textile production.
- China is a global leader in textiles.
- **Exporting Textile Goods**: India is also the world's second-largest textile exporter.
- **Employment Generation**: Second-largest job provider, following agriculture.
- **Current Status**: The textile and apparel sector contributes approximately 4% to global trade, constituting 7% of industry output by value as of 2023, and contributes about 2% to the GDP, amounting to approximately $60 billion.
  - Direct employment in the sector stands at around 35 million people.
  - With an expected Compound Annual Growth Rate (CAGR) of 10% from 2019-20, the industry is projected to reach US$ 190 billion by 2025-26.
  - India holds a 4% share in the global trade of textiles and apparel.
  - As the world's second-largest producer of silk, India accounts for 95% of all hand-woven cloth production.

INDIAN EXPRESS Page 16

STONE AGE
(Syllabus GS Paper 1 – History)

Why Stone Age could well be called 'Wood Age': Evidence from study

ARJUN SENGUPTA
NEW DELHI, MAY 23

A STUDY of prehistoric wooden artefacts from Schöningen, Germany has indicated that these were not simply "sharpened sticks" but "technologically advanced tools" which required skill, precision, and time to build.

"In total, 187 wooden artefacts could be identified… demonstrating a broad spectrum of wood-working techniques" including "splitting, scraping or abrasion", the research paper, published in the journal *Proceedings of the National Academy of Sciences* in April, said. The oldest of these artefacts were dated to roughly 400,000 years ago, well before modern *Homo sapiens* walked on Earth.

EXPLAINED HISTORY

Periodising prehistory

Technically, human 'history' began with the advent of writing. Everything before that is 'prehistory', studied primarily using archaeological evidence (physical remains) and, to a lesser extent, ethnographic research (study of humans, communities).

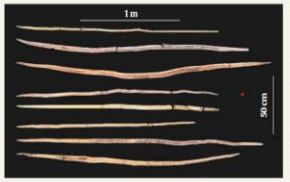
In the 19th century, Danish archaeologist Christian Jürgensen Thomsen came up with the Stone Age-Bronze Age-Iron Age classification of human prehistory, which has since risen to the status of dogma in the discipline, even though modern scholars have made refinements to reflect regional variations.

The Stone Age began when hominids first picked up stone tools, some 3.4 million years ago, in modern-day Ethiopia, and went on till about 6,000-4,000 BP (Before Present). It comprises 99% of human history, and is further divided into three periods — Palaeolithic (Old Stone Age), Mesolithic (Middle Stone Age,), and Neolithic (New Stone Age).

The Palaeolithic period, which went on till about 11,650 BP in some places, is characterised by the use of rudimentary stone tools, and a hunter-gatherer lifestyle. The Mesolithic period is a transitional phase. The Neolithic period, which first began roughly 12,000 BP in West Asia, is characterised by the development of settled agriculture, and the domestication of animals.

Preservation bias

Archaeological evidence forms the basis of the Stone Age classification — excavated sites from this period have unearthed stone tools of varying degrees of sophistication, which provide an insight into the lives and capabilities of their users.



The famous Schöningen spears were excavated in the 1990s. PNAS study

These capabilities, however, were not just limited to stone. Stone Age sites also show evidence of the use of bones and antlers, clay, and metal (very limited). Evidence of wood-working, however, has been much more scarce, even though wood would have likely been an abundant resource.

Of the thousands of archaeological sites that can be traced to the Lower Palaeolithic (up to around 200,000 BP), wood has been recovered from less than 10, according to a report by *The New York Times*. The earliest evidence of the use of wood, seen in the form of wooden dwellings, has been dated to only 700,000 BP — over two and a half million years after the earliest evidence of stone tools.

But this does not mean that wood was not used. Study co-author Thomas Teberger told *The NYT*: "We can probably assume that wooden tools have been around just as long as stone ones… But since wood deteriorates and rarely survives, preservation bias distorts our view of antiquity."

What Schöningen reveals

This is why the finds in Schöningen are important. Due to the damp and oxygen-less conditions of the peatland's soil, organic matter could not decompose — leading to the most well-preserved assemblage of prehistoric wooden artefacts in the world.

"Schöningen stands out due to its number and variety of wooden tools…A minimum of 20 hunting weapons is now recognised and two newly identified artefact types comprise 35 tools made on split woods, which were likely used in domestic activities," the study said.

In the mid-1990s, archaeologist Hartmut Thieme discovered three wooden spears, along with stone tools and the butchered remains of more than 10 wild horses, dated to around 400,000 years ago. This discovery of the world's oldest preserved hunting weapons catapulted Schöningen and Thieme to global fame by upending the prevailing consensus that humans lived as simple scavengers till as recently as 40,000 years ago.

"…[T]he spears strongly suggest that systematic hunting, involving foresight, planning and the use of appropriate technology, was part of the behavioural repertoire of pre-modern hominids… [This] may mean that many current theories on early human behaviour and culture must be revised," Thieme wrote in his paper 'Lower palaeolithic hunting spears from Germany' (1997).

The new study shone light on the technological complexity of Schöningen's wooden artefacts. Using 3-D microscopy (multiple sets of images taken from a range of viewing angles and collated and digitally constructed into a three-dimensional figure) and micro-CT scanners (CT scanners with micron — one millionth of a metre — resolution), researchers studied signs of wear or cut marks.

For instance, "until now, splitting wood was thought to have been only practised by modern humans," Dirk Leder, the paper's lead author, told *The NYT*.

Some spears points showed indications of being resharpened after breakage. "The… working debris suggested that tools were repaired and recycled into new tools for other tasks," co-author Annemieke Mills said.



Context: New research indicates that the Stone Age a long prehistoric period characterised by the use of stone tools by humans and our ancestors might as accurately be described as the 'Wood Age'.

Stone Age

- **About:** It commenced approximately 3.4 million years ago in modern-day Ethiopia with the use of stone tools and lasted until about 6,000-4,000 BP, covering 99% of human history.
- **Divisions of the Stone Age**
- **Palaeolithic Period:** This period, lasting until about 11,650 BP in some regions, is marked by rudimentary stone tools and a hunter-gatherer lifestyle.
- **Important sites in India**: Sohan Valley in West Bengal now in Pakistan; Kurnool Caves, Gichchlur, Nellure in Andhra Pradesh; Nevasa in Maharashtra; Bellan Valley in U.P and Madhya Pradesh, etc.
- **Mesolithic Period:** It is a transitional phase between the Palaeolithic and Neolithic periods.
- **Important sites in India:** Adamgarh (M.P) and Bagor in Rajasthan – earliest domestication of animals. Bhimbetka caves (Madhya Pradesh), Kharwar, Jaora and Kathotia (M.P), Sundargarh and Sambalpur (Odisha), Ezhuthu Guha (Kerala). Langhnaj (Gujarat), Sarai-Nahar-Rai (Pratapgarh U.P), Paisara (Munger Bihar).
- **Neolithic Period:** This period began around 12,000 BP in West Asia and is characterised by sttled agriculture and the domestication of animals.
- **Important sites in India**: Mehrgarh (located in Baluchistan, Pakistan), Burzahom (Kashmir), Gufkral (Kashmir), Chirand (Bihar), and Utnur (Andhra Pradesh).

NEURAL NETWORK
(Syllabus: GS Paper 3 – Sci and Tech)

NEURAL NETWORKS ARE MODELLED AFTER THE HUMAN BRAIN



Neural networks are a subset of machine learning models inspired by the human brain's structure and function. They consist of layers of interconnected nodes, or "neurons," which process input data to generate output predictions. Each neuron receives one or more inputs, applies a weighted sum, and passes the result through an activation function to produce an output.

A typical neural network has an input layer, one or more hidden layers, and an output layer. The input layer takes in the raw data. Each subsequent hidden layer processes the data further, extracting features and patterns through learned weights and biases. The final output layer generates the prediction or classification based on the processed information from the hidden layers.

Training a neural network involves adjusting the weights and biases to minimise the error between the predicted and actual outputs. This process is done through an algorithm called backpropagation, which calculates the gradient of the loss function (a measure of prediction error) and updates the weights accordingly using an optimisation method like gradient descent.

Neural networks excel in tasks involving large and complex datasets, such as image and speech recognition, natural language processing, and game playing. They are capable of capturing intricate patterns and relationships within data, making them powerful tools for a wide range of applications.

Context: Neural networks, inspired by the human brain, revolutionize AI technology.

Neural Network

- **About**: It is a method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain.
  - It is a type of machine learning process, called deep learning, that uses interconnected nodes or neurons in a layered structure that resembles the human brain.
- **Composition**: They consist of layers of interconnected nodes, or "neurons," which process input data to generate output predictions.
- **Neuron Processing**: Each neuron receives one or more inputs, applies a weighted sum, and passes the result through an activation function to produce an output.
- **Layer Composition**: A typical neural network has an input layer, one or more hidden layers, and an output layer.
  - The input layer takes in the raw data, while each subsequent hidden layer processes the data further, extracting features and patterns through learned weights and biases.
- **Training Mechanism**: Training a neural network involves adjusting the weights and biases to minimize the error between the predicted and actual outputs.
  - This process is done through an algorithm called backpropagation, which calculates the gradient of the loss function and updates the weights accordingly using an optimization method like gradient descent.
- **Application Domains:** Neural networks excel in tasks involving large and complex datasets, such as image and speech recognition, natural language processing, and game playing.
- **Significance**:
  - Medical diagnosis by medical image classification
  - Targeted marketing by social network filtering and behavioral data analysis
  - Financial predictions by processing historical data of financial instruments
  - Electrical load and energy demand forecasting.

INDIAN EXPRESS

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BRAIN EATING AMOEBA

(Syllabus: GS Paper 3 – Sci and Tech)

BRAIN-EATING AMOEBA

Naegleria fowleri is a single-celled organism which causes primary amoebic meningoencephalitis (PAM)

A FIVE-YEAR-OLD girl succumbed to PAM in Kozhikode, Kerala on Monday.

What is *Naegleria fowleri*?

N fowleri is a free-living amoeba found in warm freshwater bodies – lakes and rivers, and in rare cases, poorly maintained swimming pools and recreational settings – across the world. They survive for short periods in warm environments, upto 46 degrees Celsius.

Amoebae are single-celled organisms with the ability to alter their shape, primarily by extending and retracting pseudopods – temporary arm-like projections. They consume other living micro-organisms such as bacteria, or 'scavenge' on dead organic matter.

How does *N fowleri* infect people?

Infection from *N fowleri* occurs mostly when contaminated water is inhaled through the nose, and enters the olfactory nerve tissue. The amoeba then travels to the brain, where it causes the brain tissue to swell up, eventually destroying it.

Swallowing water contaminated by *N fowleri* does not cause infection. Nor does contact with an infected person.

In the most recent case in Kozhikode, authorities suspect that the victim was infected while swimming in the local river. The young girl swam with four other children, who, however, were safe and did not get infected by PAM.

What are the symptoms of PAM?

In the initial stage, symptoms include headache, fever, nausea and vomiting. Later on, the patient may get a stiff neck and experience confusion, seizures, and hallucinations. Eventually, the patient slips into a state of coma.

According to the US Centers for Disease Control and Prevention, "Most people with PAM die within 1 to 18 days after symptoms begin. It usually leads to coma and death after 5 days."

How can PAM be treated?

No effective treatment has been devised yet for the disease.

Currently, antifungal drug amphotericin B is the most heavily used medication. It binds to the *N Fowleri* cell(s), and eventually kills it. However, even with this treatment, PAM has a fatality rate of 95-97%.

Antibiotic, antifungal and antimicrobial drugs such as azithromycin, fluconazole, rifampin, miltefosine, and dexamethasone are also used to treat the disease.

A 2015 paper documenting the successful treatment of PAM said that "survival most likely resulted from a combination of early identification and treatment, use of a combination of antimicrobials including miltefosine and management of elevated intracranial pressure based on traumatic brain injury principles".

How prevalent is PAM?

It is very rare. There have been only 20 documented cases of PAM in India, with the Kozhikode case being the seventh in Kerala. A research paper from 2021 was able to identify a total of 381 cases, worldwide, since the disease was first discovered in 1966.

SHAJU PHILIP

Context: A five-year-old girl being treated for primary amoebic meningoencephalitis (PAM), a rare and deadly infection caused by the **"brain-eating amoeba" Naegleria fowleri,** recently passed away.

Brain-Eating Amoeba

- **About**: Naegleria fowleri lives in warm fresh water and soil around the world.
- **Infection:** It infects people when it enters the body through the nose.
- **Growth Conditions**: Higher temperatures of up to 115°F (46°C) are conducive to its growth.
- **Survival**: It can survive for short periods in warm environments.
- Freshwater Locations
- **Natural Bodies of Water**: The amoeba can be found in warm freshwater, such as lakes and rivers.
    - It can also inhabit swimming pools, splash pads, surf parks, or other recreational venues that are poorly maintained or minimally chlorinated.

Primary amebic meningoencephalitis (PAM)

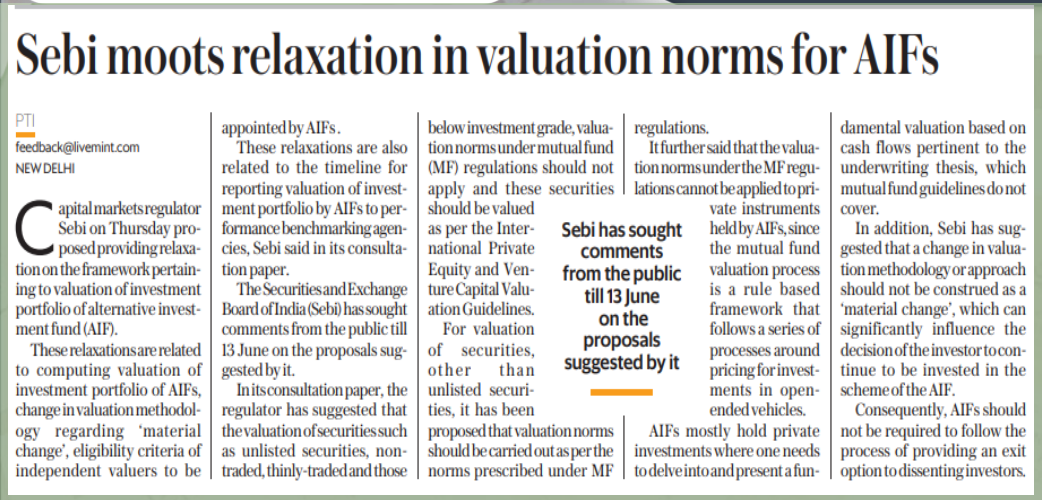
- **About:** It is a rare brain infection that is caused by Naegleria fowleri. It is a free-living amoeba or a single-celled living organism.
- **Initial Symptoms:** Headache, fever, nausea, and vomiting.
- **Advanced Symptoms:** Stiff neck, confusion, seizures, hallucinations, and coma.
- **Transmission Facts:** Infection does not occur from drinking water contaminated with Naegleria fowleri.
    - Primary amoebic meningoencephalitis (PAM) is not transmissible between people.
- **Treatment**: Scientists have not found any consistently effective treatments.

LIVEMINT

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ALTERNATIVE INVESTMENT FUNDS

(Syllabus: GS Paper 3 – Economy)



Sebi moots relaxation in valuation norms for AIFs

PTI
feedback@livemint.com
NEW DELHI

Capital markets regulator Sebi on Thursday proposed providing relaxation on the framework pertaining to valuation of investment portfolio of alternative investment fund (AIF).

These relaxations are related to computing valuation of investment portfolio of AIFs, change in valuation methodology regarding 'material change', eligibility criteria of independent valuers to be appointed by AIFs.

These relaxations are also related to the timeline for reporting valuation of investment portfolio by AIFs to performance benchmarking agencies, Sebi said in its consultation paper.

The Securities and Exchange Board of India (Sebi) has sought comments from the public till 13 June on the proposals suggested by it.

In its consultation paper, the regulator has suggested that the valuation of securities such as unlisted securities, non-traded, thinly-traded and those below investment grade, valuation norms under mutual fund (MF) regulations should not apply and these securities should be valued as per the International Private Equity and Venture Capital Valuation Guidelines.

Sebi has sought comments from the public till 13 June on the proposals suggested by it

For valuation of securities, other than unlisted securities, it has been proposed that valuation norms should be carried out as per the norms prescribed under MF regulations.

It further said that the valuation norms under the MF regulations cannot be applied to private instruments held by AIFs, since the mutual fund valuation process is a rule based framework that follows a series of processes around pricing for investments in open-ended vehicles.

AIFs mostly hold private investments where one needs to delve into and present a fundamental valuation based on cash flows pertinent to the underwriting thesis, which mutual fund guidelines do not cover.

In addition, Sebi has suggested that a change in valuation methodology or approach should not be construed as a 'material change', which can significantly influence the decision of the investor to continue to be invested in the scheme of the AIF.

Consequently, AIFs should not be required to follow the process of providing an exit option to dissenting investors.

Context: The Securities and Exchange Board of India (SEBI) has proposed relaxation of rules on valuation of investment portfolio of alternative investment funds (AIFs).

Alternative investment funds (AIF)

- **About**: AIF means any fund established or incorporated in India which is a privately pooled investment vehicle which collects funds from sophisticated investors, whether Indian or foreign, for investing it in accordance with a defined investment policy for the benefit of its investors.
- **Mutual Funds Regulations**: AIFs are distinct from funds covered under the SEBI (Mutual Funds) Regulations, 1996, as well as other regulations such as the SEBI (Collective Investment Schemes) Regulations, 1999.
- **Exemptions from Registration**: Certain entities, such as family trusts for the benefit of 'relatives' as per the Companies Act, 1956, employee welfare trusts, gratuity trusts for employees, and 'holding companies' under Section 4 of the Companies Act, 1956, are exempt from registration under the AIF Regulations.

Categories of AIFs:

- **Category I AIFs:** Invest in start-ups, early stage ventures, and socially or economically desirable sectors.
  - Include venture capital funds like angel funds, SME funds, and social venture funds.
- **Category II AIFs:**
  - Not classified under Category I or Category III.
  - Do not undertake leverage except for day-to-day operational needs.
  - Include real estate funds, debt funds, private equity funds, and funds for distressed assets.
- **Category III AIFs**:
  - Employ complex trading strategies and may use leverage.
  - Include hedge funds, PIPE funds, and those investing in derivatives.

DTE May 22

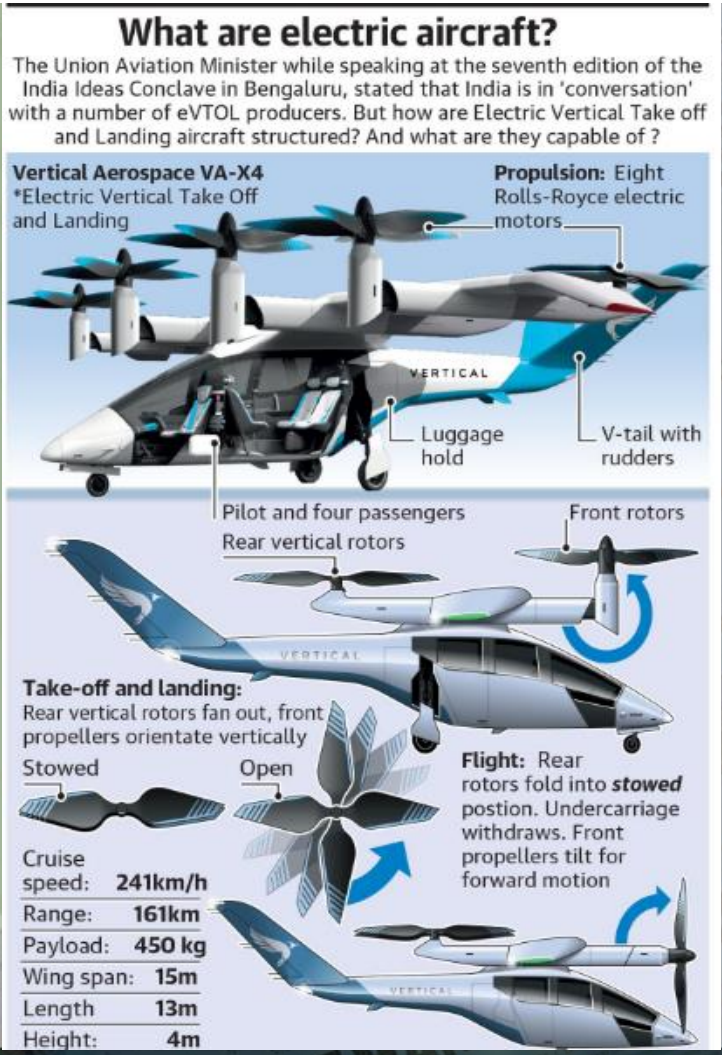
E-VTOL
(Syllabus: GS Paper 3 – Sci and Tech)

Is eVTOL a boon or bane? It depends on how we put it to use

Context: Indian Institute of Technology, Madras-incubated ePlane Company is expected to launch its a-flying taxis in Bengaluru this year but the Indian government has yet to establish clear policies regarding eVTOL flying taxis.

eVTOL Aircraft

- **About:** An electric Vertical Take-Off and Landing (eVTOL) aircraft utilizes electric power for vertical hovering, takeoff, and landing, distinguishing it from conventional aircraft.
- **Technological Advancements**: Most eVTOLs employ distributed electric propulsion technology, integrating multiple motors into the airframe for enhanced efficiency and safety.
- **Development and Innovation**: Driven by advancements in motor, battery, fuel cell, and electronic controller technologies, eVTOLs represent a significant innovation in the aerospace sector, particularly in Urban Air Mobility (UAM).
- **Applications**: eVTOLs serve various purposes including air taxi services, delivery, medical emergency assistance (EMS), cargo transport, and recreational flying.
- **Enhanced Mobility:** In the near future, eVTOLs are poised to revolutionize on-demand mobility, facilitating efficient intra- and intercity transportation and bridging the connectivity gap between urban centers and airports.



TIMES OF INDIA Page 18

FORM 17C

(Syllabus: GS Paper 2 – Polity)

'EC should disclose data...doubt is created because of want of information, delay in action'

*Former election commissioner **Ashok Lavasa** breaks down the issue of bias, turnout numbers and Form 17C in conversation with **Dipak Dash** saying there's no merit in suggesting data or votes will be manipulated, because there's a system of crosschecks. But there's need to "make things more open", because "more the transparency, more the trust".*

Opposition parties and activists allege EC is biased.

Election Commission's neutrality is always under watch, particularly tested in complaints against party in govt or its members. That's always been a challenge. But in terms of taking cognizance or responding to complaints, whether against members of party in govt, or anyone else, EC in the past has been known to take immediate action per procedure.



Q&A

Complaints, especially of violation of Model Code of Conduct (MCC), are disposed of swiftly. EC would seek a field report first to ascertain veracity of complaint to reach a prima facie view whether a case is fit to issue notice. The person is given opportunity to respond before action is initiated. When timely action isn't taken, it leads to doubts, controversies. That's when people allege EC isn't observing neutrality. This isn't new. Delay creates misgivings.

How can it be dealt with?

I've always been of the view, and had suggested even when I was in EC, that first, all complaints should be on EC's website. Action taken report should also be on the website so that people know the status of all complaints.

Second, disposal of complaints should be timebound, which should be included in MCC itself. It should specify procedure and timeline for Commission to follow. Delay of a day or two isn't an issue. Third, even political parties should take responsibility for MCC violations by their leaders, besides holding individuals accountable.

All this can be done only if there's a review of MCC in consultation with all political parties. I think there's need to make things more open. The moment EC adheres to timelines, it's one thing for people to be satisfied with action taken, but at least nobody will accuse it of inaction.

EC's not made phase-wise vote count public. The matter's reached SC.

Two aspects here. One, people are in doubt because information isn't available. But that doesn't indicate manipulation. It only creates doubt.

Two, system prescribed for conduct of polls, maintenance of records, preparation of presiding officers' diary, and statistical count of votes cast in Form 17C is very clear. A signed copy of Form 17C (the summary of votes cast in any given poll station) is to be given to polling agents of all candidates. A copy in a closed envelope is kept with EVMs, and sealed in the strong-room immediately after the material is deposited with the returning officer (RO).



In fact, if I remember right, EC's manual says presiding officer should make carbon copies, so he doesn't make a mistake. This can be accessed during counting. A system is in place to ensure the number in Form 17C at close of poll is indeed the number counted.

Precedent has been that within hours of end of poll, EC shared with public approximate numbers via media. Scrutiny as per procedure of presiding officers' diary, which also contains this data is done the day after. Once this is submitted by RO and observer, EC either decides on a repoll, or provides a more accurate number of votes cast. EC being the custodian of all these facts should disclose this data. There's no harm in making it public.

I don't think there's any merit in suggesting the data or the votes will be manipulated, because there's a system of crosschecks. Doubt is created because of want of information.

EC officers say calculate votes cast from electorate numbers and turnout percentage in public.

Technically, EC's right. Two types of people are interested. The candidate and aware citizens. Through polling agents, a candidate can know exact number of votes cast via Form 17C. But they must compile data of *all* Form 17Cs. If there are 10 candidates in an LS constituency, all of them need to collect this data from their polling agents. Such tabulation may have its own inaccuracies.

People at large don't have access to Form 17C. It's unfair for anyone to expect public to calculate votes cast by visiting the website.

It's far simpler for EC to compile and put out this data. It's like in a cricket match in olden days, when somebody would manually place the score, overs and wickets on a scoreboard. It could be said the match is on, score is being kept so there's no need for the board. But you *do* keep informing people. Since you *have* the data, therefore if you *disclose* the data, it's good for the system. More the transparency, more the trust.

There may be reservations on EC's part that these figures may change, there can be discrepancies, which will create doubt. But discrepancies can also be explained. There are one million polling stations, that many presiding officers are filling in the data; somebody can make a mistake anytime. But I don't think we should get carried away because somebody has made a mistake. Point is Form 17C is signed by an officer responsible on behalf of EC. It has legal validity.

Context: Former election commissioner addresses concerns over bias, turnout figures, and Form 17C, emphasizing the robustness of crosschecks and dismissing claims of data or vote manipulation.

Form 17C

- **About:** As per the Conduct of Election Rules, 1961, the Election Commission of India (ECI) maintains two forms: Forms 17A and 17C.
- **Purpose:** Form 17A records details of every voter who casts a vote in a polling booth, while Form 17C accounts for all the votes recorded.
- **Mandate for Presiding Officer**: Rule 49S (2) mandates the presiding officer to provide a copy of the entries made in Form 17C to the polling agents of candidates at the close of polling.
- **Information in Part I of Form 17C**: Part I includes crucial information such as EVM identification numbers, total assigned electors, voters recorded in Form 17A, voters who abstained, those not allowed to vote, and test votes.
- **Part II of Form 17C**: Part II contains the results of the counting conducted on the stipulated day.
- **Voter Turnout**: The Election Commission is not legally obligated to publish voter turnout data at aggregate levels such as constituency or state, as voter turnout is recorded at the polling station level in Form 17C, prepared and signed by the presiding officer and polling agents of candidates present.

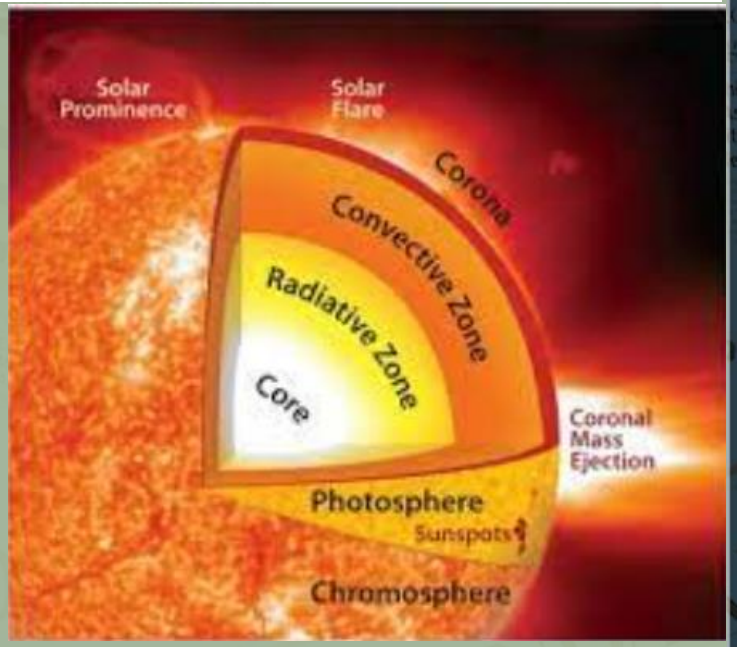
DTE May 23

SOLAR CYCLE
(Syllabus: GS Paper 1 – Geography)

Sun's magnetic field flips the script: New study places origin closer to the surface

Solar Cycle

- **About**: It is the cycle that the Sun's magnetic field goes through approximately every 11 years.
- **Magnetic Field Generation**: This charged gas moves, generating a powerful magnetic field.
  - The Sun's magnetic field goes through a cycle, called the solar cycle.
  - Every 11 years or so, the Sun's magnetic field completely flips.
  - It takes about another 11 years for the Sun's north and south poles to flip back again.
- **Effects on Sun's Surface**:
  - The solar cycle affects activity on the surface of the Sun, such as sunspots caused by the Sun's magnetic fields.
  - The middle of the solar cycle is the solar maximum, characterized by the most sunspots.
  - As the cycle ends, it fades back to the solar minimum, signaling the start of a new cycle.
- **Solar Eruptions**: Giant eruptions on the Sun, like solar flares and coronal mass ejections, increase during the solar cycle.
  - These eruptions send powerful bursts of energy and material into space.
- **Effects on Earth**: Solar activity can impact Earth, causing phenomena like auroras or affecting radio communications.
  - Extreme eruptions can even disrupt electricity grids on Earth.
- **Variation in Cycles**: Some cycles have maximums with lots of sunspots and activity, while others have very few sunspots and little activity.



Context: Scientists have long held the belief that the Sun's potent magnetic field, which triggers solar storms affecting Earth, originates deep within the star.

NDTV

May 22

UJANI DAM

(Syllabus: GS Paper 1 – Geography)

6 Drown As Boat Capsizes In Dam Backwaters In Pune



Context: Recently, tragedy struck in Maharashtra's Pune district as six individuals, including two children, drowned when their boat overturned in the Ujani dam backwaters.

Ujani Dam

- **Location**: Located on the Bhima River near Ujjani village in Solapur district, Maharashtra.
- **Construction**: Built between 1977 and 1980 for irrigation and hydroelectric power.
- **Total length:** 2,534 m.
- **Height:** 63 meters.
- **Storage capacity:** 117 TMC (live: 54 TMC, dead: 63 TMC).
- **Power generation capacity**: 12MW.
- **Bhima River**: It is a tributary of the Krishna River.
- **Course**: Originates in Bhimashankar hills near Karjat, Pune District.
  - Flows southeast through Maharashtra, Karnataka, and Telangana.
  - Merges into Krishna River at Kadlur (Raichur), Karnataka.
- **Geography**: 861 km long, bounded by Western Ghats, Balaghat Range, and Mahadeo Hills.
- **Basin area**: 48,631 sq. km, 75% in Maharashtra.
- **Major tributaries**: Sina and Nira rivers.

LIVEMINT

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PERSONALITY RIGHTS

(Syllabus: GS Paper 2 – Polity)



Johansson, OpenAI, and the question of personality rights

KHADIJA KHAN
NEW DELHI, MAY 23

HOLLYWOOD ACTOR Scarlett Johansson has expressed "shock" and "anger" over hearing the voice for GPT-4o, OpenAI's latest AI model, which she has said sounds "eerily similar" to her own voice.

In a statement issued this week, she accused OpenAI, the artificial intelligence company behind ChatGPT, of using her voice despite her earlier declining licensing requests from company CEO Sam Altman.

Johansson has joined the list of several individuals and organisations who have accused OpenAI of using their copyrighted creative works without permission.

EXPLAINED LAW

Johansson and 'Sky'

OpenAI unveiled its latest AI model called GPT-4o last week, saying it would improve on the existing features of ChatGPT. One such feature, named Voice Mode, lets users have voice conversations with the AI chatbot, and lets them choose from five kinds of voices.

Johansson said one of these voices, named 'Sky', was allegedly copying her voice. "In a time when we are all grappling with deepfakes and the protection of our own likeness, our own work, our own identities, I believe these are questions that deserve absolute clarity," Johansson said in her statement.

OpenAI later said it was pausing the availability of Sky. It added in a statement that Sky was not Johansson's voice but another voice actor's, and was "never intended to resemble hers". "We are sorry to Ms Johansson that we didn't communicate better," it said.

Other complaints

Johansson is not the first to bring up issues of copyright in relation to AI. Newspapers, including *The New York Times*, have earlier sued for copyright infringement.

Large language models (LLMs) are fed huge amounts of data, which helps them to analyse patterns and train themselves on language, visual data, computation, etc. But entities like *The NYT* have argued that this amounts to "unauthorised" use of their already published work. It also leads to a situation where chatbots compete with news publications as sources of reliable information, they have said.

Johansson accused Sam Altman's company of having a speaking AI chatbot copy her voice. OpenAI has now paused the availability of the AI tool. *Reuters, The NYT*

The Authors Guild of America filed a similar lawsuit on behalf of writers such as George R R Martin and John Grisham, alleging illegal use of the authors' copyrighted works by OpenAI.

A few months ago, unions of Hollywood actors agreed to end workers' strikes, where a key issue was how film studios could use AI in the future. Actors believed that their faces and voices could be used to create new films or shows without their consent, or without paying them. Ultimately, the studios assured actors that consent would be sought.

Personality rights in India

In India, actors such as Rajinikanth, Anil Kapoor and Jackie Shroff have approached the courts over "personality rights".

Personality rights or publicity rights are a subset of "celebrity rights" claimed by celebrities. The name, voice, signature, images, or any other feature easily identified by the public as markers of a celebrity's personality lie at the heart of personality rights. These could include poses, mannerisms, or any other distinct aspect of their public persona.

Celebrities sometimes register aspects of their personalities as trademarks to use them commercially. Footballer Gareth Bale has trademarked the heart sign he makes with his hands while celebrating a goal. The idea behind such rights is that only the creator or owner of the unique features can gain commercial benefit from them.

On May 15, the Delhi High Court protected the personality and publicity rights of Jackie Shroff while restraining various e-commerce stores, AI chatbots, etc. from misusing the actor's name, image, voice, and likeness without his consent.

The court observed that attributes "over which the plaintiff exercises exclusive control constitute his 'personality rights' and 'publicity rights'. The unauthorised use of these characteristics for commercial purposes not only infringes upon these rights but also dilutes the brand equity painstakingly built by the plaintiff over the years".

The court relied on the Delhi HC's 2010 ruling in *D.M. Entertainment Pvt. Ltd. v. Baby Gift House*, where Justice S Ravindra Bhat acted on a petition filed by a company to which singer Daler Mehndi had assigned his personality rights.

The company alleged that certain gift shops were selling dolls that were "cheap imitations of, and identical to the likeness" of Mehndi and even sang a few of his songs. It contended that this was a blatant infringement of Mehndi's right to control the commercial exploitation of his persona.

Allowing relief to the singer, the court said that the commercial use of his identity was intended to increase sales by fusing his identity with the products, thereby encashing on his goodwill and persona.

Personality rights or their protection are not defined in Indian law, and are usually seen under the rights to privacy and property.

Concepts in intellectual property rights cases, such as 'passing off' and 'deception', are usually applied in such cases while ascertaining if protection is warranted.

In a case involving Anil Kapoor, the Delhi HC granted an *ex parte*, omnibus injunction restraining 16 entities from using the actor's name, likeness, and image using technological tools like AI, face morphing, and GIFs for commercial purposes.

An omnibus injunction is granted against any unauthorised use, including against persons not mentioned in the plea.

Context: A Hollywood actor expressed "shock" and "anger" over GPT-4's voice, which she claims sounds "eerily similar" to hers, amid ongoing legal cases against OpenAI for using copyrighted works and potentially infringing on celebrities' personality rights.

Personality rights in India

- **About**: Article 21 of the Indian Constitution addresses personality rights within the broader context of privacy and publicity.
- **Protection under Copyright Law**: The Copyright Act, 1957, extends moral rights to authors and performers, allowing them to claim authorship and prevent unauthorized use of their work.
- **Personal Rights in Trademarks:** The Indian Trademarks Act, 1999, safeguards personal rights by restricting the unauthorized use of personal names and representations under Section 14.
- **Judicial Interpretation**: The Delhi High Court, in the Arun Jaitley vs Network Solutions Private Limited and Ors Case (2011), equated online and offline fame, recognizing the distinctive nature of personal names in the digital realm.

Personality Rights

- **Definition:** It refer to the right of a person to protect his/her personality under the right to privacy or property.
- **Protection from Misuse:** These rights are important to celebrities as their names, photographs, or even voices can easily be misused in various advertisements by different companies to boost their sales.
- **Comprehensive Protection:** A large list of unique personal attributes contribute to the making of a celebrity, all of which need to be protected, such as name, nickname, stage name, picture, likeness, image, and any identifiable personal property, such as a distinctive race car.
- **Difference between Publicity Rights and Personality Rights**
- **Right of Publicity**: The right of publicity refers to the right to keep one's image and likeness from being commercially exploited without permission or contractual compensation, similar to the use of a trademark.
- **Right to Privacy:** The right to privacy involves the right to not have one's personality represented publicly without permission.

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