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Neural Networks and Neuro-Law: Exploring the Frontiers of Cognitive Liberty in India

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In the confluence of neural networks and neuro-law, India confronts profound challenges to cognitive liberty, where brain-computer interfaces enable unprecedented access to mental processes, demanding robust legal safeguards against unauthorised neural data exploitation. This exploration underscores the imperative for integrating ethical governance into frameworks governing mental privacy, as technological proliferation risks eroding individual autonomy in thought formation and decision-making. Advancements in neural decoding and augmentation technologies amplify vulnerabilities, as evidenced by national jurisprudence emphasising informational self-determination. In Justice K.S. Puttaswamy (Retd.) v Union of India,[1] the Supreme Court affirmed privacy as encompassing mental integrity, extending Article 21 protections to personal data realms. Similarly, Selvi v State of Karnataka,[2] invalidated involuntary neuro-scientific techniques like narco-analysis, deeming them violations of self-incrimination under Article 20(3) and personal liberty. Maneka Gandhi v Union of India,[3] further broadened due process, linking procedural fairness to substantive rights in cognitive domains. Internationally, precedents illuminate pathways: Guido Girardi Lavin v Emotiv Inc.,[4] mandated erasure of brain data, affirming mental privacy as a fundamental right. Riggins v Nevada,[5] restricted forced psychotropic interventions, preserving cognitive autonomy. United States v Semrau,[6] scrutinised neuroimaging admissibility, highlighting evidentiary thresholds. Vinter and Others v United

[1] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[2] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263
[3] *Maneka Gandhi v Union of India* (1978) 1 SCC 248
[4] *Guido Girardi Lavin v Emotiv Inc* [2023] Corte Suprema [C.S.], Rol No. 105065
[5] *Riggins v Nevada* [1992] 504 U S 127
[6] *United States v Semrau* [2012] 693 F 3d 510 (6th Cir)

Kingdom,[7] *reinforced psychological integrity against degrading treatments. Through doctrinal analysis and comparative review, revelations emerge of legislative lacunae in India, where existing data protection inadequately addresses neural specifics. Consequently, reforms must prioritise bespoke neuro-rights, foster equitable innovation while fortifying democratic ethos against manipulative AI incursions.*

Keywords: *neural networks, neuro-law, cognitive liberty, brain-computer interfaces, mental privacy.*

INTRODUCTION

The term Cognitive Liberty is a crucial defence for mental autonomy in a time when artificial intelligence and neural technologies are changing how people think. This idea expands on traditional ideas of privacy and liberty to address new threats, such as policybrain-computer interfaces (BCIs), neuro-data collection, and AI-driven neural networks. It is defined as the right to self-determination over one's mental processes, thoughts, and consciousness, including the freedom to improve or change one's mind as well as the freedom from unwelcome interference. Cognitive liberty guarantees that people maintain sovereignty over their inner worlds, avoiding exploitation by businesses, governments, or malevolent actors when inventions like Neuralink and consumer EEG devices spread. The basis for analysing how India, with its strong constitutional structure under Article 21, may lead the way in protecting people in this neurological age, while striking a balance between human dignity and technical development, is established by this introduction.

In India, neuro-law is an interdisciplinary area that combines neuroscience, AI neural networks, and legal principles, and is becoming more well-known due to the country's quick adoption of new technologies. Using current court rulings, academic research, and global precedents, this investigation explores the function of cognitive liberty in preserving mental integrity versus neural technology. India is at the forefront of developing legal safeguards by fusing neuro-scientific insights with AI neural networks, which are systems that simulate human brain processes for legal decision-making.

Conceptual Foundations of Neural Networks and Cognitive Autonomy: In light of neuro-technologies and artificial intelligence, cognitive liberty is an extension of human rights that

[7] *Vinter and Ors v The United Kingdom* [2013] ECHR 66069/09

includes mental privacy, integrity, and self-determination. It expands upon the right to life and personal freedom guaranteed by Article 21[8] by protecting from cognitive manipulation and illegal access to brain data.[9] Cognitive liberty, according to academics, is 'the substrate of all other freedoms,' and it is crucial to avoiding the negative effects of BCIs and AI algorithms that alter cognitive processes. At the international level, it is consistent with the right to free thinking included in documents such as Article 18 of the Universal Declaration of Human Rights, which has been reinterpreted to incorporate safeguards against the intrusion of neuro-technological technologies.[10]

Neural networks in Artificial Intelligence, which process data similarly to human synapses, provide predictive analytics in legal contexts, such as risk assessment in criminal justice. If safeguards are not in place, they might potentially undermine cognitive liberty by biasing, algorithmically altering perceptions or judgments.[11] The Digital Personal Data Protection Act 2023 (DPDPA) in India reinforces this foundation and demands explicit neuro-rights, even though it is insufficient for neural-specific data.[12]

Evolution of Neuro-Law in Indian Jurisprudence: In India, neuro-law has developed as a result of broad interpretations of Article 21 that integrate neuroscience with the rights to privacy and dignity. Informational privacy was established as essential in the seminal case of K.S. Puttaswamy v Union of India,[13] which served as the foundation for neural data protection. Recently, this has been expanded to include autonomy and mental health.

The Supreme Court ruled in **Su**kdeb Saha v State of Andhra Pradesh[14] that mental health is a fundamental part of the right to life under Article 21, connecting it to the Mental Healthcare

[8] Constitution of India 1950, art 21
[9] Marcello Ienca and Roberto Andorno, 'Towards new human rights in the age of neuroscience and neurotechnology' (2017) 13 Life Sciences, Society and Policy <https://doi.org/10.1186/s40504-017-0050-1> accessed 10 May 2026
[10] José M Muñoz and José Ángel Marinaro, 'Habeas Cogitationem: A Writ to Enforce the Right to Freedom of Thought in the Neurotechnological Era' (*Tech Policy Press,* 16 April 2025) <https://www.techpolicy.press/habeas-cogitationem-a-writ-to-enforce-the-right-to-freedom-of-thought-in-the-neurotechnological-era/> accessed 10 May 2026
[11] Courtney C Radsch, 'The Battle for Cognitive Liberty in the Age of Corporate AI' (*Tech Policy Press,* 06 January 2026) <https://www.techpolicy.press/the-battle-for-cognitive-liberty-in-the-age-of-corporate-ai/> accessed 10 May 2026
[12] Kamal Kumar, 'The Dawn of Neurotechnology and its Legal Challenges' (*SCC OnLine,* 17 October 2025) <https://www.scconline.com/blog/post/2025/10/17/the-dawn-of-neurotechnology-and-its-legal-challenges/> accessed 10 May 2026
[13] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[14] *Sukdeb Saha v State of Andhra Pradesh & Ors* (2025) INSC 893

Act 2017 and highlighting the state's responsibility to provide accessible care. This decision gives mental integrity, a fundamental component of cognitive liberty, which gives constitutional standing.[15]

Additionally, the Court acknowledged menstrual health as a component of Article 21 in Dr Jaya Thakur v Government of India,[16] highlighting the larger right to physical and mental dignity, which may include cognitive rights.[17] The Supreme Court's denial of a petition in 2024 about a 'machine' controlling a man's brain indicates knowledge of probable cognitive intrusions but also demonstrates judicial scepticism toward unsupported neurotech claims.[18] To close deficiencies in the DPDPA, scholarly works that support the integration of neuro-rights[19] into Indian law suggest amending the legislation to specifically acknowledge cognitive liberty under Article 21 of the Indian Constitution.[20]

Intersection of Neural Networks and Legal Frameworks: AI neural networks, which are employed in judicial analytics and predictive policing, interact with neuro-law by mimicking cognitive functions and posing threats to individual liberties. The Supreme Court, in its decision in Selvi v State of Karnataka,[21] which outlawed non-consensual neuro-tests as breaches of self-incrimination under Article 20(3), has limited the use of forensic technologies such as Brain Electrical Oscillation Signature (BEOS) in India.[22]

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[15] Suhana Roy, 'From Policy to Right: India's Supreme Court Makes Mental Health a Constitutional Guarantee' (*Health and Human Rights,* 13 August 2025) <https://www.hhrjournal.org/2025/08/13/from-policy-to-right-indias-supreme-court-makes-mental-health-a-constitutional-guarantee/> accessed 10 May 2026

[16] *Dr Jaya Thakur v Government of India & Ors* (2026) INSC 97

[17] Rohit Patel, 'Umar Khaled's Bail Refection, Romeo Julet Clause, Menstrual Health as a Fundamental Right, UGC Regulations halted and More' (*SCC OnLine,* 05 February 2026) <https://www.scconline.com/blog/post/2026/02/05/supreme-court-january-2026-latest-judgments-and-stories/supreme-court-january-2026/> accessed 10 May 2026

[18] '"Bizarre": Supreme Court Dismisses Man's Plea To Deactivate 'Machine' Controlling His Brain' *Live Law* (11 November 2024) <https://www.livelaw.in/top-stories/bizarre-supreme-court-dismisses-mans-plea-to-deactivate-machine-controlling-his-brain-274899> accessed 10 May 2026

[19] Abinesh M, 'REGULATING NEURAL IMPLANTS AND BRAIN DATA: THE EMERGING NEED FOR NEURO-RIGHTS IN INIDA' (*Jus Corpus,* 20 December 2025) <https://www.juscorpus.com/regulating-neural-implants-and-brain-data-the-emerging-need-for-neuro-rights-in-india/> accessed 10 May 2026

[20] Somdyuti Das and Dr Rajdeep Ghosh, 'NEURO-RIGHTS IN INDIA: A LEGAL FRAMEWORK FOR THE FUTURE' (2025) 6(1) Bennett Journal of Legal Studies <https://www.bennett.edu.in/wp-content/uploads/2025/06/6.-Somdyuti-Das-Rajdeep-Ghosh.pdf> accessed 10 May 2026

[21] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263

[22] Jonathan Moens, 'Mind Reader?' (2025) 388(6748) Science <https://pubmed.ncbi.nlm.nih.gov/40373144/> accessed 10 May 2026

The necessity for stronger controls is shown by recent rulings, such as bail decisions affected by BEOS notwithstanding inadmissibility, which show continuing usage. Similar worries about AI in courtrooms throughout the world are raised by the possibility that neural-inspired algorithms might skew results and undermine cognitive liberty.[23]

The Supreme Court examined the chilling implications of surveillance on privacy in Manohar Lal Sharma v Union of India,[24] drawing comparisons to AI neural networks that track cognitive processes. India's neuro-ethical law proposals place a strong emphasis on controlling AI to stop mental manipulation.

KEY INDIAN CASE LAWS AND JUDICIAL INTERPRETATIONS

Recent cases illustrate India's engagement with neuro-law:

Justice K.S. Puttaswamy (Retd.) v Union of India:[25] Affirmed privacy as fundamental, including 'Sacred Private Space,' foundational for cognitive liberty. Privacy includes bodily autonomy, personal information, and decisional autonomy.

Independent Thought v Union of India:[26] Reinforced sexual autonomy under Article 21, extendable to mental autonomy, that sexual intercourse with a wife aged under 18 constitutes rape, even if she is over 15, aligning BNS (previously IPC) with the POCSO Act to protect child rights.

Sukdeb Saha v State of Andhra Pradesh & Ors:[27] Elevated mental health is an integral part of the right to life under Article 21, affirming that psychological well-being is essential to dignity.

Amit Kumar & Ors v Union of India & Ors:[28] Addressed student autonomy and institutional responsibility, touching on cognitive freedoms.

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[23] Dominique J Church, 'Neuroscience in the Courtroom: An International Concern' (2012) 53(5) William & Mary Law Review <https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=3437&context=wmlr> accessed 10 May 2026
[24] *Manohar Lal Sharma v Union of India & Ors* (2021) 10 SCC 1
[25] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[26] *Independent Thought v Union of India & Anr* AIR 2017 SC 4904
[27] *Sukdeb Saha v State of Andhra Pradesh & Ors* (2025) INSC 893
[28] *Amit Kumar & Ors v Union of India & Ors* (2026) INSC 128

Gulfisha Fatima v State (NCT of Delhi):[29] Balanced liberty with security in bail decisions, relevant for neurotech in investigations. The Supreme Court established a 'Nuanced Bail Jurisprudence,' distinguishing between 'Master Minds/Strategic Architects' and 'Facilitators/Ground-Level Operatives.

These interpretations, supported by the Neuro Justice Trilogy launch in 2025, signal a paradigm shift toward neuro-ethical frameworks.

INTERNATIONAL PERSPECTIVES AND COMPARATIVE ANALYSIS

Globally, the Supreme Court of Chile recognised mental privacy as a right in its 2023 decision in Guido Girardi Lavin v Emotiv Inc.,[30] which required the erasure of brain data and prohibited the marketing of devices.[31] The Neurorights Amendment to Chile's constitution safeguards mental integrity, privacy, and cognitive autonomy.[32]

In Spain, non-therapeutic mental augmentation without consent is forbidden by the 2021 Digital Rights Charter. Neuronal damage remedies are included under Mexico's 2025 Neurorights Bill. In contrast, India's Article 21[33] is in line with these; however, it is vague. According to worldwide ideas, scholars suggest embracing neurorights such as mental integrity and cognitive autonomy. In line with this, the OAS Declaration on Neuroscience calls for fair access.

FOUNDATIONS OF NEURAL NETWORKS AND COGNITIVE INTERFACES

Modern artificial intelligence and cognitive computing are based on neural networks, which were inspired by the organic makeup of the human brain. These computer models are made up of linked nodes, or artificial neurons, that use weighted connections to analyse information to recognise patterns, learn, and make decisions. By enabling direct contact

[29] *Gulfisha Fatima v State (NCT of Delhi)* (2026) INSC 2
[30] María Isabel Cornejo-Plaza et al., 'Chilean Supreme Court ruling on the protection of brain activity: neurorights, personal data protection, and neurodata' (2015) 24 Frontiers in Psychology <https://doi.org/10.3389/fpsyg.2024.1330439> accessed 10 May 2026
[31] José M Muñoz and José Ángel Marinaro, 'When Neurotechnology Erodes Freedom of Thought: The Habeas Cogitationem Writ' (*Opinio Juris,* 31 July 2025) <https://opiniojuris.org/2025/07/31/when-neurotechnology-erodes-freedom-of-thought-the-habeas-cogitationem-writ/> accessed 10 May 2026
[32] Sinchana M R & R S Sanjanaa, 'Right to cognitive liberty in a Transhumanism Era: A Case for Integration within Indian Legal Framework' (*NUALS Law Journal,* 29 June 2023) <https://nualslawjournal.com/2023/06/29/right-to-cognitive-liberty-in-a-transhumanism-era-a-case-for-integration-within-indian-legal-framework/> accessed 10 May 2026
[33] Constitution of India 1950, art 21

between the brain and external devices, cognitive interfaces, also known as Brain-Computer Interfaces (BCIs), help to close the gap between neural networks and human cognition. Applications in neuroprosthetics, mental health monitoring, and improved human capacities are made possible by this integration, but it also brings up important moral, legal, and societal issues.

Deep learning architectures like Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs) are derived from the early models, such as the Perceptron in the 1950s. Dynamic Field Theory methods in cognitive research, which root representations in perception and action, use these networks to describe higher-order processes like language grounding and decision-making. Cognitive interfaces go beyond this by decoding brain signals to operate gadgets or enhance cognition, which has the potential to transform industries like Law and Medicine. The development of neuro-technology brings it into contact with legal frameworks, especially when it comes to safeguarding the cognitive liberty, or the right to mental privacy and autonomy.

This analysis delves into the technical foundations of neuro-law, scrutinising India's transforming legal system amid pivotal international events. It meticulously explores profound ramifications of judicial, ethical, and societal issues arising from neuroscience's integration into law, highlighting adaptive reforms, global precedents, and future implications for justice and human rights.

Conceptual Foundations of Cognitive Liberty in Neuro-Technology: A person's right to govern their mental processes, including their privacy of thinking, their freedom from unapproved neural intervention, and their control over cognitive upgrades, is known as cognitive liberty. This freedom is endangered by technologies that can read, interpret, or control brain activity in the setting of neural networks and Brain-Computer Interfaces (BCIs). Although neural networks in Brain-Computer Interfaces (BCIs), including those that use fMRI or EEG, interpret brain signals to provide mind-controlled interfaces, they also produce sensitive 'Neural Data' that may disclose intentions, feelings, or ideas.

In India, Cognitive liberty, complying with Article 21, which guarantees the right to life and personal liberty, including privacy, as demonstrated in K.S. Puttaswamy v Union of India,[34]

[34] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1

where the Supreme Court recognised informational privacy as fundamental, possibly extending to neural data.[35] Drawing on Article 18 of the Universal Declaration of Human Rights, which protects the freedom of thought, Farahany's Paradigm for self-determination over brain data has redefined cognitive liberty in neuro-law as protection against 'Mind Reading' or manipulation.[36] Chile's 2021 constitutional amendment created 'Neuro-Rights', which prohibited the inappropriate use of brain data and influenced global discussion.

Neural Networks in BCIs: Technical and Ethical Intersections: Neural networks constitute the foundation for BCIs, using topologies such as transformers for multimodal data integration or RNNs for neural signal sequence processing. For example, recurrent connection is used in dynamic field theory to simulate grounded cognition, in which sensory-motor interactions give rise to representations. In reality, deep neural networks are used by gadgets like Neuralink or Emotiv's EEG headsets to interpret brainwaves, allowing for applications ranging from emotion identification to prosthetics.[37]

Ethically, this increases the possibility of using neurological data for surveillance or neuromarketing purposes. In India, non-consensual access and algorithmic bias are not addressed by the Digital Personal Data Protection Act 2023,[38] which defines neural data insufficiently within consent-based frameworks. Globally, OECD standards place a strong emphasis on cognitive liberty to combat inequality,[39] whereas the EU's GDPR classifies neurological data as sensitive biometric information under Article 9, requiring specific agreement. The first court acknowledgement of neural privacy occurred in 2023 when the Chilean Supreme Court ruled in Girardi v Emotiv, ordering the erasure of brain data and suspending device sales.

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[35] Pranay Rajesh Sonkusare, 'Neural Data Protection Under India's DPDP Act: Bridging Legislative Gaps Through Article 21 Judicial Expansion with Insights from Japan's Regulatory Approach' (*Academike,* 29 January 2026) <https://www.lawctopus.com/academike/neural-data-protection-under-indias-dpdp-act/> accessed 16 May 2026

[36] Nita A Farahany, *The Battle for Your Brain: DEFENDING THE RIGHT TO THINK FREELY IN THE AGE OF NEUROTECHNOLOGY* (St Martins Press 2023)

[37] Daniel Sabinasz et al., 'Neural dynamic foundations of a theory of higher cognition: the case of grounding nested phrases' (2024) 18 National Library of Medicine <https://doi.org/10.1007/s11571-023-10007-7> accessed 16 May 2026

[38] Digital Personal Data Protection Act 2023

[39] Marietjie Wilhelmina Maria Botes, 'Brain Computer Interfaces and Human Rights: Brave new rights for a brave new world' (Conference: ACM 2022 - on Fairness, Accountability, and Transparency, Seoul, South Korea, 2022)

Indian Constitutional Framework and Judicial Precedents: By virtue of Article 21, India's jurisprudence offers a basis for cognitive liberty. The Supreme Court ruled in Selvi v State of Karnataka[40] that involuntary narco-analysis and brain mapping were unlawful due to their infringement of privacy and self-incrimination, with a focus on mental autonomy. Expanding on this, Puttaswamy[41] added mental aspects to privacy, perhaps including neurological data as 'Informational Privacy.' The Management of Individuals' Neural Data Act, 2025 (MIND Act) in the United States is one recent proposal that reflects requests in India to modify the DPDP Act to specifically safeguard neural data with tiered inspection.[42]

However, judicial cautions on AI hallucinations in legal filings (such as Supreme Court observations in 2026 on faked citations) underscore the hazards of neural tech in courts, even though there isn't any clear Indian case law on BCIs as of 2026.[43] International views of neuro-law were influenced by the European Court of Human Rights' 2007 Hardison v UK ruling, which upheld freedom of mind under Article 9 ECHR.[44] 'Habeas Cogitationem' was added for urgent breaches of brain integrity in Mexico's General Law of Neurorights in 2025.

International Context and Comparative Analysis: Globally, Neuro-law addresses BCIs through freedom of mind and mental integrity (Article 3 of the EU Charter of Fundamental Rights). In its 2021 report on neurotechnologies, the UN called for Article 19 ICCPR rights against indoctrination.[45] Cases such as Sell v United States[46] defended cognitive liberty in the US against coerced psychotropic interventions. Neural data is considered sensitive under Colorado's 2025 privacy regulations, which permit erasure.[47]

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[40] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263
[41] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[42] Neural Data Act 2025
[43] 'Supreme Court Expresses Concern on Lawyers Using AI to Draft Petitions Containing Fake Case Citations' *The Wire* (18 February 2026) <https://thewire.in/law/supreme-court-expresses-concern-on-lawyers-using-ai-to-draft-petitions-containing-fake-case-citations> accessed 16 May 2026
[44] Jan Christoph Bublitz and Marc Jonathan Blitz, *The Law and Ethics of Freedom of Thought: Cognitive Liberty, Mental Privacy, and International Law* (Palgrave Macmillan 2025)
[45] Christoph Bublitz, 'Neurotechnologies and human rights: restating and reaffirming the multi-layered protection of the person' (2024) 28(5) The International Journal of Human Rights <https://doi.org/10.1080/13642987.2024.2310830> accessed 16 May 2026
[46] *Sell v United States* [2003] 539 US 166
[47] Sally Vazquez-Castellanos, 'Protecting the Brain: Colorado's Neural Privacy Breakthrough and the Future of Cognitive Liberty' (*Technology, Global Privacy & Data Protection,* 24 October 2025) <https://sallyvazquezcastellanosblog.com/2025/10/24/protecting-the-brain-colorados-neural-privacy-breakthrough-and-the-future-of-cognitive-liberty/> accessed 16 May 2026

In India, acquiring inspiration from Chile, academics support including neuro-rights through constitutional revisions. The OAS Declaration on Neuroscience and Human Rights (2025) advocates for fair access to improvements while promoting cognitive autonomy. Global norms are recommended in UNESCO's 2025 Ethics of Neurotechnology study, which warns of the erosion of free choice.[48]

Challenges and Recommendations for India: Social differences are exacerbated by key difficulties such as uneven access and algorithmic bias in neural networks (e.g., biased emotion recognition). Unlike the sectoral recommendations in Japan, the DPDP Act in India is not detailed enough for neural data. Suggested actions:

- Add Neuro-Rights (Mental Privacy, Cognitive Liberty) to the Constitution,
- Create a Neuro-Technology Regulatory Authority, and
- Require impact analyses for brain-computer interfaces.

Adhere to the OECD's responsible innovation criteria globally. Tiered scrutiny for neurological treatments might be enforced by judicial rules, as suggested in 2025 studies.[49]

Aspect	**Indian Context**	**International Context**
Key Rights	Article 21 (Privacy, Liberty)	Freedom of Thought (UDHR Article 18); Neurorights (Chile)
Recent Cases	Puttaswamy (2017); Selvi (2010)	Girardi v Emotiv (Chile 2023);

[48] 'Ethics of neurotechnology: UNESCO adopts the first global standard in the cutting-edge technology' (*UNESCO*, 05 November 2025) <https://www.unesco.org/en/articles/ethics-neurotechnology-unesco-adopts-first-global-standard-cutting-edge-technology> accessed 15 May 2025

[49] Sjors Ligthart, 'The right to mental integrity in the age of neurotechnology: constructing scope and exploring permissible limitations' (2025) 12(1) Journal of Law and the Biosciences <https://doi.org/10.1093/jlb/lsaf010> accessed 15 May 2025

		Sell v US (2003)
Legislation	DPDP Act 2023 (Inadequate for Neural Data	GDPR (EU); MIND Act (US 2025 Proposal)
Ethical Focuses	Mental Autonomy	Cognitive Liberty, Free Will.

CONCEPTUALISING NEURO-LAW: BRIDGING NEUROSCIENCE AND JURISPRUDENCE

The primary objective of neuro-law, an interdisciplinary combination of legal studies and neuroscience, is to re-examine conventional jurisprudential ideas from a brain science perspective. The discipline, which emerged in the early 1990s, studies how legal theories on criminal responsibility, evidence admissibility, mental health, and human rights are influenced by neuro-scientific findings, such as brain imaging, neural data processing, and cognitive processes. Neuro-Law integrates objective brain-based research to reduce biases in punishment and rehabilitation while promoting a more equal judicial system by questioning presumptions of free will, accountability, and intent. In India, this approach is especially relevant in light of the rapid breakthroughs in technology, such as Brain-Computer Interfaces (BCIs) and Artificial Intelligence (AI)-Driven Neural Networks, which connect with Article 21[50] (right to life and liberty) of the Constitution. Neuro-Law advocates for changes to solve ethical gaps in data privacy and cognitive autonomy on a global scale, drawing on precedents in nations such as the US and Chile. This paradigm preserves dignity in a time of neuro-technology while also enhancing jurisprudence.

Understanding Neural Networks in the Neuro-Law Paradigm: To advance Neuro-Law, Neural Networks, which include both biological brain structures and Artificial Intelligence (AI) models that simulate synaptic connections, are essential.[51] In biology, they relate to the

[50] Constitution of India 1950, art 21

[51] Laraib Saleha Bhatti et al.,'The Future of Law: How Neuroscience is Reshaping the Legal System' (2024) 5(2) Qlantic Journal of Social Sciences and Humanities <https://www.researchgate.net/publication/387802073_The_Future_of_Law_How_Neuroscience_is_Reshaping_the_Legal_System> accessed 15 May 2026

way that information is processed by linked neurons, which is examined in neuroscience for legal purposes, such as determining impaired ability or intent.[52] Direct Brain-to-Machine connections are made possible by AI Neural Networks, such as the deep learning algorithms in BCIs, which can improve cognition or decode thoughts. This convergence expands the boundaries of cognitive liberty, including the freedom from outside influence, the right to mental privacy, and the right to self-determination.[53] Neural networks threaten conventional jurisprudence by obfuscating the distinction between cognition and action, requiring revisions to evidence and privacy regulations in India, where AI usage in neurology and healthcare exploded around 2020.[54] Neural data is classified as sensitive by international frameworks such as the EU's GDPR, while India's Digital Personal Data Protection Act 2023 offers basic safeguards but isn't detailed enough for BCIs.

Conceptual Framework of Cognitive Liberty: An extension of freedom of thinking, cognitive liberty guards against unlawful access to or modification of mental states, including mental autonomy and privacy. It develops from informational privacy to protect neurological data from BCIs or AI-driven monitoring, and it is rooted in Articles 19 and 21. It discusses the dangers of neuro-surveillance in the national environment, where EEG sensors track workers' thoughts and may violate their dignity.[55]

Internationally, with an emphasis on cognitive liberty in the face of AI breakthroughs, the UN Special Rapporteur on Privacy (2025) promoted model rules on neuro-data.[56] Chile's 2021 constitutional amendment, which protects brain activity as psychological integrity, defines neuro-rights and has an impact on international debate.[57] 'Human in the Loop' models are

[52] Patrick Magee et al., 'Beyond neural data: Cognitive biometrics and mental privacy' (2024) 112(18) Neuron <https://doi.org/10.1016/j.neuron.2024.09.004> accessed 15 May 2026
[53] Paul W Grimm and Nita A Farahany, 'The Battle for Your Brain: A Legal Scholar's Argument for Protecting Brain Data and Cognitive Liberty' (2024) 107(3) Judicature <https://judicature.duke.edu/wp-content/uploads/sites/3/2024/03/FARHANY-Vol-107-No-3.pdf> accessed 15 May 2026
[54] Tithishri Kundu and Mainak Bardhan, 'Artificial intelligence in neurology, ethics, recent guideline, and law-an Indian perspective' (2025) 16 Frontiers in Neurology <https://doi.org/10.3389/fneur.2025.1515041> accessed 15 May 2026
[55] Ekaterina Muhl and Roberto Andorno, 'Neurosurveillance in the workplace: do employers have the right to monitor employees' minds?' (2023) 5 Frontiers in Human Dynamics <https://www.frontiersin.org/journals/human-dynamics/articles/10.3389/fhumd.2023.1245619/full> accessed 15 May 2026
[56] Bhavya Salotra, 'Lack of international model law for neurotechnology and neurodata raises privacy concerns' *JURIST* (22 October 2025) <https://www.jurist.org/news/2025/10/lack-of-international-model-law-for-neurotechnology-and-neurodata-raises-privacy-concerns/> accessed 15 May 2026
[57] Simon Spichak, 'The Controversial Push for New Brain and Neurorights' (2025) 27 Journal of Medical Internet Research <https://www.jmir.org/2025/1/e72270/> accessed 15 May 2026

included in India's 2023 ethical standards for AI in healthcare by the ICMR, which guarantee responsibility in neural data processing and are consistent with the concepts of cognitive liberty.

Legal Framework Governing Neural Networks and Cognitive Liberty in India: Fortunately, there are still gaps in neural technology; India's framework blends constitutional liberties with expanding data laws. The DPDPA 2023 does not directly address neuro-rights, leaving consumer BCIs vulnerable, even though it classifies brain data as personal, requiring encryption and authorisation. Neuro-cognitive resilience is incorporated into the Mental Healthcare Act 2017 to address ethical shortcomings in mental health; nevertheless, BCI regulations are not included.[58] By making medical treatments and algorithms non-patentable, Sections 3(i) and 3(k) of the Patents Act 1970 limit BCI innovations and impede innovation.[59] The 2017 Medical Device Regulations govern BCIs nationally, although they do not include a hazard analysis for brain data.[60] Internationally, the US MIND Act (2025) gives the FTC the authority to prevent the exploitation of neurological data; India might adopt this approach.[61] A comparison with China's Algorithm Recommendation Regulation (2022) demonstrates the necessity of transparency requirements for AI neural networks in India.[62]

Recent Case Laws and Judicial Interpretations in India: The legal treatment of neuroscience in India has advanced, with a focus on cognitive liberty. The Supreme Court declared in Selvi

[58] S Surya et al., 'NEURO COGNITIVE AND RESILIENCE LEGAL FRAMEWORK FOR MENTAL HEALTHCARE IN INDIA: ADDRESSING ETHICAL AND REGULATORY DEFICITS IN THE MENTAL HEALTH ACT 2017' (2025) 23(S6) Lex-Localis: Journal of Local Self-Government <https://doi.org/10.52152/b915zj96> accessed 15 May 2026

[59] Cheran S, 'The Indian Legal Challenges of Brain-Computer Interface Patents and Data Privacy' (*Khurana & Khurana,* 02 December 2025) <https://www.khuranaandkhurana.com/the-indian-legal-challenges-of-brain-computer-interface-patents-and-data-privacy> accessed 15 May 2026

[60] Shivnesh Kumar Singh, 'Biomedical Patent of Brain-Computer Interface: Navigating India's IP Protection Framework' (*Global Patent Filing,* 19 February 2025) <https://www.researchgate.net/publication/393471693_Biomedical_Patent_of_Brain-Computer_Interface_Navigating_India's_IP_Protection_Framework> accessed 15 May 2026

[61] Kuhu Badgi and Taylar Rajic, 'When Thought Becomes Data: The MIND Act and the Coming Debate Over Neurotechnology' (*Center for Strategic and International Studies,* 04 November 2025) <https://www.csis.org/analysis/when-thought-becomes-data-mind-act-and-coming-debate-over-neurotechnology> accessed 15 May 2026

[62] Taimur Aimen, 'Cognitive freedom and legal accountability: Rethinking the EU AI act's theoretical approach to manipulative AI as unacceptable risk' (2025) 1 Cambridge Forum on AI: Law and Governance <https://www.cambridge.org/core/journals/cambridge-forum-on-ai-law-and-governance/article/cognitive-freedom-and-legal-accountability-rethinking-the-eu-ai-acts-theoretical-approach-to-manipulative-ai-as-unacceptable-risk/45F379C0707D7A415C042BB08088F88F> accessed 15 May 2026

v State of Karnataka[63] that involuntary Narco-Analysis and Brain Mapping violate Article 20(3) (Self-Incrimination) and Article 21, which protects mental integrity by emphasising cognitive origins rather than expression.[64] The groundwork for brain data protection under DPDPA was laid by K.S. Puttaswamy v Union of India,[65] which extended privacy to encompass informational and decisional elements. Recently, Sukdeb Saha v State of Andhra Pradesh[66] indirectly supported cognitive liberty in educational neurotech by elevating mental health to a constitutional protection under Article 21, requiring stigma-free surroundings and easily available therapy. Relevant to AI brain manipulation, psychological coercion was found to violate self-incrimination in Nandini Satpathy v P.L. Dani.[67] Paralleling India's privacy trend, the Chilean Supreme Court's 2023 verdict (Rol N° 1.080-2020) ordered Emotiv Inc. to erase neurological data, confirming mental privacy as a human right.

International Context and Comparative Analysis: Globally, neuro-law incorporates neuroscience into the legal system. For example, in the US, responsibility is determined by fMRI, but in India, expert evidence is relied upon. Chile's historic 2021 neuro-rights law, which prohibits BCIs from affecting cognitive liberty, influenced UN findings in 2025 that called for international model laws. The GDPR in the EU provides more stringent safeguards than the DPDPA in India, treating brain data as special-category health information.[68] Similar to India's Selvi limitations, empirical research conducted in Australia (up until 2023) demonstrates the use of neuroimaging in sentencing. India's BCI IP problems under the Patents Act may be modelled after the UK's Copyright, Designs and Patents Act (1988), which assigns programmers credit for AI-generated works.[69] The 2025 UNESCO proposal on neuro-technology ethics calls for international norms and exhorts India to comply with fair access.

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[63] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263

[64] Kunal J Umale, 'Neuro-Technology, Brain Data, and Criminal Justice: Future Challenges to Self-Incrimination and Privacy' (2026) 12(9) International Journal of Innovative Research in Technology <https://ijirt.org/publishedpaper/IJIRT192205_PAPER.pdf> accessed 15 May 2026

[65] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1

[66] *Sukdeb Saha v State of Andhra Pradesh & Ors* (2025) INSC 893

[67] *Nandini Satpathy v Dani (P L) & Anr* (1978) 2 SCC 424

[68] Prof Dr Phil Guilherme Maia de Oliveira Wood et al., 'The Protection of mental privacy in the area of neuroscience: Societal, legal and ethical challenges' (*European Parliamentary Research Service*) <https://www.europarl.europa.eu/RegData/etudes/STUD/2024/757807/EPRS_STU(2024)757807_EN.pdf> accessed 15 May 2026

[69] Shravya Mohan, 'Brain-Computer Interfaces and The Ownership of Thoughts' (*Naya Legal*) <https://www.nayalegal.com/brain-computer-interfaces-and-the-ownership-of-thoughts> accessed 15 May 2026

Challenges, Ethical Considerations, and Future Directions: The primary challenges include patent restrictions that limit the advancement of BCI, uncontrolled brain data in consumer electronics, and the possibility of exploitation. According to Oxford research (2024), brain-jacking vulnerabilities pose an ethical danger to autonomy.[70] Post-2025 initiatives in India, such as the Neuro-Justice Trilogy, promote the use of mindfulness in rehabilitation and help close the gaps between neuro-law and other fields.[71] Prospects for the future:

- Adopt FDA-like BCI criteria,
- Create a Neuro-technology Authority for ethical approvals, and
- Amend DPDPA to codify neuro-rights.

For extensive revisions, model US state legislation abroad (such as Colorado's 2024 Neural Data Safeguards). Proactive regulation will guarantee that innovation is fostered by cognitive liberty without sacrificing dignity.[72]

COGNITIVE LIBERTY IN THE INDIAN CONSTITUTIONAL LANDSCAPE

As neuro-technologies evolve at a rapid pace, cognitive liberty, which includes the rights to mental self-determination, privacy of ideas, and autonomy over cognitive processes, has become more and more important in India's constitutional framework.[73] In order to defend against new risks such as Brain-Computer Interfaces (BCIs) and Neural Data Exploitation, cognitive liberty expands on conventional ideas of privacy, which are rooted in Article 21 of the Constitution, which guarantees the right to life and personal liberty.[74] In K.S. Puttaswamy

[70] Savannah Beck et al., 'Media Representation of the Ethical Issues Pertaining to Brain-Computer Interface (BCI) Technology' (2024) 14(12) Brain Sciences <https://doi.org/10.3390/brainsci14121255> accessed 15 May 2026

[71] 'India Witnesses a Landmark Convergence of Law and Neuroscience with the Lokarpana of the "Neuro Justice Trilogy"' *Business-Standard* (27 December 2025) <http://ww.business-standard.com/content/press-releases-ani/india-witnesses-a-landmark-convergence-of-law-and-neuroscience-with-the-lokarpana-of-the-neuro-justice-trilogy-125122700001_1.html> accessed 15 May 2026

[72] Sophie Chenier et al., 'Neurotechnology, Cognitive Liberty, and the Law: Building a New Legal Architecture for Mental Autonomy in the Digital Age' (2023) 2(4) Legal Studies in Digital Age <https://jlsda.com/index.php/lsda/article/view/335> accessed 15 May 2026

[73] Karan Kumar, 'PRIVACY IN INDIA: UNPACKING THE JURISPRUDENCE BEHIND AND IMPACT AFTER PUTTASWAMY JUDGMENT' (*Hindu College Gazette,* 29 October 2025) <https://www.hinducollegegazette.com/post/privacy-in-india-unpacking-the-jurisprudence-behind-and-impact-after-puttaswamy-judgment> accessed 15 May 2026

[74] Gokul B, 'NEUROTECH AND THE INDIAN CONSTITUTION' (*Record of Law,* 29 August 2025) <https://recordoflaw.in/neurotech-and-the-indian-constitution/> accessed 15 May 2026

v Union of India,[75] the Supreme Court's broad interpretation acknowledged privacy as a basic right, encompassing mental and informational dimensions, paving the way for tackling neuro-law issues. Cognitive liberty must be included in India's legal framework as hazards to mental integrity increase as AI-integrated neural networks decipher brain signals.[76] This investigation explores its constitutional roots, technical ramifications, contemporary case law, global parallels, and potential future directions, arguing for proactive legislation to protect human dignity in the age of neuro-technology.

Conceptual Foundations: Embedding Cognitive Liberty in Article 21: India's growing jurisprudence of Article 21, which has evolved from merely physical protections to include mental and psychological safeguards, offers a strong foundation for cognitive liberty. The nine-judge panel that rendered the landmark K.S. Puttaswamy v Union of India[77] ruling emphasised autonomy, dignity, and informational privacy while establishing privacy as a fundamental right under Articles 14, 19, and 21.[78] This decision made it clear that 'Mental Privacy' is essential in the fight against data profiling and monitoring, opening the door for its application to neurological data.[79] According to academics, cognitive liberty, which guards against illegal access to ideas through neuro-technologies, is a 'Natural Evolution' of this privacy theory.

Before this, Selvi v State of Karnataka[80] declared that the forceful use of Narco-Analysis, Polygraph Exams, and Brain Electrical Oscillation Signature (BEOS) profiling was unlawful, citing violations of Article 20(3) and the mental privacy safeguards of Article 21. The Court set a precedent for cognitive safeguards by describing coercive interference with mental processes as an insult to individual liberty and dignity. This is extended to modern challenges by recent studies, which call for the explicit acknowledgement of neuro-rights in

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[75] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[76] Nivetha Baskar, 'NEURO-RIGHTS AND THE INDIAN CONSTITUTION: SAFEGUARDING COGNITIVE LIBERTY IN THE AGE OF BRAIN-SURVEILLANCE' (2025) 5(12) Indian Journal of Legal Review <https://ijlr.iledu.in/neuro-rights-and-the-indian-constitution-safeguarding-cognitive-liberty-in-the-age-of-brain-surveillance/> accessed 15 May 2026
[77] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[78] 'The right to life and personal liberty under Article 21: A timeline' (*Supreme Court Observer,* 26 June 2025) <https://www.scobserver.in/journal/the-right-to-life-and-personal-liberty-under-article-21-a-timeline/> accessed 15 May 2026
[79] Mahima Garg, 'In the age of algorithm, we must revitalize the conversation on the 'freedom of thought'' *The Leaflet* (02 June 2025) <https://theleaflet.in/digital-rights/in-the-age-of-algorithm-we-must-revitalise-the-conversation-on-the-freedom-of-thought> accessed 15 May 2026
[80] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263

order to combat manipulations powered by AI. In addition, the 2025 legal scholarly debate asserts that cognitive liberty is essential to Article 21's 'Right to Life with Dignity', bringing it into compliance with international human rights standards.

Neural Networks: Technological Threats and Legal Implications: Neural networks, which incorporate artificial intelligence and biological brains, present significant problems through brain-computer interfaces (BCIs) and neuro-feedback devices that decode and affect thoughts.[81] Consumer-grade EEG devices are available in India from start-ups like Neuphony and international companies for productivity and well-being, but uncontrolled brain data collection raises concerns. Although the Digital Personal Data Protection Act 2023 deals with personal data, it treats brain signals in a confusing manner and does not consider them sensitive, which allows for possible exploitation without strict consent or purpose constraints.[82]

In Kaushal Kishor v State of UP, the Supreme Court extended Article 21 safeguards to private sector acts, which might make tech companies liable for breaches involving cognitive data. Consumer BCIs might, however, take advantage of weaknesses in the IT Rules, 2021, undermining mental autonomy, in the absence of specific neuro-legislation. Emerging issues include the absence of ethical standards for the use of neuro-tech in fields like education and employment, as well as algorithmic biases in brain decoding that may make inequality worse.

Recent Case Laws: Evolving Jurisprudence on Mental Privacy and Autonomy: Indian jurisprudence is still developing, and recent decisions have strengthened cognitive safeguards. The Supreme Court linked mental health to dignity and autonomy in Sukdeb Saha v State of Andhra Pradesh,[83] ruling that it is an essential part of Article 21's right to life and requiring the state to take action for easily available counselling and stigma-free

[81] Nar Hari Singh, 'From Thoughts To Trials Regulating Brain Data in the Legal System' *Daily Excelsior* (08 July 2025) <https://www.dailyexcelsior.com/from-thoughts-to-trials-regulating-brain-data-in-the-legal-system/> accessed 15 May 2026

[82] Akshara Rajratnam, 'Mind Reading and the Law: India's Next Privacy Challenge' *The Rise* (06 December 2025) <https://therise.co.in/2025/12/mind-reading-and-the-law-indias-next-privacy-challenge/> accessed 15 May 2026

[83] *Sukdeb Saha v State of Andhra Pradesh & Ors* (2025) INSC 893

surroundings.[84] This judgment elevates mental well-being to a constitutional obligation, potentially extending to protections against neuro-technological harms.

Cases involving cognitive augmentation may benefit from the emphasis placed on dignity under Article 21 in Vikash Kumar v Union Public Service Commission, which also addressed rights adaptation to technological requirements. In the more recent case of Dr Jaya Thakur v Government of India,[85] the Court expanded the nexus of mental health by holding that menstrual health is covered by Article 21, which includes physical autonomy and privacy. Building on Selvi, scholarly ideas like those in Neural Surveillance and Indian Evidence Law provide an evidential framework for brainwave data admissibility based on neuro-rights.[86] In the Emotiv case, Chile's Supreme Court issued an international ruling that protected mental privacy under constitutional neurorights by ordering the destruction of brain data.

International Context: Comparative Insights for India: Neuro-rights are developing quickly on a global scale. The first worldwide regulatory framework is UNESCO's Recommendation on the Ethics of Neuro-technology, which calls for the ethical control of neurological data in order to safeguard human rights.[87] The MIND Act 2025, a landmark piece of neuro-technology regulation in the US, was sponsored by Senators Schumer, Cantwell, and Markey with the goal of protecting brain data from exploitation.[88]

Neuro-rights, such as mental privacy and integrity, were pioneered by Chile's 2021 constitutional revisions, which had an impact on decisions like the 2023 Emotiv case. In 2025, the Basque region of Spain addressed the gaps in neurological data protection by introducing the first neuro-rights law in Europe. While UNESCO's 2022 studies and the UN's 2021 analysis underline the implications for human rights, the OECD's 2019 Recommendation on Responsible Innovation in Neuro-technology places a strong emphasis on safety and

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[84] Manik Inder Singh Sethi et al., 'The Digital Personal Data Protection Act 2023: Implications for Mental Healthcare Practice in India' (2025) Indian Journal of Psychological Medicine <https://doi.org/10.1177/02537176251370651> accessed 15 May 2026

[85] *Dr Jaya Thakur v Government of India & Ors* (2026) INSC 97

[86] Aayushi Bhargava, 'The Intersection of Law and Neuroscience: Implications On Law of Evidence' (*Manupatra,* 19 July 2024) <https://articles.manupatra.com/article-details/The-Intersection-of-Law-and-Neuroscience-Implications-On-Law-of-Evidence> accessed 15 May 2026

[87] Paul Maynard, 'UNESCO Adopts First Global Framework on Neurotechnology Ethics' (*Global Policy Watch,* 12 January 2026) <https://www.globalpolicywatch.com/2026/01/unesco-adopts-first-global-framework-on-neurotechnology-ethics/> accessed 15 May 2026

[88] Kristen Mathews, 'The MIND Act: Balancing Innovation and Privacy in Neurotechnology' (*Cooley,* 25 September 2025) <https://www.cooley.com/news/insight/2025/2025-09-25-the-mind-act-balancing-innovation-and-privacy-in-neurotechnology> accessed 15 May 2026

equality.[89] Four fundamental neuro-rights are proposed by academics such as Ienca and Andorno (2017): mental privacy, integrity, continuity, and cognitive liberty. Brazil, Mexico, and Uruguay are Latin American countries that have adopted Chile's data protection laws. To promote international alignment, India should take inspiration from these and change the DPDPA or Article 21 to specifically include neuro-rights.

Challenges and Future Directions: Towards Neuro-Rights Legislation: The main obstacles include unequal access to neuro-technologies, ethical conundrums in the integration of AI and brain systems, and regulatory bottlenecks. Data commercialisation, vulnerabilities in vital areas, and algorithmic biases must all be addressed by India's framework. Future directions, motivated by UNESCO and Chile, support enshrining neuro-rights through specific legislation or constitutional modifications. Among the recommendations are the creation of an impartial neuro-regulatory body, ethical impact analyses, and global partnerships for standardised norms. In India's digital future, this proactive strategy would guarantee the flourishing of cognitive liberty while striking a balance between innovation and human rights.

REGULATORY CHALLENGES: NEURAL DATA GOVERNANCE AND ETHICAL RISKS

India is at the intersection of technology innovation and human rights protection in the rapidly changing fields of neural networks and neuro-law. Although neuro-technology, which includes Brain-Computer Interfaces (BCIs) and Neural Data Processing, has great potential for improving healthcare and cognitive function, it also poses serious threats to cognitive liberty, the right to mental autonomy, and privacy. Regulations such as India's Digital Personal Data Protection Act 2023 are inadequate in light of brain data, which discloses private thoughts, feelings, and subconscious processes, requiring a sophisticated approach.

Conceptual Gaps in India's Data Protection Framework: Brain data is not well handled under India's DPDP Act, which was passed in 2023, despite being a major milestone in the handling of personal data. Informed permission is meaningless since brain data often contains subconscious biometric streams, even though the Act's consent-based paradigm

[89] *Global Perspectives on NeuroAI Policy* (International Neuroethics Society, 2025)

presumes conscious knowledge. Critics claim that this compromises Article 21's basic rights, which safeguard life and liberty, and creates regulatory loopholes. For instance, in 2023, the Indian Council of Medical Research (ICMR) released ethical guidelines for AI in healthcare, emphasising data ownership and bias mitigation. However, non-medical neuro-tech cannot enforce these criteria. Internationally, the EU's General Data Protection Regulation (GDPR) classifies neural data as sensitive, requiring explicit safeguards, while UNESCO's 2025 Recommendation on the Ethics of Neuro-technology urges mental privacy protections. India could change the DPDP Act to specifically cover neuro-data, bringing it into compliance with international norms and avoiding abuse.

Ethical Implications of Neural Data Exploitation: Ethical risks in neural data governance include unauthorised access, algorithmic bias, and cognitive manipulation. In India, vulnerabilities are increased by the lack of neuro-specific regulations, especially in AI-driven neurology, where problems with data quality might have discriminatory effects. Drawing comparisons to Chile's constitutional revisions, the Bennett Journal of Legal Studies (2025) emphasises the necessity of 'neuro-rights' to safeguard mental integrity. This presents ethical questions about cognitive liberty since BCIs may allow for unconsented behavioural prodding or surveillance. Internationally, the Chilean Supreme Court recognised brain data as sensitive biometric information in its 2023 decision in Girardi v Emotiv and ordered its destruction.[90] Similar to this, California's 2024 law and Colorado's 2024 Privacy Act amendment regard neurological data like medical information and need strict protections. Adopting comparable standards might ensure ethical innovation in India by reducing dangers such as targeted advertising or insurance discrimination.[91]

Judicial Precedents on Mental Privacy in India: Indian jurisprudence provides foundational protections but requires evolution for neuro-tech. Involuntary narco-analysis and brain mapping were declared unlawful by the Supreme Court in the historic Selvi v State of Karnataka (2010) case, which violated Articles 20(3) and 21 by invading mental privacy. In K.S. Puttaswamy v Union of India, this precedent was upheld, confirming privacy as a basic

[90] *Guido Girardi Lavin v Emotiv Inc* [2023] Corte Suprema [C.S.], Rol No. 105065
[91] Laura Y Cabrera et al., 'Neurotechnology Governance in the United States: Gaps and Opportunities' (2026) 40(2) Bioethics <https://doi.org/10.1111/bioe.70062> accessed 15 May 2026

right that includes informational autonomy.[92] In light of the expansion of BCI, recent debate, such as that found in the 2025 Record of Law study, argues that neuroprivacy has to be raised to a basic right. Internationally, Chile's 2021 constitutional revision safeguards mental integrity, while the U.S. MIND Act (2025) requires the FTC to investigate neurological data privacy.[93] According to From Thoughts to Trials (2025), Indian courts might use Puttaswamy to ban the collection of brain data to forbid non-consensual cognitive interference.

International Lessons and Pathways for India: Neurotech regulations across the world prioritise preventative measures. The 2025 framework from UNESCO addresses prejudice and consent gaps by promoting fair access and outlawing coercive usage. While Latin American countries like Mexico and Brazil propose constitutional neurorights, the EU AI Act (2024) include neurorights to prevent manipulation. Although balanced frameworks are recommended by the 2025 India AI Governance Guidelines, adoption is slow.[94] Insights from the Emotiv case in Chile highlight the necessity of clear neurodata safeguards. India should pass specific neuro-rights laws and create an AI Governance Group to uphold moral principles, guaranteeing that cognitive liberty complies with global standards and encouraging creativity.

In conclusion, bridging these multifaceted regulatory challenges demands proactively integrating robust ethical principles, such as transparency, accountability, equity, and human-centric governance, directly into statutory frameworks, thereby fortifying India's cognitive frontiers against emergent risks like algorithmic bias, quantum-enabled cyber threats, data sovereignty erosion, and unchecked AI proliferation.

JUDICIAL DIGITISATION AND NEURO-TECHNOLOGICAL ADJUDICATION

The e-Courts Mission Mode Project Phase III (2023–2027), which costs Rs. 7,210 Crore, has accelerated India's judicial digitalisation by enabling virtual hearings, paperless courts, and

[92] Aishwarya, 'Neuroprivacy and Brain Data: The Next Frontier of Fundamental Rights' (*Record of Law,* 07 February 2026) <https://recordoflaw.in/neuroprivacy-and-brain-data-the-next-frontier-of-fundamental-rights/> accessed 15 May 2026

[93] Beth Do et al., 'PRIVACY AND THE RISE OF "NEURORIGHTS" IN LATIN AMERICA' (*Future of Privacy Forum,* 20 March 2024) <https://fpf.org/blog/privacy-and-the-rise-of-neurorights-in-latin-america/> accessed 15 May 2026

[94] Abeer Malik, 'Mind over Machine: Navigating the Legal and Ethical Frontier of Neurotech' (*The Petrie-Flom Center,* 27 February 2025) <https://petrieflom.law.harvard.edu/2025/02/27/mind-over-machine-navigating-the-legal-and-ethical-frontier-of-neurotech/> accessed 15 May 2026

the digitisation of over 637 Crore pages of records.[95] This change affects neuro-technological adjudication, where neuroscience tools like brain-computer interfaces (BCIs) and neural data analysis enhance the evaluation of the evidence but also raise important ethical concerns regarding privacy, cognitive liberty, and the right to mental autonomy. India must strike a balance between innovation and human rights in the face of global advancement, drawing on international examples such as Chile's 2023 Supreme Court ruling on brain data privacy and cases like Selvi v State of Karnataka.[96]

Evolution of Neuro-Law in Indian Jurisprudence: In India, neuro-law—the nexus between neuroscience and law- has developed as a result of significant decisions that prioritise mental privacy. Brain Electrical Oscillation Signature (BEOS) testing and involuntary narco-analysis were ruled unlawful by the Supreme Court in the case of Selvi v State of Karnataka, citing violations of Articles 20(3) and 21. This precedent, which protects against forced brain data extraction and aligns with cognitive liberty as mental autonomy, has been validated by recent studies. The K.S. Puttaswamy v Union of India[97] verdict expanded Article 21 to include informational privacy, potentially including neurological data as private brain activity. UNESCO's 2023 research on neuro-technology ethics, which advocates for protections against brain modification, has impacted India's discussion of the application of Puttaswamy to neuro-technology. Citing Chile's constitutional neuro-rights changes, recent research from 2025 suggests judicial enlargement of Article 21 for neurological protections.

Neural Data Privacy under the DPDP Act and Beyond: In terms of data privacy, India's Digital Personal Data Protection Act 2023 is inadequate for neurological data since it does not provide clear definitions for information obtained from the brain. Under Puttaswamy's tripartite privacy (physical, mental, and informational), a 2026 study challenges its consent-based paradigm, claiming that brain data, which includes thoughts and emotions, needs more safeguards. Although the Court expanded rights against private companies in Kaushal Kishor v State of U.P., there are still loopholes for consumer BCIs like Neuralink implants. While Colorado's 2024 biological data legislation provides tiered examination, the EU's GDPR (Article 9) categorises neurological data as sensitive biometrics. Echoing the OECD's

[95] 'Digitization of Courts' (*PIB,* 12 February 2026) <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2227226&reg=3&lang=2> accessed 15 May 2026
[96] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263
[97] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1

2019 responsible innovation principles, Indian suggestions call for DPDP changes for 'Neuro-Rights,' including cognitive liberty, to avoid misuse in adjudication.

Ethical Challenges in Neuro-Technological Evidence Adjudication: Reliability and consent are ethical conundrums in neuro-technological adjudication, which uses instruments such as functional MRI (fMRI) for lie detection or EEG for intent evaluation. Selvi (2010)[98] disproved forced brain mapping in India, but new Adaptive Deep Brain Stimulation (aDBS) increases the risk of autonomy in criminal cases.[99] Justice issues, such as biased neural data interpretation escalating inequality, are highlighted in a 2025 scoping assessment.[100] Avoiding injury from 'Brain Jacking', unauthorised neural control, as demonstrated in fictitious workplace neuro-surveillance incidents, is required by ethical non-maleficence.[101] Globally, Chile's 2023 Emotiv verdict required data destruction to safeguard mental integrity, while the U.S. FDA's clearance of responsive neuro-stimulation highlights privacy issues. To preserve dignity, Indian courts must include epistemic humility while admitting the limits of neuro-technology.

International Perspectives on Cognitive Liberty and Neuro-rights: Global frameworks are the source of cognitive liberty, or the absence of neural interference. Neuro-rights were established by Chile's 2021 constitutional amendment, which was maintained in the Supreme Court's 2023 ruling against Emotiv for collecting brain data without authorisation. A Universal Declaration on Neuro-technology Rights that addresses prejudice and autonomy is proposed in UNESCO's IBC report from 2021. For ethical governance, the OECD's 2019 Recommendation places a strong emphasis on multidisciplinary cooperation. In contrast to Mexico's 2023 Neuro-rights Law, which includes habeas cogitationem for neuronal integrity, India's 2025 plans incorporate them into Article 21. India lags, according to comparative

[98] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263
[99] Lea Haag et al., 'Ethical gaps in closed-loop neurotechnology: a scoping review' (2025) 8 Npj Digital Medicine <https://doi.org/10.1038/s41746-025-01908-4> accessed 15 May 2026
[100] Liam J Robertson et al., 'Ethical Governance Strategies for the Responsible Innovation of Neurotechnologies: A Scoping Review' (2025) 22 Journal of Bioethical Inquiry <https://doi.org/10.1007/s11673-025-10440-9> accessed 15 May 2026
[101] Er Kritika, 'Ethical Frontiers: Navigating the Intersection of Neurotechnology and Cybersecurity' (2025) 6(1) Journal of Experimental Neurology <https://www.scientificarchives.com/article/ethical-frontiers-navigating-the-intersection-of-neurotechnology-and-cybersecurity> accessed 15 May 2026

analysis, which calls for compliance with ICCPR Article 18 (freedom of thinking) to combat algorithmic biases in neuro-adjudication.[102]

Policy Recommendations for Safeguarding Cognitive Liberty: India should pass neuro-rights laws that formalise mental privacy and agency as extensions of Article 21 to strengthen cognitive liberty. Recommendations include creating an ethical board in accordance with UNESCO norms, requiring informed consent in neuro-adjudication, and modifying DPDP for neural data tiers. According to the OECD, multidisciplinary cooperation and public involvement might lessen prejudices. Equitable access to cognitive enhancers is ensured internationally by following Chile's example and UN agreements like the ICCPR. According to Selvi[103] and Puttaswamy,[104] judicial training in neuro-ethics will stop abuses of dignity and promote a healthy neuro-legal ecology.

INTERNATIONAL PERSPECTIVES AND INDIA'S STRATEGIC POSITIONING

Cognitive liberty, or the right to mental autonomy, privacy, and independence from neural interference, is changing as a result of the convergence of neural networks, advanced AI systems that imitate brain functions and neuro-law, the multidisciplinary discipline that studies the legal implications of neuroscience. This frontier meets with India's fast embrace of technology, posing concerns about human rights, privacy, and dignity. Globally, neuro-technologies such as EEG devices and Brain-Computer Interfaces (BCIs) are challenging established frameworks, leading to proposals for 'neuro-rights'. India's strategic location necessitates striking a balance between innovation and safeguards, using its constitutional ethos and foreign models. Using current case law and references, this examines these processes from both a national and international perspective.

Conceptual Foundations of Neuro-Law and Cognitive Liberty: Neuro-law examines how brain data affects evidence, accountability, and rights by fusing neuroscience with legal ideas. The term 'Cognitive Liberty', which was first used in the early 2000s, refers to integrity (protecting against manipulation), augmentation equality, and mental privacy (protecting

[102] Jared Genser et al., *International Human Rights Protection Gaps in the Age of Neurotechnology* (Neurorights Foundation, 2022)
[103] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263
[104] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1

against illegal brain access).[105] Globally, it develops from human rights such as the freedom of opinion guaranteed by Article 18 of the 1948 Universal Declaration of Human Rights. It is consistent with Article 21 of the Indian Constitution, which emphasises autonomy and dignity. Because AI decodes brain patterns for predictive analytics, neural networks increase dangers by possibly undermining mental self-determination. The necessity for revised standards in light of the development of BCI is highlighted by references such as Ienca and Andorno's 2017 proposal for new human rights.[106] Global discussions were influenced by Chile's 2021 constitutional change, which established 'Neuro-Rights,' describing mental integrity as essential.

International Developments in Neuro-Rights: Globally, neuro-rights tackle the risks to cognitive liberty posed by neuro-technology. The OECD, 2019 Recommendation on Responsible Innovation in Neuro-technology emphasises inclusion and privacy protections. Emphasising ethical governance, UNESCO's 2021 study promotes a Universal Declaration on Human Rights and Neuro-technology. In the landmark case of Girardi v Emotiv (2023),[107] the Supreme Court of Chile ordered the erasure of EEG brain data and stopped the sale of devices for infringing mental privacy under the modified constitution. This historic ruling acknowledged neurodata as personal information that goes beyond anonymisation, citing international human rights. In Mexico, 'Habeas Cogitationem,' a writ safeguarding neural integrity, is incorporated into the 2025 General Law on Neuro-rights and Neuro-technologies. Neuro-protections are included in the 2021 Digital Rights Charter of Spain, and the 2023 Principles of the OAS are in line with regional norms. In contrast to the EU's and the United States' slower growth, these advances highlight fair access and bias protection.

India's Legal Framework and Judicial Precedents: India's framework lacks some neuro-rights but is based on the Constitution and new data regulations. Neural data is treated as personal but not specifically classified under the Digital Personal Data Protection Act (DPDP), 2023, which highlights weaknesses in consumer BCIs. Under Article 21, privacy was defined as essential in the landmark decision of K.S. Puttaswamy v Union of India (2017).[108]

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[105] Marcello Ienca, 'On Neurorights' (2021) 15 Frontiers in Human Neuroscience <http://dx.doi.org/10.3389/fnhum.2021.701258> accessed 15 May 2026

[106] Karen S Rommelfanger et al., 'Mind the Gap: Lessons Learned from Neurorights' (*Science & Diplomacy*, 28 February 2022) <https://doi.org/10.1126/scidip.ade6797> accessed 15 May 2026

[107] *Guido Girardi Lavin v Emotiv Inc* [2023] Corte Suprema [C.S.], Rol No. 105065

[108] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1

This protection extended to informational privacy, which may include neurological data. According to Smt. Selvi v State of Karnataka,[109] coercive brain mapping and narco-analysis are unlawful since they violate mental privacy and the self-incrimination Article 20(3). Rights against private organisations were expanded in Kaushal Kishor v State of U P,[110], which is pertinent to AI companies that handle brain data. Recent research, such as the Bennett University article from 2025, calls for amending Article 21 to formalise neuro-rights. In an international perspective, India's strategy builds on Puttaswamy's emphasis on dignity but lags behind Chile's.

Key Challenges and Case Studies: Challenges include unauthorised brain data access and AI manipulation. According to 2025 studies, uncontrolled EEG wearables in India run the potential of being exploited. Consent problems are demonstrated globally in the Emotiv case (2023), when anonymised data retention violated privacy.[111] Per Farahany's 'Cognitive Liberty' concept, U.S. talks draw attention to the concerns associated with inference from non-neural biometrics. Potential Selvi expansions may pose a threat to AI-powered mental health applications in India. UNESCO's 2023 summit warned about growing divisions and called for global fairness.[112] Case studies highlight moral gaps that require bias safeguards similar to OAS principles, such as algorithmic bias in neural networks.

Strategic Recommendations for India's Positioning: India should incorporate neuro-rights legislation, including cognitive liberty, into the DPDP through changes to the classification of brain data. Take inspiration from Chile and create a neuro-protection organisation that adheres to UNESCO guidelines. Extending Puttaswamy[113] to mental privacy testing from a judicial standpoint. Lead global advocacy for the Global South using UN platforms, encouraging fair access.[114] Encourage public-private collaborations for moral AI to ensure innovation without undermining individual liberties. In terms of neuro-law, this establishes India as a leader with balance.

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[109] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263
[110] *Kaushal Kishor v State of U P & Ors* (2023) 4 SCC 1
[111] *Guido Girardi Lavin v Emotiv Inc* [2023] Corte Suprema [C.S.], Rol No. 105065
[112] Mathias Klang and Andrew Murray, *Human Rights In The Digital Age* (Cavendish Pub Ltd 2005)
[113] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[114] Sergio Ruiz et al., 'Neurorights in the Constitution: from neurotechnology to ethics and politics' (2024) 379(1915) Philosophical Transactions <https://doi.org/10.1098/rstb.2023.0098> accessed 15 May 2026

POLICY RECOMMENDATIONS FOR A NEURO-RESILIENT INDIA

India has to lead the way in developing a neuro-resilient framework in a time when Brain-Computer Interfaces (BCIs), neuro-technology, and AI-driven neural modulation are combining artificial neural networks with biological cognition. This guarantees cognitive liberty, which is the unalienable right to mental autonomy, privacy, and integrity. To maximise advantages in healthcare, education, and rehabilitation while reducing the hazards of mental monitoring, manipulation, and identity loss, neuro-law, the nexus of neuroscience and jurisprudence, requires proactive policies. These suggestions, which are based on constitutional principles and in line with international norms, set the stage for moral innovation, judicial preparedness, and social resilience, establishing India as a world leader in defending the 'Forum Internum' of ideas.

Constitutional Entrenchment of Cognitive Liberty under Article 21: The guarantee of life and personal liberty in Article 21[115] should be broadened to specifically encompass cognitive liberty as a basic neuro-right. Building on the ruling in K.S. Puttaswamy v Union of India,[116] which affirmed the importance of informational privacy as a fundamental aspect of autonomy and dignity, courts ought to construe mental processes and neurological data as being protected. In the seminal case of Selvi v State of Karnataka,[117] it was established that forced extraction of 'Mental Testimony' is a cruel intrusion and that forcible Narco-Analysis, Polygraph, or BEAP tests are breaches of self-incrimination under Article 20(3) and liberty under Article 21 of the Constitution. In line with Chile's 2021 constitutional change, a constitutional bench reference or amendment may uphold the four fundamental neuro-rights (Cognitive Liberty, Mental Privacy, Mental Integrity, and Psychological Continuity).

Enactment of a Comprehensive Neuro-technology Regulation Act: A specific Neuro-Technology Regulation Act 2026 should be introduced, requiring risk assessments, prior informed permission, and independent ethical supervision for brain implants, BCIs, and AI-neural interfaces. Prohibit the commercial selling of raw brain data, subliminal influence, and non-therapeutic cognitive manipulation. For licensing, auditing, and remedy, a National Neuro-Rights Authority should be established, with stringent responsibility for violations.

[115] The Constitution of India 1950, art 21
[116] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[117] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263

This covers the gaps left by the Digital Personal Data Protection Act of 2023's exclusion of neural data. Globally, adopt UNESCO's Recommendation on the Ethics of Neuro-technology (November 2025), which emphasises proportionality, non-discrimination, and protection of vulnerable groups, as well as Chile's Supreme Court decision,[118] which ordered the deletion of unconsented brainwave data and stopped the sale of non-compliant devices.

Robust Neural Data Governance and Mental Privacy Safeguards: It is necessary to change the DPDPA to declare neurological signals, brainwave patterns, and derived inferences 'Sensitive Personal Data', which is subject to limitation, specific purpose, and revocable consent. Outlaw neuro-monitoring in unprotected workplaces or educational institutions and mandate 'Neural Impact Assessments' for any neuro-tech implementations. Respect the updated OECD Recommendation on Responsible Innovation in Neuro-technology from 2019 and the UNESCO 2025 principles of openness and accountability. Domestically, Puttaswamy's[119] idea of informational privacy needs to be extended to prohibit the governmental or private extraction of cognitive data without 'Least Restrictive Means' scrutiny. This will guarantee that India's public digital infrastructure is neuro-resilient rather than exploitative.

Reforming Criminal Justice and Evidence Law for Neuro-Evidence: Revisions should be made to the Bharatiya Sakshya Adhiniyam (formerly known as the Indian Evidence Act) and Bharatiya Nagarik Suraksha Sanhita (formerly known as the CrPC) to allow neuro-evidence only when voluntarily obtained under judicial supervision, with stringent corroboration requirements in accordance with Selvi guidelines (non-admissibility of raw test results, lawyer presence, and consent before the magistrate). Prohibit the use of Predicted Brain Profiling or Computational Mind Reading in research. The National Judicial Academy offers required neuro-law training to forensic and judicial staff. This, in accordance with international due-process standards in neuro-tech law, permits ethical usage in situations of impaired ability while preventing the reappearance of pre-Selvi coercive methods.

International Collaboration, Capacity Building, and Public Neuro-Resilience: Through bilateral MOUs with the US (Neuralink Regulatory Routes), the EU (GDPR Neural Extensions), and Chile, UNESCO's 2025 Neuro-technology Ethics Recommendation and

[118] *Guido Girardi Lavin v Emotiv Inc* [2023] Corte Suprema [C.S.], Rol No. 105065
[119] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1

OECD norms should be ratified and domesticated. Create a 'Neuro-Resilient India Mission' inside the Ministry of Science & Technology to conduct research and development on inclusive, reasonably priced neuro-technology, raise public awareness of cognitive rights, and teach ethics in schools. Encourage public-private collaborations with protections against dual-use hazards. Create a National Neuro-Law Centre to assist litigation, conduct research, and provide yearly reports to Parliament. These specific, doable suggestions would strengthen India's cognitive sovereignty and transform neuro-technological frontiers into foundations of robust, rights-based advancement. They are backed by Puttaswamy,[120] Selvi,[121] Chile's 2023 example, and UNESCO 2025. We must introduce the Neurotechnology Regulation Bill into parliament immediately.

CONCLUSION

The boundaries of cognitive liberty require immediate constitutional, legal, and ethical strengthening as neural networks, both biological and artificial, converge with Brain-Computer Interfaces (BCIs), Neuro-Enhancement, and AI-driven mind-reading in India's expanding digital economy. According to this investigation of neuro-law, unchecked neuro-technologies run the risk of undermining mental privacy, decisional autonomy, and freedom of thinking. By 2030, a rights-centric digital future must be secured by proactively integrating neuro-rights into India's legal framework, striking a balance between innovation and the inviolability of the human mind, and referencing both domestic and international precedents.

The next evolutionary layer of cognitive liberty must be explicitly acknowledged, building on the ruling in Justice K.S. Puttaswamy v Union of India, which upheld informational and decisional privacy as essential to dignity and autonomy under Article 21. Neural data, the most private biometric, therefore falls under the judgment's emphasis on 'Mental Privacy' (Justice Chandrachud) and its three-part test (legality, legitimate purpose, proportionality). Since brain impulses transcend recorded data, recent research (2025) calls for reading Article 21 to include 'Mental Integrity', prohibiting the extraction or modification of unarticulated thoughts.

[120] *Justice K S Puttaswamy (Retd) & Anr v Union of India & Ors* (2017) 10 SCC 1
[121] *Selvi & Ors v State of Karnataka & Anr* (2010) 7 SCC 263

The landmark case of Selvi v State of Karnataka truly holds that involuntary Neuro-Scientific methods (such as Brain Mapping and Narco-Analysis) breach Articles 20(3) and 21 by requiring 'Testimonial' mental reactions without permission, which is an affront to dignity. Kaushal Kishor v State of U P imposes affirmative state responsibilities to safeguard individuals against non-state neuro-surveillance, further enabling horizontal enforcement of Articles 19/21 against private organisations (e.g., employers implementing EEG devices or Neuralink-style enterprises). Until specific law is created, these precedents offer instant doctrinal protection.

By revising Article 19 to safeguard 'Psychological Integrity' and Brain Activity, Chile became a leader in the field of Constitutional Neuro-Rights in 2021. In the historic case of Guido Girardi Lavín v Emotiv Inc.,[122] the Court unanimously ordered a US BCI company to remove a senator's EEG brain data that had been obtained for research or commercial use without the senator's express consent, upholding mental privacy against foreign tech behemoths. Together with Colorado's HB24-1058 (2024) on brain data and the EU GDPR extensions for biometrics, this first court decision on neuro-rights provides India with a scalable model: explicit neuro-data categorisation and extraterritorial permission demands.

The Digital Personal Data Protection Act 2023 leaves loopholes in Consent, Purpose Limitation, and Non-Discrimination by treating brain signals as 'Personal Data' without providing further protections for sensitive cognitive judgments. Neural and generated data must be designated as a 'Special Category' with veto power on decoding and prohibitions on subliminal manipulation. A thorough Neuro-technology Regulation Act that resembles Chile's model should encourage responsible innovation by enforcing G20-aligned norms, requiring licensing, independent ethics committees, and sanctions for violations of cognitive liberty.

A National Neuro-Rights Commission, judicial recommendations (Vishaka-Style Interim), and adoption into medical device rules (2025 upgrades) will all be used to operationalise protections. Public awareness, corporate due diligence, and international cooperation, of that, all UNESCO neuro-tech principles, will prevent a 'Cognitive Divide'. By 2027, India

[122] *Guido Girardi Lavin v Emotiv Inc* [2023] Corte Suprema [C.S.], Rol No. 105065

may lead the Global South in neuro-justice as long as technical sovereignty is consistent with constitutional humanism, where ideas remain the last uncolonized frontier.