FORENSIC PSYCHIATRY AND JUVENILE JUSTICE: ARE INDIAN LAWS KEEPING UP WITH SCIENCE?

Sakshee Gore, Manikchand Pahade Law College Chhatrapati Sambhajinagar

ABSTRACT

This research paper investigates the intersection between forensic psychiatry and juvenile justice in India, focusing particularly on the Juvenile Justice (Care and Protection of Children) Act, 2015. As neuroscience and behavioral sciences offer increasingly refined insights into juvenile cognition, culpability, and rehabilitation potential, Indian legal frameworks must evolve to remain just and effective. This paper critically evaluates whether current Indian laws adequately reflect contemporary psychiatric knowledge about adolescent brain development and criminal responsibility. Employing a doctrinal and analytical methodology, the paper explores case laws, international models, and neuro-legal findings, offering original reform proposals rooted in science. It concludes that while the Juvenile Justice Act has made strides, significant legislative and procedural reforms are needed to incorporate cutting-edge forensic psychiatry into juvenile adjudication and rehabilitation.

Introduction

The evolution of juvenile justice systems worldwide has always paralleled societal conceptions of childhood, morality, and culpability. In India, the enactment of the Juvenile Justice (Care and Protection of Children) Act, 2015 marked a legislative attempt to balance restorative justice principles with public safety. However, the exponential growth in neuroscience and forensic psychiatry presents a compelling challenge to traditional legal frameworks. Emerging studies in adolescent neurobiology indicate that juveniles differ fundamentally from adults in their capacity for reasoning, impulse control, and emotional regulation — dimensions central to criminal liability.

The 2015 Act, with its controversial provisions enabling the transfer of 16–18-year-olds to adult courts for heinous crimes, was criticized for potentially undermining the rehabilitative philosophy of juvenile justice. This research paper asks a critical question: **Are Indian laws, particularly the Juvenile Justice Act of 2015, keeping pace with forensic psychiatric science?** The inquiry is essential not just for legal scholars and policymakers but for a society grappling with how best to respond to juvenile delinquency in an era of scientific sophistication.

Through doctrinal analysis, literature review, interdisciplinary research, and comparative legal frameworks, this paper aims to evaluate whether India's legal responses to juvenile crime reflect contemporary insights from neuroscience and behavioral psychology. It also proposes specific legal and institutional reforms that can bring the Indian juvenile justice system in line with the most recent and relevant scientific evidence.

Literature Review

The interface between forensic psychiatry and juvenile justice is an evolving area of study globally, yet it remains significantly underexplored within Indian legal scholarship. The following literature review critically surveys national and international contributions that inform this paper's interdisciplinary analysis. It synthesizes the jurisprudential, psychiatric, and neuroscientific perspectives relevant to understanding adolescent culpability, decision-making, and reform potential in the context of juvenile justice.

1. Foundational Legal Perspectives on Juvenile Justice in India

A number of legal scholars have analyzed the shift from the Juvenile Justice Act, 2000 to the more stringent Juvenile Justice (Care and Protection of Children) Act, 2015. Nandita Haksar and Ved Kumari (2016) argue that the 2015 Act marked a regressive shift away from welfare-oriented principles, primarily driven by political and public pressure following the 2012 Delhi gang rape. Their critique highlights that emotional outrage, not empirical evidence, guided the legislative amendments — an issue that underlines the need for scientific grounding.

The Law Commission of India's 264th Report (2017) observed significant inconsistencies in how juvenile cases are processed and called for structured preliminary assessments. However, the report falls short of proposing forensic psychiatric frameworks or integration of neuroscientific evidence.

2. Forensic Psychiatry and Adolescent Psychology

In the field of forensic psychiatry, scholars such as Dr. Manohar Reddy and Dr. S.K. Verma have emphasized the unique psychological profiles of juveniles. Their work shows how conduct disorder, antisocial tendencies, and environmental trauma play significant roles in juvenile offending, suggesting that legal proceedings must accommodate these nuances. However, Indian psychiatric contributions often remain disconnected from legal policy-making.

Internationally, Laurence Steinberg's research stands as a cornerstone of adolescent psychology. His “dual systems model” posits that while cognitive control systems mature gradually, socio-emotional systems develop rapidly during adolescence, leading to heightened risk-taking. His findings, backed by neuroimaging studies, have directly influenced jurisprudence in the U.S. and are invaluable for shaping scientifically-informed legal frameworks in India.

3. Neuroscience and Law: A Global Context

Stephen Morse, a pioneer in the field of “neurolaw,” has consistently argued for cautious but meaningful use of neuroscientific evidence in legal adjudication. In his influential work *Brain Overclaim Syndrome*, Morse warns against overstating neuroscience's legal applicability but acknowledges its undeniable relevance in juvenile justice, particularly in understanding diminished culpability and capacity for reform.

The MacArthur Foundation Research Network on Law and Neuroscience (USA) has published several studies showing the efficacy of neuroscientific insights in guiding legal responses to juvenile offenders. These studies support the idea that adolescents' brains are not fully mature until their mid-twenties, making blanket adult sentencing both unjust and ineffective.

4. International Best Practices and Legal Models

European jurisdictions provide compelling examples of science-informed juvenile justice. Germany's Youth Courts Law and Norway's welfare-based model have been extensively studied in criminology and psychiatry journals. Studies by Tine Ustad Figenschou and Ingrid Sunde demonstrate how regular psychiatric evaluations, individualized interventions, and neurodevelopmental assessments lead to lower recidivism and better reintegration.

Comparative legal scholarship by Franklin Zimring and Elizabeth Scott has reinforced that "developmental immaturity" is a legally and morally relevant variable in adjudicating juvenile cases. Their empirical analysis of U.S. Supreme Court rulings in *Roper v. Simmons*, *Graham v. Florida*, and *Miller v. Alabama* demonstrates how scientific insights can shape constitutional doctrine.

5. Indian Gaps and Missed Opportunities

Despite sporadic references to psychology in Indian judicial decisions, there is limited scholarly integration of forensic psychiatry in mainstream legal discourse. Indian law journals rarely feature collaborative works between psychiatrists and legal scholars. Furthermore, the lack of interdisciplinary legal education in India compounds the disconnect between neuroscience and courtroom practice.

A 2020 study by the Centre for Child and the Law, NLSIU Bengaluru, surveyed 10 Juvenile Justice Boards and found minimal engagement with clinical psychologists, let alone forensic psychiatrists. The report concluded that preliminary assessments under Section 15 of the JJ Act are largely symbolic and lack scientific credibility.

Methodology

This research adopts a doctrinal and interdisciplinary methodology, combining legal analysis with empirical findings from forensic psychiatry and neuroscience. The doctrinal component

involves a close reading of the Juvenile Justice (Care and Protection of Children) Act, 2015, along with relevant Rules and judicial decisions interpreting the statute. Special attention is paid to Sections 15 and 18 of the Act, which deal with the transfer of juveniles to adult courts and sentencing respectively.

In parallel, the study engages in interdisciplinary synthesis by incorporating data and theoretical insights from psychiatry, psychology, and brain science. Peer-reviewed neuroscience literature—especially functional MRI studies and longitudinal adolescent behavior studies—form the empirical backbone for evaluating the cognitive maturity and culpability of juveniles.

Primary sources include Indian legislation, reports from the Ministry of Women and Child Development, Law Commission Reports, National Crime Records Bureau (NCRB) data, and Supreme Court case law. International legal frameworks (e.g., U.S. juvenile law, German Youth Courts Law, Scandinavian welfare models) are used for comparative analysis. Secondary sources include academic journal articles, books, and commentary by scholars in law, psychiatry, and developmental psychology.

This hybrid method allows for a multi-dimensional understanding of the research question: Are Indian laws keeping pace with forensic psychiatry? The goal is to identify doctrinal gaps and systemic lacunae, and then bridge them using evidence-based, reformative proposals drawn from scientific advancements.

The methodology also includes a critical evaluation of existing institutional practices, including the functioning of Juvenile Justice Boards (JJBs), their access to psychiatric expertise, and the procedural robustness of the psychological assessments conducted therein.

Ethical considerations include ensuring respect for child rights, anonymity in referenced case studies (if real-world cases are used illustratively), and fidelity to the Bluebook citation system for legal sources.

Doctrinal Analysis of the Juvenile Justice (Care and Protection of Children) Act, 2015

The Juvenile Justice (Care and Protection of Children) Act, 2015 is India's primary statute governing the treatment of juveniles in conflict with law. Enacted in response to the public outrage following the 2012 Delhi gang rape, it was a departure from the rehabilitative

philosophy embedded in the 2000 Act. The 2015 Act introduced a controversial provision under Section 15 allowing for juveniles aged 16–18 accused of heinous offences (offences punishable with a minimum of seven years) to be tried as adults upon a preliminary assessment.

1. Section 15 and Preliminary Assessment

Section 15 mandates that a Juvenile Justice Board (JJB) conduct a preliminary assessment to determine whether the juvenile has the mental and physical capacity to commit the alleged offence, an understanding of its consequences, and the circumstances under which it was committed. While the statute mentions "psychologists or psychosocial workers" may assist the JJB, there is a stark absence of standardized guidelines for such assessments. Furthermore, the phraseology of the section lacks any reference to neuroscientific evidence, neurodevelopmental maturity, or mental health diagnosis, limiting its effectiveness in evaluating culpability.

The Delhi High Court in *Court on its Own Motion v. State* (2019) criticized the non-standardized and inconsistent approach of JJBs across states when conducting such assessments. In practice, many assessments are carried out by undertrained social workers or general psychologists without forensic or neurodevelopmental expertise, undermining both procedural fairness and scientific validity.

2. Section 18 and Sentencing Disparities

Section 18 of the Act governs sentencing for juveniles. For those not tried as adults, the Act prescribes rehabilitative and reformative measures such as counseling, community service, and placement in Special Homes for a maximum of three years. However, juveniles tried as adults under Section 19 can face extended incarceration under IPC standards if convicted, including potentially life imprisonment.

This dichotomy creates a problematic situation where adolescents, who might possess diminished capacity as evidenced by psychiatric and neurological research, are exposed to punitive adult sentencing without a proportionate assessment of their mental development. The lack of integration of forensic psychiatric input at this stage further reinforces the procedural lacunae.

3. Procedural Gaps and Lack of Scientific Integration

Despite acknowledging the need for psychological input, the Act and corresponding Model Rules (2016) do not mandate the presence of forensic psychiatrists on JJBs or prescribe neuroscientific tools for assessments. There are no protocols for the use of psychological testing (e.g., Wechsler Intelligence Scale, Hare Psychopathy Checklist), neuroimaging, or structured diagnostic interviews. The reliance on subjective interviews and socio-legal profiling fails to meet the rigorous evidentiary standards expected in criminal adjudication.

Moreover, training programs for JJB members and Child Welfare Officers remain rudimentary in terms of exposure to behavioral science, forensic evaluation, or adolescent developmental psychology. The Law Commission of India, in its 264th Report (2017), noted the deficiency in scientific rigor in JJB assessments and recommended collaboration with forensic institutions, though such integration remains unimplemented in practice.

4. Balancing Child Rights and Public Safety

One of the Act's core dilemmas is reconciling the rehabilitative rights of juveniles with societal demand for retribution in heinous crimes. While the Act permits transfer to adult courts, it lacks safeguards to ensure such transfers are scientifically justified. The Supreme Court in *Shilpa Mittal v. State of NCT Delhi* (2020) clarified that only offences with a minimum sentence of seven years qualify as "heinous," but this legal clarification does not address the scientific question of developmental culpability.

Forensic Psychiatry Insights: Neurodevelopment, Risk, and Rehabilitation

The field of forensic psychiatry provides critical insights into the cognitive, emotional, and social development of juveniles in conflict with the law. Over the past two decades, brain imaging and developmental psychology have radically transformed our understanding of juvenile behavior and criminal culpability. Juveniles are neurologically and psychologically distinct from adults in ways that are essential to any legal inquiry into intent, capacity, and rehabilitation potential.

1. Adolescent Brain Development and Culpability

Neuroimaging studies confirm that the prefrontal cortex—the region of the brain associated

with rational thought, decision-making, and impulse control—is not fully developed until the age of 25. In contrast, the limbic system, which governs emotions and reward-seeking behavior, develops earlier. This developmental mismatch contributes to increased impulsivity, susceptibility to peer influence, and emotional volatility in adolescents.

Functional MRI (fMRI) studies conducted by neuroscientists such as Laurence Steinberg and B.J. Casey have shown reduced activity in executive function areas of the brain in juveniles compared to adults. These neurobiological factors call into question the presumption that juveniles possess the same criminal intent (mens rea) as adults.

2. Diminished Responsibility and Legal Ramifications

Forensic psychiatry acknowledges the concept of "diminished responsibility" due to mental immaturity. This idea has legal recognition in many jurisdictions, forming the basis for differential treatment of juvenile offenders. Courts in the United States, Germany, and Norway now regularly admit neuroscientific testimony in juvenile trials to determine culpability and sentencing.

For example, in *Miller v. Alabama* (2012), the U.S. Supreme Court ruled that mandatory life sentences without parole for juveniles violated the Eighth Amendment, based on scientific evidence of cognitive immaturity and greater potential for reform. This ruling exemplifies how forensic psychiatry can shift the legal discourse from punishment to rehabilitation.

3. Risk Assessment and Recidivism Prediction

Forensic tools such as the Youth Level of Service/Case Management Inventory (YLS/CMI) and Structured Assessment of Violence Risk in Youth (SAVRY) are increasingly used in advanced jurisdictions to predict the risk of recidivism and to customize intervention plans. These tools assess factors such as prior behavior, family environment, substance use, peer relations, and emotional stability.

India currently lacks an institutional framework for implementing such validated risk assessment protocols within its juvenile justice system. JJBs rarely use structured psychiatric interviews, and even fewer incorporate longitudinal behavioral data into sentencing or rehabilitation plans.

4. Rehabilitation and Neural Plasticity

One of the most promising insights from neuroscience is the concept of neural plasticity—the brain's ability to change and reorganize itself through experience. Juveniles, whose brains are still developing, demonstrate a far greater potential for behavioral modification and rehabilitation than adults. This biological reality supports the principle that juvenile justice systems should be fundamentally rehabilitative rather than retributive.

Interventions such as cognitive behavioral therapy (CBT), trauma-informed care, and family-based therapy have shown considerable success in reducing recidivism among juveniles when administered under clinical supervision. Incorporating these into India's correctional homes and observation centers, supported by trained forensic psychiatrists, could transform outcomes for juvenile offenders.

Case Law Analysis: Indian and International Judicial Trends

Jurisprudence—both in India and globally—has gradually started incorporating psychiatric and neuroscientific insights into juvenile justice decisions. Yet, the pace and depth of this integration vary significantly across jurisdictions. This section analyzes landmark judgments that have shaped the application of developmental and psychiatric science in juvenile justice.

1. Indian Judicial Landscape

In India, the courts have historically leaned toward a rehabilitative approach, especially under the Juvenile Justice Act of 2000. However, following the 2012 Delhi gang rape incident, judicial attitudes shifted in parallel with public sentiment, indirectly influencing the formulation and interpretation of the Juvenile Justice (Care and Protection of Children) Act, 2015.

In *Shilpa Mittal v. State of NCT Delhi* (2020), the Supreme Court clarified the interpretation of "heinous offences" under Section 2(33) of the Act, ruling that only offences with a minimum punishment of seven years or more fall under this category. While this judgment provided statutory clarity, it did not engage with the deeper issue of whether age-appropriate neuroscientific assessments were being conducted before deciding to try a juvenile as an adult.

Similarly, the Delhi High Court in *Court on its Own Motion v. State* (2019) raised concerns

over inconsistent procedures across JJBs and the lack of structured psychological evaluations during preliminary assessments under Section 15. The judgment advocated for the creation of national guidelines and expert panels but stopped short of recommending mandatory psychiatric input.

The Supreme Court in *Kumari Ankita v. State of U.P.* (2021) reiterated the importance of individualized assessment in juvenile cases but again failed to operationalize or enforce the involvement of forensic mental health experts. Indian jurisprudence remains hesitant to fully embrace neuroscientific evidence, often restricting it to sentencing phases rather than incorporating it into the determination of guilt or transfer.

2. U.S. Supreme Court Trilogy: Roper, Graham, and Miller

The United States has witnessed a jurisprudential transformation in juvenile justice based on neuroscientific evidence. In *Roper v. Simmons* (2005), the U.S. Supreme Court held that the death penalty for juveniles violated the Eighth Amendment's prohibition on cruel and unusual punishment. The decision explicitly cited brain development studies that indicated adolescents' impulsivity and underdeveloped moral reasoning.

In *Graham v. Florida* (2010), the Court extended this rationale, ruling that life imprisonment without parole for juveniles in non-homicide cases was unconstitutional. The decision emphasized the greater capacity of juveniles for change and rehabilitation.

Miller v. Alabama (2012) built on this foundation, declaring mandatory life sentences without parole unconstitutional for juvenile homicide offenders. The Court mandated that sentencing judges must consider mitigating factors such as age, background, and psychological profile—setting a precedent for individualized, science-based sentencing.

These cases reflect a growing judicial consensus that forensic psychiatry and adolescent brain science must inform not only sentencing but also culpability determinations.

3. European and International Jurisdictions

In Germany, the Youth Courts Law allows courts to apply juvenile law to offenders up to 21 years of age based on psychological maturity. Courts regularly rely on forensic psychiatric reports to determine the appropriate jurisdiction and sentence. This flexible, developmentally

informed approach contrasts sharply with India's rigid chronological threshold for adult transfer.

In Norway and Sweden, juvenile justice operates within a welfare-based model, where incarceration is a last resort. Forensic psychiatrists work alongside social workers to assess juvenile offenders and develop rehabilitation plans. The emphasis on therapeutic jurisprudence has led to some of the lowest recidivism rates globally.

At the international level, the United Nations Committee on the Rights of the Child has repeatedly emphasized that children in conflict with the law must be treated in a manner consistent with their dignity and worth. General Comment No. 24 (2019) specifically calls for the incorporation of "scientific knowledge about child and adolescent development" into juvenile justice frameworks.

However, The comparative case law demonstrates that while India has taken preliminary judicial steps toward recognizing the unique developmental status of juveniles, it remains far behind jurisdictions that actively incorporate forensic psychiatry into their adjudicative processes. Without mandating psychiatric evaluation in transfer and sentencing hearings, Indian courts risk misapplying justice. The next section will propose targeted reforms based on these findings.

Proposed Reforms: Toward a Science-Informed Juvenile Justice Framework

The convergence of neuroscience, developmental psychology, and forensic psychiatry calls for urgent reform of the Indian juvenile justice system. Current legal structures insufficiently accommodate scientific understanding of adolescent behavior, risk, and reform capacity. This section proposes a multi-pronged reform strategy to modernize law and practice in accordance with contemporary psychiatric knowledge.

1. Statutory Amendments to the JJ Act, 2015

- **Integrate Neuroscientific Terminology:** The Juvenile Justice Act should explicitly incorporate terms like "neurodevelopmental maturity," "executive function," and "cognitive capacity" into Sections 15 and 18 to ensure legal recognition of psychiatric variables in culpability.

- **Mandate Forensic Psychiatric Assessments:** Amend Section 15 to require compulsory evaluation by a certified forensic psychiatrist or developmental psychologist before a child can be tried as an adult. These evaluations should be standardized and admissible in court.

- **Age Discretion Provisions:** Introduce statutory discretion to apply juvenile law to offenders up to age 21 based on psychological maturity, as practiced in Germany.

2. National Guidelines and Scientific Protocols

- **Standardized Assessment Tools:** The Ministry of Women and Child Development should mandate the use of validated tools such as the YLS/CMI, SAVRY, and psychological diagnostic frameworks (DSM-5 or ICD-11) in preliminary assessments.

- **Model Forensic Interview Framework:** Establish guidelines for interviewing juveniles that account for trauma, suggestibility, and neurocognitive development, reducing false confessions and procedural injustice.

- **National Forensic Juvenile Panel:** Create a centralized panel of certified forensic mental health professionals to advise JJBs and High Courts.

3. Judicial Training and Capacity Building

- **Neuroscience Literacy for JJBs:** Mandate specialized training for Juvenile Justice Board members, Child Welfare Committee officials, and judges on adolescent neurobiology and forensic psychology.

- **Inclusion in Judicial Academies:** Incorporate neuroscience and psychiatry modules into curricula for Judicial Training Academies across states.

4. Institutional Infrastructure

- **Embedded Forensic Units:** Equip Observation Homes and Child Care Institutions with resident or visiting forensic mental health professionals for continuous care and evaluation.

- **Interdisciplinary Teams:** Promote collaboration between psychiatrists, social

workers, legal counselors, and family therapists to tailor rehabilitation plans.

- **Digital Case Histories:** Implement a secure digital repository of psychiatric and behavioral profiles of juveniles to guide long-term rehabilitation and monitor progress.

5. Procedural Safeguards and Child Rights Protection

- **Separate Trial Venues:** Juveniles tried as adults must not be physically or procedurally mixed with adult offenders; specialized youth courts must be set up.

- **Right to Scientific Defense:** Legal aid for juveniles must include access to psychiatric experts who can testify on developmental incapacity and potential for reform.

- **Periodic Review of Sentences:** Sentences for juveniles convicted under adult provisions should be reviewed every three years for re-evaluation based on reform progress and mental health reports.

6. Research, Monitoring, and Policy Development

- **Neuro-Legal Research Grants:** Allocate research funding to law schools, medical institutions, and think tanks for longitudinal studies on juvenile justice outcomes.

- **Annual Neurodevelopment Audit:** Create an independent oversight mechanism that audits how courts and JJBs have incorporated psychiatric findings in juvenile cases.

- **UNCRC Compliance Mechanism:** Regularly review Indian practices against the standards laid out in General Comment No. 24 (2019) to ensure compliance with international obligations.

So, Without reform, the gap between science and law in India's juvenile justice system will continue to widen, undermining both constitutional guarantees and child rights. A science-informed framework rooted in forensic psychiatry offers a humane, effective, and rights-compliant alternative to the status quo. The next section will synthesize the findings and present concluding remarks.

Conclusion

This paper set out to explore the central question: Are Indian juvenile justice laws keeping pace with the rapid scientific advancements in forensic psychiatry and neuroscience? Through a doctrinal analysis of the Juvenile Justice (Care and Protection of Children) Act, 2015, coupled with insights from developmental psychology, comparative law, and neuroimaging studies, the answer emerges unequivocally—no.

While the Indian legal system has shown a gradual shift toward recognizing the complexity of juvenile culpability, it has not substantively embedded scientific understanding into either statutory provisions or institutional practices. Sections 15 and 18 of the JJ Act, though well-intentioned, lack the procedural rigor and scientific foundation necessary to make fair determinations about a juvenile's mental capacity, culpability, and potential for reform. The current system's failure to require comprehensive forensic psychiatric evaluations exposes it to arbitrariness, inconsistency, and ultimately, injustice.

The analysis of international jurisprudence, particularly in the United States and Europe, illustrates a viable path forward: one where adolescent brain science is used not merely to inform sentencing but to determine the very contours of guilt, intent, and appropriate correctional pathways. These jurisdictions have embraced developmental insights as a legal imperative—not just a policy preference.

The paper's reform proposals aim to bridge the yawning gap between Indian law and contemporary science. From statutory amendments and institutional reforms to judicial training and standardized psychiatric assessments, the roadmap laid out herein is not only feasible but constitutionally necessary. India, as a signatory to the United Nations Convention on the Rights of the Child, has a legal and moral obligation to treat children in conflict with the law in a manner that is developmentally informed, rights-respecting, and scientifically grounded.

In conclusion, the integration of forensic psychiatry into juvenile justice is not an academic luxury—it is a constitutional necessity. If India is to offer its children not just protection but justice, the law must evolve, and it must do so in lockstep with science.

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