Are Robots Deserving of Rights?

A critical analysis of how human technological innovation may result in an extension of rights to autonomous cyborg living

Lucy Young*

^{*} BA Law with Sociology at the University of Warwick Contact at: Lucy Young 1@warwick.ac.uk

Abstract- The human condition started to be defined by enlightenment thinkers, during the height of philosophical indulgence and theological sanctity. Something that 18th and 19th centuries could not predetermine was the haste in which the existence of mankind would develop past flesh and bone, and towards steel and artificial coding. This article observes the journey towards a cyborg existence, starting from the early days of Kant and Locke to the more recent era of Parfit, Harraway and Singer. Ultimately, I develop a more technical discussion surrounding the realities of technological enhancement, starting with the distinction between human, animal and transhumanist rights, evolving into a practical discussion about legislative implementation of these sociological values. I also take on a discussion of Western regulation, compared with the developing world and its approach to data use and technological leapfrogging. I conclude on the motion that public policy is lacking on the regulatory front, leaving the door wide open for new transhumanist enhancements, whilst still lacking protections for developing nations.

Introduction

In order to understand the appropriate scope of the law on this issue, I will define what it means to be a 'socially recognised agent', both in today's modern technological society and in previous ages. In doing so, I will address the developing abundance of artificial intelligence we see present amongst all walks of life, and whether AI machines are capable of consciousness, or deemed to be socially recognised agents; in contemplation of this, I will discuss whether rights should be afforded to AI machines, and on which grounds should they be based upon. I will raise questions regarding legal boundaries of AI altered humans, through reference to various biomedical and commercial practices that have largely excelled as a result of technological advancements, and how governing bodies have attempted to regulate or liberate cyborg freedom as a result. As Donna Haraway stated within The Cyborg Manifesto, "the difference between machine and organism is thoroughly blurred;

mind, body, and tool are on very intimate terms"¹. I will look to explore this in legal and philosophical contexts.

I. Defining Rights throughout Contextual History and Modernity

Primarily, we must establish what it means to be a 'socially recognised agent', both historically and within today's society. In order to do this, we must understand rights from a normative and ontological perspective. 'Human rights' began as a 17th and 18th century European concept, tailored on the basis of religious values, with hastened development throughout England, in response to an oppressive monarchy which resulted in The Glorious Revolution and subsequently, the Bill of Rights (1689). Oliver Wendell Holmes stated that "when we speak of human rights, we mean to mark the limits of interference of individual freedom that we prescribe to our conscience"2; this is still paralleled in modern legal definitions today, as "a right, in its most general sense, is either the liberty (protected by law) of acting or abstaining from acting in a certain manner, or the power (enforced by law) of compelling a specific person to do or abstain from doing a particular thing"3. In the 18th century, John Locke prescribed God's natural law to protect all humans from harm in life, health and liberty. Acknowledging Locke, Rivero suggests, "it is nature that founds human rights; they are inherent to man, prior, consequently, to any society". Kant believed human beings held a heightened sense of dignity and intrinsic worth, thus an increased degree of autonomy and a greater

-

¹ Donna Haraway, A Cyborg Manifesto: Science, Technology and Socialist-Feminism in the Late 20th Century (University of Minnesota Press 2016) 36

² Oliver Wendell Holmes, *The Path of Law* (Harvard Law Review 1897) 457

³ Jowitt's Dictionary of English Laws (5th edn, 2019)

urgency for rights to define a societal moral order 4. This advocates the stance of speciesism, acknowledged by Peter Singer⁵, where human beings are deemed more worthy of moral contemplation above all other creatures Alternatively, Engelhardt⁶ understands the legal protection of animals (and by proxy AI machines) to be unjustified, and a breach of human rights and liberties. He simultaneously believes that although all people are human beings, not all human beings constitute as persons - newborn babies, the severely disabled and vegitative patients are 'non-persons'. Therefore, integrating rights for manmade intelligence is degrading for human beings who may not be classified as socially recognised agents. Bentham's utilitarianism, that prescribed human rights as 'nonsense on stilts', would concur with this perspective⁷.

Many philosophers see human rights regulation as a representation of cosmopolitan, western ideology that developed after the Enlightenment. Whilst Kant argued that this entailed application of human rights both within the state and externally, Pogge believed that human rights should be enforced 'vertically', replacing the wholly encompassing international bodies⁸. More substantively, the Universal Declaration of Human Rights 1948 governs the rights and duties of 'humans' yet fails to identify what being 'human' legally entails. In 2017, motions towards the European Commission argued for robots to receive the status of 'electronic persons', yet unsurprisingly failed due to the ever changing nature of tech innovation.

-

⁴ Linda MacDonald Glenn, *Biotechnology at the Margins of Personhood: An Evolving Legal Paradigm* (Journal of Evolution and Technology, 2003) Vol. 13.

⁵ Peter Singer, *Speciesism and Moral Status* (Blackwell Publishing, 2009) Vol. 40, 572 - 576.

⁶ H. Tristram Engelhardt, Jr., *Mind-Body: A Categorical Relation* (Springer, 1973) and "Bioethics and Secular Humanism: The Search for a Common Morality" (Trinity Press International, 1991)

⁷ Bentham, Jeremy, *Principles of International Law*, in *The Works of Jeremy Bentham*, ed. John Bowring, vol. 2, (New York: Russell & Russell, 1962) 535–560

⁸ Thomas Pogge, World Poverty and Human Rights (Ethics & International Affairs, 2006) 19(1):1-7.

II. Contextual Definitions of Socially Recognised Agency

Defining and identifying the scope of what it means to be a 'socially recognised agent' requires reference to synonymous terms used throughout ethical debate. Daniel Dennett proposes criteria for 'personhood', which includes consciousness, ability to reciprocate and communicate 9. A reductionist perspective, adopted by Derek Parfit, observes personal identity as a bridge of continuity between mind and body, and suggests we should not assume that humans exist outside of this realm¹⁰. Speaking upon functionalist grounds, Dwight van de Vate clearly states that there is a distinction between personhood and 'thinghood', and this is highlighted when "we say that they [children, corporations, mentally ill] too have their rights. On the other hand, they are not allowed to defend their rights; we persons do that for them"11. Yielding this ability to assert rights on other beings is something we, as humans and as socially recognised agents, can use to distinguish ourselves from other potential agents worthy of 'personhood'. Where Peter Singer argued for the personhood of Koko the gorilla¹², drawing upon traits acknowledged by Dennett, many philosophers have debated whether one can draw rational and synonymous ethical conclusions with AI machines and robotics; and if so, what types of rights should be afforded to machines if they are to continue the journey of technological enhancement. Where we may believe animals to have personhood, AI robots are different - machines are an extension of human nature. Therefore, if we continue to programme our identity into AI

_

⁹ Daniel Dennett, *Conditions of Personhood* (Contemporary Issues in Biomedicine, Ethics and Society [CIBES], 1988).

¹⁰ Derek Parfit, Reasons and Persons (Clarendon Press, Oxford, 1984).

¹¹ Dwight van de Vate Jr., *The Problem of Robot Consciousness (Philosophy and Phenomenological Research*, 1971) 32, No. 2: 149-65.

¹² Peter Singer and Paola Cavalieri, *The Great Ape Project* (St. Martin's Press, 1993) 58-77.

machines, one must also consider the ethical implications of having a 'conscious' humanlike moral compass enshrined in everyday, dependable tech.

Advancements have been made with 'careworthy' tech throughout many specialist universities. The Washington Post revealed that the US army deemed a robotics experiment inhumane after a machine's 'legs' were blown off, but it kept crawling to safety. Ted Bogosh, a U.S. army robotics technician, even stated there were emotional connections to the robots, and that it is "like having a pet dog... It becomes part of the team, gets a name. They get upset when anything happens to one of the team. They identify with the little robot quickly. They count on it a lot in a mission"13. This is something that Margaret Boden has specifically warned us against - "there is no such thing as an ethical robot, or ethical online AI system. There is no such thing, there never will be such a thing" 14. This suggests that AI machines are simply making morally relevant decisions based upon what humans have programmed into them, thus meaning it is impossible for them to be moral agents as they hold no autonomous responsibility. In divulging on similarities between humans and robots, one may conclude that "if the mind just is a complex algorithm, then we may eventually have little choice but to grant the same moral status to certain machines that humans have"15. One could explore Zoopolis (Donaldson and Kymlicka, 2014) and find similarities between ethical dilemmas concerning animals and robots - in the future, cyborgs may not have an easy off-switch, they could be made from organic materials and store human consciousness.

_

¹³ Joel Garreau, Bots on The Ground: In the Field of Battle (Or Even Above It), Robots are a Soldier's Best Friend (The Washington Post, 6 May 2007)

¹⁴ Future of Life Institute (2017) AI and Ethics [Online Video] Available at: https://www.youtube.com/watch?v=KVp33Dwe7qA [Accessed 12 April 2020]

¹⁵ Mathias Risse, Human Rights and Artificial Intelligence (Carr Center for Human Rights Policy, 2018) 3.

III. The Changing Nature of Society, Law and Technology

In 1999, brain chips were created to enhance the senses; in 2000, a device was created to control the central nervous system of a living creature 16. Kevin Warwick, developed methodology to connect the human mind to machines, through technical upload to a new physical form¹⁷. Objectively speaking, the persistent development of tech is far exceeding expectations established under Moore's Law, with specialists like Dr Hans Moravec predicting computers will exceed capacity, thus human intelligence, by 2030. The international instrument allowing for humans to continuously benefit from scientific exploration under Article 15(1)(b) of the International Covenant on Economic, Social and Cultural Rights facilitates the necessary development of a human rights-based approach (HRBA) to rationalise and substantiate 'consciousness' within AI machines¹⁸. Both Canada 19 and Australia 20 have both acknowledged the growing likelihood of basing AI legislation on Human Rights, including reference to ensuring programming organisations of AI are held accountable through 'Algorithm Review Boards' and 'Algorithmic Impact Assessments'.

-

¹⁶ B. D. Reger, K. M. Fleming, V. Sanguineti, S. Alford and F. A. Mussa-Ivaldi, *Connecting brains to robots: an artificial body for studying the computational properties of neural tissue* (Artif Life, 2000) 6: 307-324.

¹⁷ Kevin Warwick, *The disappearing human-machine divide* (Springer, 2013) Vol.3 No.2, pp 3-15.

¹⁸Lorna McGregor, et al, "The Universal Declaration of Human Rights at 70: Putting Human Rights at the Heart of the Design, Development, and Deployment of Artificial Intelligence" (HRBDT, 2018) 2-24.

¹⁹ Directive on Automated Decision-Making (2019) under Section 7 Financial Administration Act and Section 6.4.9 Policy on Management of Information Technology (Canada), available at https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32592.

²⁰ Australian Human Rights Commission, *Human Rights and Technology Issues Paper* (2018) 17-35.

This now associates with the main debate amongst specialists should AI machines (if held to be socially recognised agents) be deemed worthy of individual cyber rights and responsibilities, or should governing bodies of said AI machines be held morally and legally responsible for any potential wrongdoing? An interesting distinction, made by Matthew Liao (2010) 21, highlighted a theory surrounding moral status that suggested the possibility for AI to hold higher moral status than humans, with consideration that knowledge and capacity of AI is due to exceed that of humans in the near future. This compliments the requirement of species neutrality and overarching scientific empiricism, encouraged by the Universal Declaration of Human Rights (1948). More recently, the European Parliament's Committee on Legal Affairs called for a new category of individual within the recent motion for resolution (2016)²², but assessment of consequences under Paragraph 31(f) resulted in drawing liability towards creators. Rather, "the development of robot technology should focus on complementing human capabilities and not on replacing them", as recommended by the European Parliament 23, reflects eurocentric leniency in technological innovation, and their awareness that the autonomy of the robot is an extension of the autonomy of its creator. Bryson (2010) argues for liability to be placed upon the shoulders of AI creators as opposed to their subjects, simply leaving AI tech to be "tools we use to extend our own abilities".24

_

²¹ Matthew Liao, Agency and Human Rights. Journal of Applied Philosophy (Oxford University, 2010) 27, 15-25.

²² Nathalie Nevejans, *European Civil Law Rules in Robotics* (European Commission, 2016) 14-19.

²³ European Parliament, Recommendations to the Commission on Civil Law Rules on Robotics (2017) 4-6.

²⁴ Joanna Bryson, Robots Should Be Slaves. Close Engagements with Artificial Companions: Key social, psychological, ethical and design issues (John Benjamins, 2010) 11, 63-74.

IV. Practical Application of Cyborg Laws, Rights and Responsibilities

The US has grown one of the largest AI markets in the world, prioritising weaponry and national defence. Christine Fox advocates the use of AI within the military, arguing on behalf of the Laws of Armed Conflict. Various American defence directives are still in place to control the capabilities of autonomous drones²⁵, some even referring to lethal autonomous weapon systems, but keeping language indistinct for widened interpretation. It is due to the hastily growing AI market that policy makers are struggling to maintain the relevancy of legislation, nor can they understand the evolving depth of AI potential. This results in minimal constraints over the scope of AI development and use, and an exacerbated and highly competitive international market.

AI which is available for the public market includes eyegear, voice activation devices and autonomous cars. The role of driving usually depends upon the active agent's perception and decision making skills, yet this application of individual judgement has been mastered by an automated system, and sold to ordinary citizens throughout the public domain. But where should the liability fall if an autonomous car were to crash on a busy highway? Although the manufacturer could be seen as 'ultimately responsible for the final product'26, this would either deter companies from striving for innovation, or result in higher costs for consumers. The U.S. judicial system may simultaneously find that autonomous vehicles are more socially beneficial than they are detrimental - but this must be done with consideration to various Acts adopted by the U.S. Congress, which limits the possibility for courts to intervene.

²⁵ Specifically 'Autonomy in Weapon Systems', also known as DODD 3000.09.

²⁶ Gary Marchant and Rachel Lindor, *The Coming Collision Between Autonomous Vehicles and the Liability System* (Santa Clarita Law Review, 2012) Vol 52. No.4 Art.6, 1321-1340.

The U.K. has since published two papers in consideration of autonomous vehicles, yet neither address cases for potential litigation and ethical implications regarding both autonomous agency within the vehicle, nor the safety of individuals driving in the general vicinity. ²⁷ The government anticipates a £13 billion global market for AI systems by 2025. Whilst other countries like Russia and China heavily prioritise AI defence, the U.K. has prioritised 5G networks and Data Trusts, as well as greater focus on developing the technological capabilities in the NHS. Whilst the UK Ministry of Defence has discussed human-machine teams, as seen already in the States, this is not anticipated for a few decades to come. This indicates the fact that although tech is thriving in different ways on national scales, the lack of synchronicity will create many difficulties for foreign policy and international law. Current tensions already exist, as a result of the 2016 US election hacking and misappropriation of data, as well as the currently unpredictable debris fragmenting in every area of global functionality as a result of COVID-19.

V. Limitations of Existing Cyborg Law

The global south is yet to catch up with Western understandings, and are often seen to 'leap-frog' past the developmental stages of tech innovation, resulting in a serious lack of national security. Many nations, such as India and Brazil, even rely upon national security to disrupt and ultimately shut down the internet without ethical consideration. For the West to assert cyber rights, but fundamentally abandon those who are still legislating digital security, could create foreign policy disruptions and create a rift between international economies.

The first common law consideration of cyber rights in connection with humans was the case of Riley v California (2014). This case established the general principle that police officers cannot conduct a warrantless arrest of a mobile phone, in the

²⁷ The Department for Transport, *The Pathway to Driverless Cars: A Code of Practice for Testing* [Governmental Review] (2015) 3-14

incident of arrest. Chief Justice Roberts justified this by stating the device is an "important feature of human anatomy" 28, thus concluding the mobile phone held the same rights to privacy as the human being - the phone is simply an extension of the person who owns it. U.S. v Schlingloff²⁹ held that a computer forensic practitioner could not use automated data filters to find criminalising evidence that is external to the original basis of arrest. Both cases are highly problematic for legal enforcement, as this sets constraints which heavily impact their ability to properly protect the general public. In consideration of this, the higher courts have failed to find common ground between the two cases, meaning there is still much speculation and debate in relation to police rights of warrants and examining digital evidence.

One discrepancy of legal coverage is medical AI³⁰, whereby the implant or robotic limb is the subject of regulatory development, rather than the patient. The governing British legislation is found under Medical Devices Regulations 2002³¹, and it refers to 'accessory', 'system or procedure pack' or 'single-use combination pack', proving reluctance for ethical discussion. Not only does this prioritise the requirements and characteristics of the technology itself, but it also fails to recognise the rights of humans in the ownership of such technology, and whether the AI constitutes part of the person, or whether it has its own separate agency. Alternatively, in the States, medical prosthetics are currently regulated under the FDA, which typically applies to commercialised food and other everyday items. This is problematic if one wishes to assert a strong ethical basis for AI machines - autonomous agents may be essentially parallelled with the typical supermarket product in the eyes of the overarching regulatory body. The same could be argued in relation to UDHR

²⁸ (2014) 573 U.S. 373

²⁹ 901 F.Supp.2d 1101 (2012)

³⁰ Muireann Quigley and Semande Ayihongbe (2018) Everyday Cyborgs: On Integrated Persons and Integrated Goods [Medical Law Review] Vol. 26, No. 2, pp.276-308

^{31 2002} No. 618

1948 - the sole focus is the human species, yet the historic UN document fails to define what being 'human' entails.

Barfield and Williams (2017) explored the distinction between rights for property and rights for humans once a person has attached a cyborg machine to their person. What most researchers fail to acknowledge is the rights of the device itself, and whether it is capable of being lawfully wronged. This may be because adapting a prospective legal foreground could limit AI development, thus limiting international innovation. Alternatively, creating black letter legislation which either limits or extends the rights of cyber robots would set a definitive standard, one which is still highly conflicted within the cyber specialist community. But if one were to establish rights of AI tech, for machines capable of 'autonomous' thought and action, they would need to first refer to human rights; subsequently, another may recognise this as over-identification with cyborgs, and degradation of human beings as entirely sentient and moral agents.

Conclusion

Afterall, AI is created and programmed by human beings, and everything that makes AI what it is, results from an extension of our collected nature and culture. Although I agree with the statement that AI cyborgs may be capable of adopting the title of being 'socially recognised agents', along the same tangent as human beings, I believe there is still a long road ahead for technological enhancement before they become self-sustainable, autonomous and independent; resulting in a greater journey for legal rights as a species of being. It would go against our own

human nature and conscience to create beings that think, act and look similarly to us, yet afford them no rights of identity and essentially believe them to be slaves³². In conclusion, assigning rights to creatures which are not self-aware is nonsensical, and extends the scope to an unnecessary extent.

 $^{32}\,\mathrm{Joanna}$ J. Bryson, "Robots Should be Slaves" (2010) Chpt 11, pp. 63-74

Bibliography

- 1. Barfield, W. and Williams, A., Law, Cyborgs and Technologically Enhanced Brains (Philosophies, 2017)
- Bendett, S., Here's How the Russian Military is Organising to Develop AI
 (Defense One, 20 July 2018)
 https://www.defenseone.com/ideas/2018/07/russian-militarys-ai-development-roadmap/149900/>

Bioethics and Secular Humanism: The Search for a Common Morality (Trinity Press International, 1991)

- Bryson, J. J., "Robots Should Be Slaves. Close Engagements with Artificial Companions: Key social, psychological, ethical and design issues" (2010)
- Carneiro, R.L., "The transition from quantity to quality: A neglected causal mechanism in accounting for social evolution." (2000)
- Dennett, D., "Conditions of Personhood." in Goodman M.F. (eds) "What is a Person?. Contemporary Issues in Biomedicine, Ethics, and Society." (1988)
- 6. Department for Transport, *The Pathway to Driverless Cars: A Code of Practice for Testing* (Oxford Mobile Robotics Group, 2015)
- 7. Directorate-General for Internal Policies, European Civil Law Rules in Robotics (Policy Department for 'Citizens' Rights and Constitutional Affairs, 2016)
- 8. Fox, C., The Ethical Dilemma we Face n AI and Autonomous Tech (TEDx Talks, 11 May 2017) https://www.youtube.com/watch?v=3oE88_6jAwc
- 9. Fuller, S. What do you Think About Machines that Think? (2015, Edge Foundation)
- 10. Garreau, J., Bots on the Ground (Washington Post, 6 May 2007)

 Accessed at https://www.washingtonpost.com/wp-dyn/content/article/2007/05/05/AR2007050501009 pf.htm
 1>
- 11. Glenn, L. M. Biotechnology at the Margins of Personhood: An Evolving Legal Paradigm (2002, Biomedical Ethics Unit)
- 12. Gould, M. Marx and Weber and the logic of historical explanation: The rise of machine capitalism (2016)

GSK puts faith in AI to make more successful drugs more quickly (25 December 2019, The Guardian) Accessed at

https://www.theguardian.com/business/2019/dec/25/glaxosmithkline-gsk-artificial-intellienge-ai-drug-development

- H. Tristram Engelhardt, Jr., Mind-Body: A Categorical Relation (Springer, 1973)
- Haraway, D. J. A Cyborg Manifesto (University of Minnesota Press, 2016)
- 15. Hevelke, A. Nida-Rumelin, J., Responsibility for Crashes of Autonomous Vehicles: an Ethical Analysis (Springer, 2014)
- 16. Holmes, O. W., *The Path of Law* (Harvard Law Review 1897)
- 17. Kollewe, J. Oxford firm to screen 15,000 drugs in search for coronavirus cure (31 March 2020, The Guardian) Accessed at https://www.theguardian.com/business/2020/mar/31/oxford-firm-to-screen-15000-drugs-in-search-for-coronavirus-treatment
- 18. Lawlor, M., Robots Take the Heat (Signal, March 2005) Accessed at https://www.afcea.org/content/robots-take-heat
- 19. Liao, M. S. Agency and Human Rights (2010, Journal of Applied Philosophy)
- 20. Maccrimmon, S., UK Defence's Artificial Intelligence Landscape: is More Effort Required? (10 July 2019, King's College London) https://defenceindepth.co/2019/07/10/uk-defences-artificial-intelligence-ai-landscape-is-more-effort-required/
- 21. Marchant, G.E. and Lindor, R. A. The Coming Collision Between Autonomous Vehicles and the Liability System (Santa Clarita Law Review, Vol 52, No. 4, 2012)
- 22. McGregor, L. et al, The Universal Declaration of Human Rights at 70: Putting Human Rights at the Heart of the Design, Development, and Deployment of Artificial Intelligence (HRBDT, 20 December 2018)
- Minogue B.P. (Ed.), Palmer-Fernandez G. (Ed.), Reagan J. E.(Ed.), Reading Engelhardt (Kluwer Academic Publishers, 1997)
- 24. Müller, V. C. "Legal vs. ethical obligations a comment on the EPSRC's principles for robotics, (2017)
- Nevejans, N., "European Civil Law Rules in Robotics" (European Commission) (2016)
- Moore, J. L. and Langton, J. and Pochron, J. The Cost of Privacy: Riley v. California's Impact on Cell Phone Searches (DeSales University, 2014)
- 27. Parfit, D., Reasons and Persons (Clarendon Press [Oxford], 1984)
- 28. Pichai S., Coronavirus: How we're helping (6 March 2020, Google, The Keyword) https://www.blog.google/inside-google/company-announcements/coronavirus-covid19-response/

- Quigley, M. and Ayihongbe, S. Everyday Cyborgs: On Integrated Persons and Integrated Goods (Medical Law Review, 2018)
- 30. Rawls, J. The Law of Peoples (Harvard University Press, 1999)
- Reger, B. D., K. M. Fleming, V. Sanguineti, S. Alford and F. A. Mussa-Ivaldi, "Connecting brains to robots: an artificial body for studying the computational properties of neural tissue." (2000)
- 32. Risse, M. Human Rights and Artificial Intelligence, an Urgently Needed Agenda (Carr Center for Human Rights Policy, 2018)
- 33. Santow, E. and Farthing, S and Paleologos, Z. and Webber Corr, L., *Human Rights and Technology Issues Paper* (Australian Human Rights Commission, 2018)
- 34. Schwab, K. Shaping the Future of the Fourth Industrial Revolution (World Economic Fund, Geneva, 2018)
- 35. Singer, P., "Speciesism and Moral Status" (2009) and Cavalieri P., "The Case for the Personhood of Gorillas, The Great Ape Project" (1993)
- 36. The Berkman Klein Center for Internet & Society, *Cyberlaw and Human Rights: Intersections in the Global South* (Youtube, F12 February 2019)
- 37. UNIDIR, The Weaponization of Increasingly Autonomous Technologies: Artificial Intelligence (United Nations, 2018)
- 38. Van De Vate, D., "The Problem of Robot Consciousness." Philosophy and Phenomenological Research (1971)
- 39. Various Research Bodies, *Digital Technology and Healthcare: Which Ethical Issues for Which Regulations?* (French National Ethical Consultative Committee (CCNE) and the Committee for Ethics of Research (CERNA), 2018)
- 40. Veatch R.M., The Foundations of bioethics (Blackwell Publishers, 1999)
- 41. Wallach, W. and Allen, C., Can (Ro)bots really be Moral? (Oxford Scholarship Online, 2009)
- 42. Warwick, K., "The disappearing human-machine divide" (Springer, 2013)
- 43. Webster, G. et al, Full Translation: China's 'New Generation Artificial Intelligence Development Plan' [2017] (1 August 2017, New America) https://www.newamerica.org/cybersecurity-initiative/digichina/blog/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>
- 44. Wittes, B. and Chong, J., Our Cyborg Future: Law and Policy Implications (Center for Technology Innovation at Brookings, September 2014)

Legislation and Statute

- a. International Covenant on Economic, Social and Cultural Rights
 1966
- b. Medical Devices Regulations 2002
- c. Universal Declaration of Human Rights 1948
- d. Directive on Automated Decision-Making (2019) under Section 7 Financial Administration Act and Section 6.4.9 Policy on Management of Information Technology (Canada), available at https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32592

Case Law

a. Riley v California 573 U.S. 373 (2014)

U.S. v Schlingloff 901 F.Supp.2d 1101 (2012)