ISSUES AND CONCERNS RELATING TO CYBORGS AND TECHNOLOGICAL ENHANCEMENTS: UNDERSTANDING LEGAL IMPLICATIONS OF CIRCUITRY NEURONS

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Abstract

'Cyborg' as the name suggest is a newer technological specie in which the technology combines with an organism hence making it more of a machine and less of a biological being. Certain neuroprosthetic devices when fitted into a human body enhance the motor and computational capabilities. What if someone hacks into the neuroprosthetic device and interferes with the mind functioning and consciousness of the cyborg, and what if someone's mind is influenced to buy a specific brand of product for commercial advantage? For enhancing our powers and abilities, we agree to integration of our bodies with technology, which may shout out for an international response, as it shakes the foundational values of humanity.

Key words-
Cyborgs, Technological Enhancement, Law, Neuroprosthetic Devices

Introduction

Though the term 'cyborg' may sound both novel and novice, but the fact is that cyborg technology has been in use for quite some time now. The term 'Cyborg' was coined by Manfred Clynes in 1960 for a paper meant to be presented at the NASA conference. Cyborg was conceived as an amalgam of 'cybernetics and 'organism' designed to armor problems of space travel. Cyborg as per the concept, enhanced the capacity of a human to survive in hostile and adverse environment[1]. Some of the relatable examples are prosthetic limbs, heart pacemakers and prosthetic devices implanted in brain area etc., most of which are controlled by thoughts[2]. The technology is also on the verge of brain implants which will enhance the cognitive abilities[3]. Cyborgs are now demanding cognitive liberties as they are under constant threat of being intruded by third party[4]. This not only raises concerns over cognitive liberty but also privacy and loss of identity as a human being[5]. It is pertinent to mention that every enhancement caused by

[1]Jackie Orr, Materializing a Cyborg's Manifesto, 40 WOMEN'S STUDIES QUARTERLY 273 (2012).

[2]John Law and Vicky Singleton, Performing Technology's Stories: On Social Constructivism, Performance and Performativity,"TECHNOLOGY AND CULTURE" 765 (2000).

[3]Jose Luis Cordeiro, From Biological to Technological Evolution, 15 "THE JOURNAL OF INTERNATIONAL ISSUES" 86 (2011).

[4]Stephen Castell, The Fundamental Articles of I.AM Cyborg Law, 11 "BEIJING LAW REV" 911 (2020).

[5]L. E. Cohen and M. Felson, Social Change and Crime Rate Trends: A Routine Activity Approach,44 "AMERICAN SOCIOLOGICAL REVIEW" 598 (1979).

artificial intelligence may not be a cyborg[6]. Also, it is necessary to understand that every prosthetic equipment implanted is again not cyborg[7]. Certain implants may be only externally attached, lacking computational abilities[8]. Cyborg's now mix their personality as a human and as a technological being, where they have accepted these technological auxiliaries as a part of their body, mind and being[9]. The legal issues pertaining to these can transgress upon privacy law, constitutional freedoms, property rights, medical negligence during implants, consumerism, disability law, copyright issues etc[10].

When we discuss the Cyborg concepts, a liberal interpretation may be given to it[11]. Cyborg must not be understood as a term related to human bodies with implanted chips but is a situation where the humans are engrossed with technology usage and are inseparably connected and dependent on it[12]. Wearing a digital device to measure health parameters or apps connected to these devices reflective of certain data concerning health is an example of how well the technology knows you and may be more than you[13]. The Supreme Court of United States in a case of *Riley v. California* (2014) included in the obiter that modern cell phones have now become a part of human anatomy and must not be searched by the police on arrest of a person without warrant for the purpose of gathering any data or information[14]. This is the first step towards acknowledging technology as a part of human being[15]. Before we discuss the concept and legal implications that it may give rise to, we need to acknowledge and accept the very presence of this technology that half of the world is unaware of and if by chance they know, relatability will be in reference to fictional movies and narrations. Thus, acceptance is the first step towards managing an apprehended technological catastrophe[16].

Understanding Cyberneuro ethics: Connecting Neurons and Circuits

The world is witnessing an era of neuronal interface systems where the mind and the

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[6]Peter K. Yu, Artificial Intelligence, the Law-Machine Interface, and Fair Use Automation, 72 "ALBAMA LAW REVIEW" 187 (2020).

[7]Dawn Goodwin, Refashioning Bodies, Reshaping Agency, 33 "SCIENCE, TECHNOLOGY & HUMAN VALUES" 345 (2008).

[8]Ryan Calo, Robotics and the Lessons of Cyberlaw, 103 "CALIFORNIA LAW REVIEW" 513 (2015).

[9]Katharina Block, Machina Sapiens: Digital Posthumanism from the Perspective of Plessner's Logic of Levels, 42 "HUMAN STUDIES" 83 (2019).

[10]Philip Auslander, Intellectual Property meets the Cyborg: Performance and the Cultural Polictics of Technology, 14 "PERFORMING ARTS JOURNAL" 32 (1992).

[11]Terrell Ward Bynum, Philosophy in the Information Age, 41 METAPHILOSOPHY 421 (2010).

[12]Martine Bellen, The Cyborg Suite,"ESSAYS ON THE WORLD AT LARGE" 253 (2006).

[13]D. Maimon, A. Kamerdze, M. Cukier And B. Sobesto, Daily Trends and Origins of Computer-Focused Crimes Against a Large University Network. An Application of the Routine-Activities and Lifestyle Perspective, 53 "BRITISH JOURNAL OF CRIMINOLOGY" 319 (2013).

[14]Kate Galloway, The COVID Cyborg: Protecting Data Status, 45 "ALTERNATIVE LAW JOURNAL" 164 (2020).

[15]S. Hinduja, The Heterogeneous Engineering of Music Piracy: Applying Actor- Network Theory to Internet-Based Wrongdoing, 4"POLICY AND INTERNET" 240 (2012).

[16]H. B. Milward and J. Raab, Dark Networks as Organisational Problems. Elements of a Theory, 9 "INTERNATIONAL PUBLIC MANAGEMENT JOURNAL" 355 (2006).

machines are interacting at full swing[17]. The concept may be raw at present because of an underdeveloped technology or science but the fact remains that such technology persists even in its reminiscent form thus making it mandatory for an inspection from both ethical and anthropological perspective[18]. This kind of joinder needs to be regulated and humans must be restrained from making choices that may harm them and also pose a threat to the society[19]. Such individuals will have to be saved from 'Hyper-connectivity' and rules will have to be laid down to enable them to cope up with abundant information[20]. Dealing with too much technology exposes them to distraction, where they are unable to focus on multiple tasks or understand the facts properly[21]. It is similar to a situation that they are now unable to filter the information and are engulfed by irrelevancy of not so required information[22]. This not just brings in the behavioral issues in an individual with symptoms of lost identity but also diminishes the line between what is personal and what is professional[23]. The neuronal interface systems have swamped the real world with virtualism[24]. The idea of collective consciousness is now replaced by the network consciousness[25]. Who would not want to be superior in race and be a part of the machine chauvinism[26]. The machines will soon be in conflict with religion and spirituality[27]. The moment they upload their minds in a computer, they will be senseless about anger, happiness and will live in immortality. The digitalized humans will be indifferent to concepts of forgiveness, compassion and sharing[28]. Every physical movement will have a virtual trail or timeline[29]. Any good experience could be revisited for emotional satisfaction. But what if these digital files of human were deleted or lost for some reason, will there be a retrieval mechanism too? Can sudden failure of the

[17]F. Gregory Lastowka and Dan Hunter, The Laws of the Virtual Worlds, 92 "CALIFORNIA LAW REVIEW" 25 (2004).

[18]Timothy W. Luke, Liberal Society and Cyborg Subjectivity: The Politics of Environments, Bodies and Nature, ALTERNATIVES 21 (1996)

[19]M. O' Neil, Revels for the system? Virus Writers, General Intellect, Cyberpunk and Criminal Capitalism, 20 "JOURNAL OF MEDIA AND CULTURAL STUDIES" 240 (2006).

[20]Michael Burger, Recovering from the Recovery Narrative: On Glocalism, Green Jobs and Cyber Civilization, 46 "AKRON LAW REVIEW" 925 (2013).

[21]Jack M. Balkin, Virtual Liberty: Freedom to Design and Freedom to Play in Virtual Worlds, 90 "VIRGINIA LAW REVIEW" 2043 (2004).

[22]David Lulka, The Residual Humanism of Hybridity: Retaining a Sense of the Earth, 34 "TRANSACTIONS OF THE INSTITUTE OF BRITISH GEOGRAPHERS" 378 (2009).

[23]Margaret Thornton, The Flexible Cyborg: Work-Life Balance in Legal Practice, 38 "SYDNEY LAW REVIEW" 14 (2016).

[24]Ronald R. Kline, Humans and Machines, 58 TECHNOLOGY AND CULTURE 835 (2017).

[25]Leilani Nishime, The Mulatto Cyborg: Imagining a Multiracial Future, 44 CINEMA JOURNAL 34 (2005).

[26]Emily Jones, Feminist Technologies and Post-Capitalism: Defining and Reflecting upon Xenofeminism, FEMINIST REVIEW 126 (2019).

[27]Kimberle Williams Crenshaw, Race, Reform, and Retrenchment: Transformation and Legitimation in Anti-discrimination Law, 101 HARVARD LAW REVIEW 1331 (1988).

[28]Ronald Kline, Where are the Cyborgs in Cybernetics, 39 SOCIAL STUDIES OF SCIENCE 331 (2009).

[29]Sumeyra Buran, Correspondence between Cyborg Body and Cyber Self, 5 JOURNAL OF RESEARCH IN GENDER STUDIES 310 (2015).

machinery cause death or trauma to a person?[30] For assessing how much of a machine has become human and how much of a human has become a machine, we rely upon the Turing test[31]. Humans would soon become 'monads', who lack interactions and are self-contained, with no other aspect of life. They are unaffected by physical or spatial interferences and are solely driven by internal dictates. They simply work on interpretations, representations and manipulations[32]. Will these monads suffer from virtual threats and nightmares in meta sphere in future is a thought to ponder upon[33]. The brain structures have already been sliced in 2013, hence making every inch of the brain structure decipherable. It won't be difficult to engage in the making of a replicated mind[34]. This leaves us with another interesting query? Will the nano-technology here play a role in identifying the functionality of each neuron, by attaching a neuro-machine to it. Therefore, such queries pertaining to person's identity triggers the need of carefully examining the ethical dilemmas related to neuronal interfaces[35]. Can a person in this way consider himself to be whole, where he is senseless about certain emotional simulations?[36]

I wish to quote certain examples to give a clearer picture of the concept of being a cyborg. John Rogers, a materials scientist in Illinois, at a conference pressed a point in the forearm with a pen and displayed certain patterns on a slide. These images were the pattern of his skin and also the pattern of the integrated circuits beneath his skin[37]. This circuitry monitored the heart rate, body temperature etc., which was stored as data in a nearby computer. This sounds relatable to many of us wearing digital watches and fit bits performing in similar manner though externally attached[38]. Another example was of a device that draped the animal's heart in circuitry and analyzed the functioning of all chambers of the heart. The device could emit pulse and generate heat and identify abnormal nerve patterns[39]. In another example, Michael McAlpine, a mechanical engineer created a bionic ear that could hear acoustic and ultrasounds. Another is the electronic skin with chemical sensors, which is soft and flexible used as prosthesis to

[30]Kieran Tranter, The Speculative Jurisdiction: The Science Fictionality of Law and Technology, 20 GRIFFITH LAW REVIEW 817 (2011).

[31]Tim Wu, Will Artificial Intelligence Eat the Law? The Rise of Hybrid Social-Ordering Systems, 119 COLUMBIA LAW REVIEW 2001 (2019).

[32]Thomas Cowper, Improving the View of the World: Law Enforcement and Augmented Reality Technology, 73 FBI LAW ENFORCEMENT BULLETIN 12 (2004).

[33]Mark A. Lemley, Law, Virtual Reality and Augmented Reality, 166 UNIVERSITY OF PENNSYLVANIA LAW REVIEW 1051 (2017).

[34]S.W. Brenner, Organised Cybercrime. How Cyberspace May Affect the Structure of Criminal Relationships, 4 NORTH CAROLINA JOURNAL OF LAW & TECHNOLOGY47 (2002).

[35]Patrick C. Lalonde, Cyborg Work: Borders as Simulation, 58 BRITISH JOURNAL OF CRIMINOLOGY 1361 (2018).

[36]Wendell Wallach, From Robots to Techno Sapiens: Ethics, Law and Public Policy in the Development of Robotics and Neurotechnologies, 3 "LAW, INNOVATION AND TECHNOLOGY" 185 (2011).

[37]Cyborg Wannabe, 32 THE HASTINGS CENTER REPORT 6 (2002).

[38]Peter Halewood, Law's Bodies: Disembodiment and the structure of Liberal Property Rights, 81 "IOWA LAW REVIEW" 1331 (1995).

[39]Stephanie Peebles Tavera, Utopia, Inc: A Manifesto for the Cyborg Corporation, "SCIENCE FICTION STUDIES" 21 (2017).

enable humans to feel their limbs again. Such examples are the window to the emerging domains of bio-electronics alarming for a regulatory checks and balances[40].

Emerging Era of Enhancement Technologies

The prosthetic add-ons are mostly restoring loss of ability used as a medical facility after taking due care and caution for public safety. Any issue related to it is generally covered by statutes and norms governing disability, medical negligence, citizen welfare etc[41]. In many jurisdictions (for example in United States) there are norms that regulates and check the product quality of these prosthetics and implants as they are merely devices and calls for 'best manufacturing practices'. But there are people who self-implant these devices under skin for notorious activities[42]. What law will regulate them and make them responsible for their misdeeds. In some parts of the world, implants and other devices are categorized on the basis of risk level thereby setting standards for public safety. It is so ironical to observe that we are debating about robots becoming human like because of artificial intelligence on one side and humans becoming robots like cyborgs on the other side[43]. The cyborg in nature and design is similar to a robot, giving it a direction to develop a legal framework keeping in mind the Robotics law[44].

Cyborgs open up discussion for governments on financial, ethical, legal and cultural issues. One may require an audit to understand the impact of technology, to understand how much of it is required to be restrained[45]. One cannot imagine the extent to which the technology is impacting and needs to be regulated[46]. Certain chip implants in the brain, are neuroprosthetic devices (like artificial hippocampus) meant to restore the damage caused to the brain through injury or loss, restore memories and also equip brain with superior capabilities like downloading information from internet, communicating through thoughts, edit memories and thoughts etc[47]. Similar example is of chip being inserted in the brain of soldiers fighting wars so as to suppress their emotions, helping them deal with trauma and fear. One can imagine how the binary language or algorithms inserted in the brain can give rise to copyright issues. It's only the nerves, synapses and neurons that hold true and natural to the soul of a human, rest everything

[40]Lisa Webley,The Profession(s) Engagements with LawTech: Narratives and Archetypes of Future Law, 1 "LAW, TECHNOLOGY AND HUMANS"6 (2019).

[41]Collin R. Bockman, Cybernetic-Enhancement Technology and the future of Disability Law, 95 "IOWA LAW REVIEW"1315 (2010).

[42]M. Yar, The Novelty of Cybercrime: An Assessment in Light of Routine Activity Theory, 2 "EUROPEAN JOURNAL OF CRIMINOLOGY" 423 (2005).

[43]Roger Brownsword, Law, Authority and Respect: Three Waves of Technological Disruption, 14 "LAW, INNOVATION AND TECHNOLOGY" 5 (2022).

[44]Kathleen Birrell, Indigeneity: Before and beyond the Law, 51 "STUDIES IN LAW, POLITICS AND SOCIETY 219" (2010).

[45]Joseph Pugliese, Prosthetics of Law and the Anomic Violence of Drones, 20 "GRIFFITH LAW REVIEW" 931 (2011).

[46]Rebecca Crootof, Cyborg Justice and the Risk of Technological- Legal Lock-In, 119 "COLUMBIA LAW REVIEW "233 (2019).

[47]Robert F. Service,The Cyborg Era Begins, 340 "AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE"1165 (2013).

needs a passcode[48]. It's not only that legal issues concern binary of integrated circuitry in chips but will also question the prosthetic devices manufactured with novelty, which can raise claim for patent protection[49]. It will be interesting to note that whether with thoughts we will be able to click on the 'I Consent' tab to agree to licensing terms or will our body be halted till we upgrade to a better version of operating system. Will we be able to store our thoughts in the cloud server is another interesting query as our thoughts in the cyborg world are nothing but processed pieces data and information[50]. If this is the scenario, what privacy rights are we talking about. How are the courts going to investigate into the artificial structures of body and mind[51]. Are we in real stepping into age of cyborg where part of our brain runs on neurons and other half on integrated circuits disputed by numerous patent holders[52]. Certain jurisdictions even allow for reverse engineering of integrated circuits does that mean, we will be able to reverse engineer the mind of a cyborg. If yes, is there any obligation or responsibility under the law[53].

The information technology laws will require upgradation as privacy becomes a major issue. In cases of cyborg the most expected crime, is the crime of hacking[54]. Can the information stored in the form of memory be manipulated, can thoughts be tampered with, can data stored in the artificial structures of brain be stolen? These are the emerging legal implications of cyborg technology[55]. How hacking of implants take place can be understood from an example, where retinal prothesis was hacked to place the image on the back of retina that a person never saw, similar is the case of hacking into cochlear implants to transmit sounds that person never experienced or heard before[56]. At the moment we are suspecting individuals and corporations making hacking attempts into the implants but what would be the consequence if this intrusion came from the government side[57]. So, till now, spoken words and gestures could be considered as seditious but if the government hacks into the mind can a mere thought make the person liable for crimes like sedition[58].

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[48]Margaret Morse, What Do Cyborgs Eat? Oral Logic in an Information Society, 16 DISCOURSE 86 (1994).

[49]Tim W. Dornis, Artificial Intelligence and Innovation: The End of Patent Law as We Know It, 23 "YALE JOURNAL OF LAW AND TECHNOLOGY" 97 (2020).

[50]O. E. Radutniy, Adaptation of Criminal and Civil Law in View of Scientific-Technical Progress, 144 PROBLEMS OF LEGALITY 138 (2019).

[51]Daniel-CosminSporea, The Cyborg Judge: An Automation of Criminal (In)Justice?,REV UNIVERSUL JURIDIC 71 (2022).

[52]Mika Viljanen, A Cyborg Turn in Law, 18 GERMAN LJ 1277 (2017).

[53]Marta Albert Marquez, Posthumanism, Artificial Intelligence and Law, 84 PERSONA Y DERECHO207 (2021).

[54]P. H. Robinson & John M. Darley, Does Criminal Law Deter? A Behavioural Science Investigation, 24 "OXFORD JOURNAL OF LEGAL STUDIES" 173 (2004).

[55]David S. Wall, Revenge of the Cyborg Trolls Part Two: Putting IT into the Law Curriculum, 8 INTERNATIONAL YEARBOOK OF LAW COMPUTERS AND TECHNOLOGY 66 (1994).

[56]Kieran Tranter, Nomology, Ontology and Phenomenology of Law and Technology, 8 "MINNESOTA JOURNAL OF LAW, SCIENCE & TECHNOLOGY" 449 (2007).

[57]Andrea M. Matwyshyn, CSR and the Corporate Cyborg: Ethical Corporate Information Security Practices, 88 "JOURNAL OF BUSINESS ETHICS" 579 (2009).

[58]Dennis J. Tuchler, Man-Made Man and the Law, 22 SAINT LOUIS UNIVERSITY LAW JOURNAL 310 (1978).

Taking a step further, how would we determine the *mens rea*[59]. How will we analyze that whether the intention was of the cyborg or was impacted by the third party due to hacking. We have learnt about various criminological theories in case of humans but hardly have we come across any theory concerning botnets or cyborgs[60]. But a study into it can help us in many ways for example, it would give us better understanding about crimes committed using technology, enhancement of criminological knowledge when it comes to connection between real and cyber world as a space for commission of crime, and a criminological study may also facilitate in developing countermeasures for these crimes[61]. The crimes committed by cyborgs or robots are not easy to conceptualize as these crimes are committed in a hybrid criminal network, where a crime is committed by coordination and mutual cooperation between humans and machines[62]. In this scenario we depend upon the Actor-Network Theory (ANT) which emphasis upon the involvement of non-human entities in commission of crime[63].

Regulating Cyborgs in Physical World

Information-Mediated Mechanism

There is a reason why the legal norms exist for humans and not for non-humans, because the non-humans lack free will and moral reasoning. Though, in majority of cases legal personality has been bestowed upon various non-human entities for protecting certain rights and imposing certain obligations[64]. When it comes to newer forms of life like Cyborg, a perpendicular existence needs to be acknowledged and regulated for co-existence in the upcoming world of hybridization[65]. This relates closely to the term, trans-humanism, which explains enhancements and human augmentation in conflict with ethics. The reason of inseparability of human and technology is the distinctiveness[66]. One of the prime ways to regulate cyborg is through information-mediated strategy which is comprised of two components: first, cyborgs have an internal cognitive ability which depends on the mechanical structure which helps in coordinating and making a decision[67]. Second, is the input of the information, which is fed into the system to set the ball rolling for predictable outcomes. Thus, to regulate or to

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[59]S. Brown, The Criminology of Hybrids. Rethinking Crime and Law in Technosocial Networks, 10 "THEORETICAL CRIMINOLOGY" 234 (2006).

[60]Wytske Van Der Wagen and Wolter Pieters, From Cybercrime To Cyborg Crime: Botnets As Hybrid Criminal Actor-Networks, 55 "THE BRITISH JOURNAL OF CRIMINOLOGY" 589 (2015).

[61]Shella Brown, The Criminology of Hybrids: Rethinking Crime and Law in Technosocial Networks, 10 "THEORETICAL CRIMINOLOGY" 223 (2006).

[62]Doran Larson, Machine as Messiah: Cyborgs, Morphs, and the American Body Politic, 36 CINEMA JOURNAL 57 (1997).

[63]J. Law, Notes on the Theory of the Actor-Network: Ordering, Strategy and Heterogeneity, 5 SYSTEMS PRACTICE, 375 (1992).

[64]Bradley Bryan, The Constitution and the Program: Haraway and the Politics of Cyborg Emancipation, 19 "AUSTRALIAN FEMINIST LAW JOURNAL" 105 (2003).

[65]Steven Shavell, Law versus Morality as Regulators of Conduct, 4 AM. L. ECON. REV.227 (2002).

[66]Chad D. Cummings, Transhumanism: Morality and Law at the Frontier of the Human Condition, 20 AVE "MARIA LAW REVIEW" 216 (2022).

[67]Alexandra M. FrancO, Trans-human Babies and Human Pariahs: Genetic Engineering, Transhumanism, Society and the Law, 37 "CHILDREN'S LEGAL RIGHTS JOURNAL" 185 (2017).

give direction to cyborg's action one must focus on the mechanical structure and above all the informational inputs. By supervising the informational input, one cannot determine the behavioral consequences but can certainly assess the impact it may cause[68].

Agencement Mechanism

Another way to regulate a cyborg is to consider the concept of *Agencement*, which means assemblage. There can be human knitting into heterogenous assemblages by adding machines, tools, prosthesis, computers to their bodies[69]. Regulatory agencement mechanism, identifies the assemblages that actant consist of and can reconfigure the material, textual and economics to enhance predictability of actions and outcomes of the cyborg[70]. Building cybernetic sensory systems in a cyborg can achieve a configuration to deliver focused and ascertainable data sets[71].

Nudging

To endorse the regulatory agencement protocol, we resort to concept of Nudging, which means to manipulate the choices, causing a person to make predictable choice as compared to other options[72]. Nudging is a way of regulating cyborgs and can be done in various ways, viz., Informational nudges by manipulating information and suggesting possible ways of action to get conformity or desired outcomes, persuasive nudge use emotions to cause repulsions to certain acts, default choice nudges uses laxity of an individual to refrain him from making choices, commitment nudges suppress impatience and impulsivity, transactional nudges filter desirable actions from irrelevant ones and lastly exemption nudges blur otherwise imposed restrictions for desirable actions[73]. The humans are no more the supreme in the pyramid, who initially mediated for inventions, as law never intervened for non-human entities[74]. But now the times have changed, the non-humans now attain legal personhood and actively work within the regulatory framework[75]. The role of robots and artificial intelligence driven machines in decision making will invite the role of law in future[76]. Cyborg legislations will not

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[68]Steven S. Kapica, Living in Technical Legality: Science Fiction and Law as Technology, 28 "GRIFFITH LAW REVIEW" 272 (2019).

[69]Nelly Oudshoorn, The Vulnerability of Cyborgs: The Case of ICD Shocks, 41 "SCIENCE, TECHNOLOGY & HUMAN VALUES" 769 (2016).

[70]Greta Olson, Law is not Turgid and Literature is not Soft and Fleshy: Gendering and Heteronormativity in Law and Literature Scholarship, 36 "AUSTRALIAN FEMINIST LAW JOURNAL"65 (2012).

[71]Corinne May-Chahal, Claire Mason, Awais Rashid, James Walkerdine, Paul Rayson and Phil Greenwood, Safeguarding Cyborg Childhoods: Incorporating the On/Offline Behaviour of Children into Everday Social Work Practices, 44 "THE BRITISH JOURNAL OF SOCIAL WORK" 596 (2014).

[72]Amorim, Hellen Marinho, Cardoso and Renato Cesar, The Cyborg at the Threshold of Humanity: Redifining the Natural Person, 46 REVISTA DE BIOETICA Y DERECHO 76 (2019).

[73]Emilie Cloatre, Law and ANT (and its Kin): Possibilities, Challenges and Ways Forward, 45 "JOURNAL OF LAW AND SOCIETY" 646 (2018).

[74]Grant Wilson, Minimizing Global Catastrophic and Existential Risks from Emerging Technologies Through international Law, 31 "VIRGINIA ENVIRONMENTAL LAW JOURNAL" 307 (2013).

[75]Frank Pasquale and Arthur J. Cockfield, Beyond Instrumentalism: A Substantivist Perspective on Law, Technology and the Digital Persona,"MICHIGAN STATE LAW REVIEW" 821 (2018).

[76]Mark A. Lemley and Eugene Volokh, Law, Virtual Reality and Augmented Reality, 166 "UNIVERSITY OF PENNSYLVANIA LAW REVIEW" 1051 (2018).

determine the legality of actions but will function towards the desired or rather directed consequences[77]. It will balance the intensities, intricacies and probabilities of desired outcomes by redesigning, reconfiguring and proliferating its processes and patterns[78].

Conclusion and Suggestions

Donna Haraway's *A Cyborg Manifesto* (1992) has now become a reality[79]. Considering the pace of technological advancements, it's difficult to say that Information Technology laws across the world are well equipped to deal with cyborg technologies. While there is a requirement to make regulatory and strategic decisions for combatting future technologies posing threat, we are still debating on ethical issues. Maybe today we are unable to visualize and realize the problems pertaining to cyborg technology as our minds in the name of technology think about mobiles and laptops only. We are not seriously thinking because we don't see this technology embedded, we don't see our mobiles embedded in our skin, we don't feel the ear phones implanted in the ears hence we do not understand, the implications of cyborg technology. To make a policy or strategy to deal with technological advancements, we first need to accept and understand that such changes are in reality taking over the world[80]. We at the moment cannot apprehend the challenges that we might face engulfed in wires and circuits. The upgradation of the digital health is a development par excellence which must not at any cost compromise the human rights[81]. New standards must be built on old norms to adapt to the swiftly rising capabilities. The inherent racism, biases and malfunctioning would raise the chances of legal interventions, accountability and question the democracy[82]. This is the obligation on the legislators to keep the tech creators and human rights saviors at par. Every machinery developed or enhancement technique applied must not ignore the local knowledge or contextual constraints. Looking at the pace with which the technology is advancing, there is a need to maintain the register or indices of approved technology issued for usage only after getting a license. This further calls for global set up of international health data regulatory bodies with proper representations and health surveillance safeguarding the human rights[83]. The discussion about having a global regime is only because of the reason that violations by technology will not target the defined geographical limits but will cause a ripple effect transnationally.

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[77]Nicolas Suzor, The Role of the Rule of Law in Virtual Communities, 25 BERKELEY TECHNOLOGY LAW JOURNAL 1817 (2010).

[78]Mika Viljanen, Cyborg Turn in Law, 18(5)"GERMAN LAW JOURNAL"35 (2017).

[79]D. Haraway, A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century, in D. HARAWAY, SIMIANS, CYBORGS AND WOMEN: THE RE-INVENTION OF NATURE, 149 New York: Routledge (1991).

[80]Barbara Pfeffer, The Bionic Plaintiff and the Cyborg Defendant: Liability in the Age of Brain-to-Computer Interface, 25 VIRGINIA JOURNAL OF LAW & TECHNOLOGY 56 (2021).

[81]Sara L. M. Davis And Carmel Williams, Enter the Cyborgs: Health and Human Rights in the Digital Age, 22 THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE4 (2020).

[82]Linda Macdonald, Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future, 5 AMERICAN JOURNAL OF BIOETHICS 81 (2005).

[83]George Dery, Cyborg Moth's War on Terror: The Fourth Amendment Implications of One of the Federal Government's Emerging Surveillance Technologies, 11 "SMU SCIENCE AND TECHNOLOGY LAW REVIEW" 227 (2007).