
INNOCENCE IN THE DIGITAL CROSSFIRE: SAFEGUARDING CHILD RIGHTS IN THE AGE OF TECHNOLOGY

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ABSTRACT

This research critically examines how technology simultaneously exacerbates and mitigates child rights violations. It explores ethical, technological, and legal implications with specific emphasis on child exploitation, privacy concerns, and the impact of artificial intelligence on children's cognitive development. The paper assesses existing safeguards, identifies gaps in policy implementation, and provides strategic recommendations for strengthening child protection in digital spaces.

Technology has become an indispensable part of the present times. While technological advancement has been a boon, one still needs to tread with caution. Especially when children have largely come under the grip of the technological leap. The integration of transcendental development, social media and different platforms of digital entertainment has opened gates for certain unique challenges to children's rights. This article is centred on understanding the ethical and technological implications of child rights particularly with regard to their vulnerability. The focus of the article would primarily be on the impact of technology in the multiplication of instances of child rights violation while also assessing how technology has contributed to combatting the same. The study would branch out to studying concerns relating to privacy-autonomy, and the effect of modern-day technology, including aspects of Artificial Intelligence on the behavioural and cognitive development of children. This article also explores the myriad approaches aimed at safeguarding children's data and rights, the age-appropriate practices in place and how effective has the implementation been while also emphasising the key challenges in the implementation mechanism. The article also assesses various policy recommendations to combat challenges that arise in the area of child rights in line with the guidelines laid down for the protection of children.

Keywords: Child rights, technology, Artificial Intelligence, laws, privacy

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Child rights provide fundamental protections designed to ensure children's dignity, equality, and welfare. With the rapid adoption of technology, children face unprecedented vulnerabilities, notably through exploitation and privacy violations. This paper argues for comprehensive reforms in legal frameworks and stronger enforcement mechanisms to safeguard children's rights effectively in the evolving technological landscape.

Assessing child rights-

Rights are considered as overarching protections available to human beings inherently because they exist and also to make 'life' more meaningful. Child rights are not a standalone branch of rights. To state it simply, child rights are the rights available to children¹. These cover the broad contours of equality, dignity, respect in all arenas of the life of children. Children may often be too naïve to understand the exercise of their rights. In case of violation of their rights, they may not even raise a claim for the lack of understanding and ignorance. It thus becomes incumbent for people around to ensure that the rights of children are safeguarded.

United Nations Convention on the Rights of the Child (UNCRC) has laid down that any person below the age of 18 is a child.² The convention also embodies the set of principles and guidelines that nations should undertake while safeguarding their children. The principles span across covering vital aspects such as the identity of child, ensuring nationality, life development measures, family care, giving due regard to children's view etc.

The innocence and ignorance factor, both work in tandem as breeding grounds for predators who violate the rights cleverly manipulating children. It is this innocence and ignorance that need to be protected from being exposed to malaise intention of such predators. Technology has also engrossed the children of the present generation, while they are glued to the use of it, they may not be aware of the compromises they are making in terms of their data and that their

¹ Child Rights International Network, 'What Are Children's Rights?' (CRIN, no date) <https://archive.crin.org/en/guides/introduction/what-are-childrens-rights.html> accessed 9 December 2024.

² UNICEF, 'Convention on the Rights of the Child: The Children's Version' <https://www.unicef.org/child-rights-convention/convention-text-childrens-version#:~:text=A%20child%20is%20any%20person%20under%20the%20age%20of%2018> accessed 9 December 2024.

vulnerability may be at stake considering the allurements and anonymity underlying technology.

Child pornography is a global issue. Technology knows no boundaries and the menace of spread of child pornography too is not confined to a specific border.³ Hence, the call to action also has to be on a global scale. Offenders operate through digital tools to exploit minors across borders.⁴ Understanding issues in this regard thus becomes the vital need for society.

The surge of child exploitation incidents, amplified by digital technologies, underscores the urgency and relevance of this research. Challenges including anonymity, online grooming, and revenge-based exploitation highlight severe limitations of existing safeguards. Addressing these digitally-driven threats through updated legislation and enhanced awareness strategies becomes crucial for effective protection.

Child pornography isn't a confined phenomenon, more so in the digital age where it takes a fraction of seconds for anything to multiply on the internet. The considerations stem from lack of awareness of the dangers of technology, the underlying vulnerability that engulfs children, the social underpinnings of emotion of revenge prevalent amongst children, exploitation of children at the hands of predators and the anonymity of the digital era. These are just few amongst the several factors that lie at the root of violation of children's rights. The world is crippled by incidents of child abuse in myriad forms. The exploitation of innocence to harp on to criminal purposes has been on the rise, both at the domestic front as well as at the global front. At this point it would be safe to state that the advancement of technology and technological revolutions has not been fairly advantageous in the area of safeguarding of children's rights.

Child pornography traditionally includes sexually explicit depictions involving minors, but technologies such as morphing and deepfakes create definitional ambiguities. The historical reliance on tests like the 'Dost Test' no longer adequately addresses these evolving threats. Liability attribution is increasingly complex, requiring clear legal frameworks addressing producers, distributors, platforms, and end-users.

Child pornography implies the 'depiction of sexually explicit conduct' which involves a minor.

³ Maxwell Taylor and Ethel Quayle, *Child Pornography: An Internet Crime* (Repr, Brunner-Routledge 2004).

⁴ "Predators Are Becoming More Sophisticated" Pornographers and Pedophiles Online' [2006] The New Atlantis 125. Accessed on 9 December 2024

This depiction translates through the creation, publication and distribution of any such explicit content that involves minors. This act can find ground through various means such as digital images, videos, photographs, social media platforms amongst the other means. The ‘Dost Test’⁵ provides a primer into what constitutes child pornography. While this definition may have helped in the traditional context, this fails to fulfil the definitional underpinning in the technological age where morphing and deepfakes have posed a different arena of threat and violation of the rights of children. This understanding may thus require a wave of change in order to suit the contextual challenges.

Key players: Child pornography has many players involved; the producers, distributors, the receivers and the possessors.⁶ To contain the menace of child pornography, a step-by-step containment is thus needed. Pinning down liability on each player irrespective of innocent participation becomes a necessary deterrent to combat the same. In the technological era this pinning of liability remains a grey area, there is a pandemic of data sharing (relevant-irrelevant, filtered-unfiltered, genuine-fake, all kinds) and multiple players are involved. The onus on social media platforms to curb the spread of any such explicit content has gained more weight in terms of responsibility. Tracking the wrongdoer and various parties also remain vital. The challenge here is anonymity. There is obscenity being committed behind anonymity. Data manipulation and false data is heavily prevalent and this leaves one wondering, who then can be held liable?

There has been reservation about pornographic content being created by technology and the contention that holds that there is no actual harm in this regard but the pertinent issue is, even if images created are not those of real children, the harm is in every way and manner real. The impact that such image creation may have may still leave minds corrupt to exercise such gruesomeness on real victims. This counter argument though blurry does not lack weight and

⁵ The Dost test identifies six factors that are relevant to the determination of whether a picture constitutes a “lascivious exhibition”: (1) whether the focal point of the visual depiction is on the child’s genitalia or pubic area; (2) whether the setting of the visual depiction is sexually suggestive, i.e., in a place or pose generally associated with sexual activity; (3) whether the child is depicted in an unnatural pose or in inappropriate attire, considering the age of the child; (4) whether the child is fully or partially clothed, or nude; (5) whether the visual depiction suggests coyness or willingness to engage in sexual activity; (6) whether the visual depiction is intended or designed to elicit a sexual response in the viewer. - Amy Adler, ‘The “Dost Test” in Child Pornography Law: Trial by Rorschach Test’ in Carissa Byrne Hessick (ed), *Refining Child Pornography Law* (University of Michigan Press 2016) <<http://www.jstor.org/stable/j.ctt1gk08jr.7>> accessed 9 December 2024.

⁶ Audrey Rogers, ‘The Dignitary Harm of Child Pornography—From Producers to Possessors’ in Carissa Byrne Hessick (ed), *Refining Child Pornography Law* (University of Michigan Press 2016) <<http://www.jstor.org/stable/j.ctt1gk08jr.10>> accessed 9 December 2024.

cannot be refuted. The idea is to curb child pornography in every aspect. The end user of such content does not differentiate between a real or created image, thus this exception of computer-generated image needs reconsideration.⁷

Dignity harm caused by child pornography profoundly impacts children's psychological, emotional, and moral integrity. The Supreme Court highlights the lasting trauma inflicted by perpetual online exposure. Legal responses must integrate psychological support, preventive strategies, and stringent regulations to effectively address the comprehensive nature of dignity harm.

In a landmark case,⁸ the Supreme court stated the harm caused to a child stemming from child pornography spans across various aspects of a child's life and it held that "use of children as subjects of pornographic materials is harmful to the physiological, emotional, and mental health of the child."⁹ When a child is exposed to an environment that demands the compromise of his innocence at the hands of perpetrators, the child's whole life is at stake. When sexually explicit content of the child is recorded in any form, the child undergoes a layered harm. At the surface level is the harm in terms of the pain a child endures while being captured in such manner, at another level is the harm of permanence. Any digital record of such content can find permanence unless the source of such content is identified by the authorities. Such content may hamper the child's dignity in myriad ways, not only acting as a handicap on his innocence but also acting as a grim reminder of such gruesomeness in case if the child encounters the resurfacing of such content on successive occasions. This also poses a deep-seated challenge of preventing their further exploitation. They can often face victimisation if such content is used for further violating their bodies by blackmailing them into the unending trap. Many children are pushed to take extreme action at the face such exploitation where they may even end their lives.

Dignity harm goes even beyond physical and psychological injury. It cuts through the autonomy, identity and moral integrity of a child to satiate the offender's immoral gratification. Stripping them of this dignity leaves them lurking as mere objects in the eyes of the offender (sometimes even in their own eyes). It dehumanises their existence violating the most basic of

⁷ *ibid.*

⁸ *New York v. Ferber*, 458 US 747 (1982), Available at <<https://supreme.justia.com/cases/federal/us/458/747/>> accessed on 10.12.2024

⁹ *Rogers* (n 6).

rights. Technology may only multiply this violation by perpetuating their victimisation each time any explicit content of the child is shared or viewed. Technology poses another challenge here since many children may not use technology to their advantage, not deliberately always but sometimes because of sheer ignorance. This ignorance can be a trap for the perpetrators for luring children into the activities that result in them being sexually exploited.^{10, 11}

It becomes incumbent upon authorities to recognise dignity harm and frame ethical and legal responses for the same. Tracing the sharing of sexually explicit content, deterrent regulations, child care support and ensuring societal education should be at the forefront to act as a starting step to combat child pornography in the digital age.

Advancements in social media and artificial intelligence introduce significant complexities in combatting child exploitation. Digital anonymity enables predators to groom and exploit children, complicating traditional enforcement approaches. International frameworks such as the Lanzarote Convention provide legal avenues, yet practical implementation remains challenging due to rapid technological developments. Enhanced oversight, technological innovations, and international cooperation are essential.

While efforts have been there to tackle child pornography in its traditional context, there is still a tangible gap to address this challenge in the digital age. The reasons can be sporadic spread of technology¹², the anonymity factor, the transcendental growth of Artificial Intelligence amongst the many reasons. Technology has not only facilitated child sexual abuse but has also given rise to new forms of child exploitation.¹³ Adults often use the means of Information and Communication Technologies (ICT) to commit cyberenticement¹⁴, online grooming¹⁵ which can include the preparatory element i.e., “a process by which a person prepares a child,

¹⁰ “‘Predators Are Becoming More Sophisticated’ Pornographers and Pedophiles Online’ (n 4).

¹¹ DICK THORNBURGH and HERBERT LIN, ‘Youth, Pornography, and the Internet’ (2004) 20 Issues in Science and Technology 43.

¹² Ian O’Donnell and Claire Milner, *Child Pornography: Crime, Computers and Society* (Willan 2007).

¹³ ‘Study on the Effects of New Information Technologies on the Abuse and Exploitation of Children’. - United Nations Office on Drugs and Crime, *Study on the Effects of New Information Technologies on the Abuse and Exploitation of Children* (UNODC 2015) https://www.unodc.org/documents/Cybercrime/Study_on_the_Effects.pdf accessed 10.12.2024

¹⁴ cyber enticement means communicating with a child through the internet with the intention of committing a sexual offense or abduction of the child - ‘Cyber-Enticement’ *Law Insider* <https://www.lawinsider.com/dictionary/cyber-enticement> accessed 10.12.2024

¹⁵ Online grooming is when someone uses the technology or the internet to build a relationship with a young person, with the intention of tricking, pressuring or forcing them into doing something sexual, like sending images or videos of themselves. - *CEO Education*, ‘Online Grooming’ https://www.ceopeducation.co.uk/11_18/lets-talk-about/sexual-abuse/online-grooming/ accessed 10.12.2024

significant adults and the environment for the abuse of this child. Specific goals include gaining access to the child, gaining the child's compliance and maintaining the child's secrecy to avoid disclosure."¹⁶ The new challenge also breeds ground for solicitation of children for sexual purposes.

The 'Lanzarote Convention' works in criminalising child sexual abuse in any form. Article 23 of the Convention¹⁷ makes it incumbent upon parties to build legislative measures to prevent any form of solicitation of children.

A comparative analysis of legislative measures—such as the PROTECT Act (U.S.), the EU Directive 2011/93/EU, and India's POCSO Act—reveals varying levels of effectiveness. Each has strengths but also significant limitations regarding implementation, definitions, and adaptability. Recent judicial recommendations for terminological changes in the POCSO Act highlight growing awareness of digital harms, underscoring the need for comprehensive legislative reform.

Sweetie 2.0 project¹⁸ is a project that was commissioned by Terres De Homes¹⁹, the aim of which is to protect child rights and combat child sex tourism. It is more particularly concerned with preventing webcam child sex tourism. Webcam child sex tourism has been a global concern that banks on sexual exploitation of children. The offenders also find easy access to child-abuse images. This project highlights the use of artificial intelligence in taking a step to fight webcam child sex tourism. In this project, Terres De Homes employed a virtual 10-year-old Philippine girl by the name of Sweetie. Sweetie was a so-called chatbot that was used to identify offenders in a chatroom. The aim of this project was to track, identify and deter individuals from using the internet to sexually abuse children. Using chatbots can aid in covering large parts of the internet. It can help in filtering the process of pinning down

¹⁶ Quayle, E., et al. In: Ainsaar, M., Lööf, L. (eds.). P. 15.

¹⁷ Europarat (ed), *Protection of Children against Sexual Exploitation and Sexual Abuse* (Council of Europe Publ 2012). Article 23 – Solicitation of children for sexual purposes- Each Party shall take the necessary legislative or other measures to criminalise the intentional proposal, through information and communication technologies, of an adult to meet a child who has not reached the age set in application of Article 18, paragraph 2, for the purpose of committing any of the offences established in accordance with Article 18, paragraph 1.a, or Article 20, paragraph 1.a, against him or her, where this proposal has been followed by material acts leading to such a meeting.

¹⁸ Simone van der Hof, *Sweetie 2. 0: Using Artificial Intelligence to Fight Webcam Child Sex Tourism* (TMC Asser Press 2019).

¹⁹ leading Swiss organisation for children's rights, created in 1960, the Terre des hommes foundation is committed to protecting children's lives and their rights, and improving their well-being.- Terre des Hommes, 'About Us' (Terre des Hommes) <https://www.tdh.org/en/about-us> accessed 11 December 2024

offenders by warding them off with legal consequences for their actions.

As creative as this project may seem, it is fraught with its own set of challenges. Pertinent questions that arise range from, do laws make sexual interaction with a virtual child a criminal offence, can a chatbot be used as investigative software so as to attract the application of procedural rules, can we rely on artificial intelligence to monitor offenders? These are just some questions that are indicative of a grey area. If used in an ethical manner with all the necessary guidelines in place, this can definitely make monitoring and prevention smooth and fast paced.

The Prosecutorial Remedies and Other Tools to End the Exploitation of Children Today (PROTECT Act) (2003-2004)²⁰ of the United States aims at preventing child abuse, laying down stricter guidelines for investigating and prosecuting any form of violent crimes against children. This act has incorporated The Truth in Domains Name Act (TDNA), 2003²¹ which is a piece of legislation aimed at preventing the misuse of domain names for the purposes of child exploitation and abuse. The TNDA act criminalises the creation of misleading domain names that are designed to lure children into inappropriate content and leave them lurking on the murky grounds of child abuse. This becomes even more crucial given the challenges that technological frontiers have exposed in recent times. Filtering the mechanism of any such suspicious domain name would enable one to terminate illegal successive actions in this regard.

The Protect Act encapsulates harsh punishments for sex offenders who have been convicted of sex offences against a minor. The act is premised on several measures, the names of which have been ironically and sadly derived from several offences against minors. The act features the 'America's Missing: Broadcast Emergency Response', (AMBER ALERT)²² which works in tracing abducted children. There are also regional alert names premised similarly on the names of missing and abducted children. The United States Justice Department has also teamed

²⁰ S.151 - 108th Congress (2003-2004): PROTECT Act, S.151, 108th Cong. (2003), <https://www.congress.gov/bill/108th-congress/senate-bill/151>. Accessed 11.12.2024

²¹ Christopher G. Clark, The Truth in Domain Names Act of 2003 and a Preventative Measure to Combat Typosquatting, 89 Cornell L. Rev. 1476 (2004) Available at: <http://scholarship.law.cornell.edu/clr/vol89/iss6/3> accessed 11.12.2024

²² The AMBER Alert System began in 1996 when Dallas-Fort Worth broadcasters teamed with local police to develop an early warning system to help find abducted children. AMBER stands for America's Missing: Broadcast Emergency Response and was created as a legacy to 9-year-old Amber Hagerman, who was kidnapped while riding her bicycle in Arlington, TX, and then brutally murdered. Other states and communities soon set up their own AMBER plans as the idea was adopted across the nation. -Amber Alert, 'About Amber Alert' (Amber Alert) <https://amberalert.ojp.gov/about> accessed 11 December 2024.

up with Google and Facebook to pace up the tracing of offenders using amber alert. This would relay the search process. Through this alert, the police organisation releases relevant details like the name of the abductee, the estimated description of the suspected abductor and the description of the number plate of the abductor's vehicle. The details vary as per the various cases.

The European Union (EU) Directive 2011/93/EU²³ is a legal framework on similar lines that aims at tackling and preventing sexual exploitation of children and child pornography within the jurisdiction of the EU. It recognises within its ambit the role of the internet as a breeding ground for an exponential increase in child pornography. The directive targets new age challenges like online grooming and circulation of child sexual abuse material over the internet and mandates maximum terms for such serious crimes. It necessitates conducting child-sensitive judicial proceedings and also mandating comprehensive support services.

In India, the Protection of Children from Sexual Offences Act (POCSO), (the act) 2012 works as a legal framework to target child pornography. The POCSO Act criminalises acts that involve the use of children in any form of sexually explicit conduct. It also empowers the authorities to investigate and prosecute cases involving digital media, this becomes crucial given the modern form of cybercrimes. Supplementing this, is the measure to track and remove sexually explicit content from the internet. In a recent case,²⁴ the Supreme Court of India proposed a change before the parliament in the POCSO Act stating that the term 'child pornography' be substituted with "child sexual exploitative and abuse material" (CSEAM)²⁵. The reasoning for this change was that the term 'pornography' hints at voluntary acts between two consenting adults and therefore using the same for children belittles the damage they suffer and undermines the victimisation. CSEAM covers such crimes against children more extensively. The new proposed change will extend over various crimes committed against children, more so in the context of the same being done online through the use of various platforms. With regard to combatting the layered challenges in the digital sphere, the court made a remarkable suggestion²⁶ thereby increasing the ambit of liability. The court also made

²³ Directive 2011/93/EU of the European Parliament and of the Council of 13 December 2011 on combating the sexual abuse and sexual exploitation of children and child pornography, and replacing Council Framework Decision 2004/68/JHA [2011] OJ L335/1. < <http://data.europa.eu/eli/dir/2011/93/oj> > Accessed 11.12.2024

²⁴ JUST RIGHTS FOR CHILDREN ALLIANCE v S. HARISH Diary No.- 8562 – 2024, 2024 LiveLaw (SC) 728

²⁵ *ibid*

²⁶ "A child's victimization begins with the sexual act, continues through its recording, and perpetuates as photographs and videos that float through cyberspace, freely accessible to anyone who has the ability to surf the

a remark on the extent of harm a child suffers when exposed to the dangers of the internet. Content once shared can resurface in the realm of the internet given its complex nature, this can have a lasting trauma on the child.

Effectively combating child exploitation demands coordinated, multi-layered strategies. Recommendations include embedding digital literacy into education, strengthening parent-child communication regarding digital risks, enforcing stringent platform regulations, and fostering collaborative actions between governments, NGOs, and tech companies. Addressing practical barriers requires strategic initiatives such as awareness campaigns, resource allocation, and international collaboration.

The cure to sexual crimes against children needs a step-by-step redressal. At the ground level, family as an awareness-creating mechanism can contribute majorly. Active engagement of parents with their children in making them aware of the pros and cons of technology may be helpful. Healthy conversations with children about themes that parents often shy away from discussing may seem pertinent in this regard. This would encourage children to openly discuss any such violation that the child may have faced. This is fundamental as more often than not, there is a communication gap between children and parents that is often shrouded by multiple factors, ranging from hesitancy to conservation barriers. Also, strict parental control over the technological devices of children should be made mandatory by every platform that has the tendency to get children hooked to it. Children may not be able to differentiate between relevant content and harmful content, it thus becomes necessary for requisite permissions in place when accessing any platform. The second stage could be extensive educational programs at schools that incorporate digital literacy in the curriculum. Awareness stems from clarity and unless the use of technology becomes clear to children, they may face entrapment because of the underlying ignorance. Sensitization campaigns organised at the school level can also enable

internet. 1 Child sexual exploitation is one of the most heinous crimes imaginable, and the offence of Child Pornography is equally as heinous, if not more, as in the latter the victimization and exploitation of the child does not end with the initial act of abuse.² The creation or dissemination of such pornographic material further extends and compounds the harm infinitely and at a far larger scale.³ It in essence turns the singular incident of an abuse into a ripple of trauma inducing acts where the rights and dignity of the child is continuously violated each time such material is viewed or shared. This is 1 Eva J. Klain, Heather J Davies, Molly A. Hicks Et. Al., *Child Pornography: The Criminal Justice-System Response*, 8 (Penn State University Press, 2001). 2 Philip Jenkins, *Beyond Tolerance: Child Pornography on the Internet* (New York University Press, 2003) 3 Burgess, Ann W. & C.R. Hartman, *Child Abuse Aspects of Child Pornography*, 7 *PSYCHIATRIC ANNALS*, 248 (1987). Criminal Appeal Nos. 2161-2162 Page 168 of 199 why it is imperative that we collectively as a society address this issue with the utmost seriousness.” - JUST RIGHTS FOR CHILDREN ALLIANCE vs. S. HARISH Diary No.- 8562 – 2024, 2024 LiveLaw (SC) 728

vulnerable children to speak openly about such violations. Another crucial step in this regard is the healthy collaboration amongst governments, NGOs and tech companies. This collaboration can help in a conjunctive effort to detect and report child exploitation. Governments can incentivise companies and tech firms to prioritise safety measures. While jurisdictions have the essential laws in place, better implementation is needed. Legislations have to be equipped to keep pace with the technology-oriented challenges that surface with regard to the violation of children's rights. These steps combined can definitely pave the way for a 'clear' road ahead.

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