



UNIVERSITY OF LJUBLJANA

European Master's Degree in Human Rights and Democratisation  
A.Y. 2017/2018

**Virtually Overlooked:**  
Reimagining emerging technologies through the lenses of identity,  
ethics and human rights

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This master's thesis is an original, independent work of the author, Aviva Weizman – through the European Inter-University Centre and the University of Ljubljana.

I would like to give a special thanks to my supervisor, Eva Vrtačič for her guidance and candor; to Sandra Morton Weizman and Rita Sirignano for their invaluable support in editing and beyond; and to my friends and family for their patience, perseverance and hilarity.

## ABSTRACT

The means by which algorithms interact with society have become omnipresent in the modern age. While new technologies and algorithms have long been a hot topic for science fiction authors, the manners in which they actually affect the lived experience of many individuals tend to be more banal and obscure. However, by and large, algorithms have the potential to affect minority groups in different and much more dangerous ways than those who do not belong to such groups.

This work will take a nuanced consideration into ways in which algorithms can adversely affect those who are constantly and consistently overlooked. This discussion will be framed around the issue of 'bias', technological 'progress', and the knowledge claims that have been an ever-growing point of interest and contention, through the incorporation of philosophical and human rights-based frameworks.

## LIST OF ABBREVIATIONS

A4AI – Alliance for Affordable Internet  
ACLU – American Civil Liberties Union  
AI – Artificial Intelligence  
APC – Association for Progressive Communications  
CDR – Call detail Records  
CLODO – The Committee for Liquidation or Subversion of Computers  
CP – Civil/Political Rights  
DPD – Data Protection Directive  
ESC – Economic/Social/Cultural Rights  
EU – European Union  
FISA – Foreign Service Intelligence Act  
GDPR – General Data Protection Regulation  
GIS – Geographic Information System  
GLAAD – Gay and Lesbian Alliance Against Defamation  
HIV – Human Immunodeficiency Virus  
HRBA – Human Rights Based Approach  
HRC – Human Rights Campaign  
ICCPR – International Covenant on Civil and Political Rights  
ICESCR – International Covenant on Economic, Social and Cultural Rights  
ICT4D – Information Communication Technologies for Development  
IEEE – Institute of Electrical and Electronics Engineers  
IoT – Internet of Things  
IP – Intellectual Property  
ITU – International Telecommunications Union  
LBGTQ – Lesbian, Bisexual, Gay, Trans, Queer  
LDCs – Least Developed Countries  
MDGs – Millennium Development Goals  
MIT – Massachusetts Institute of Technology  
ML – Machine Learning  
NSA – National Security Agency  
ORCAA – O’Neil Risk Consulting & Algorithmic Auditing  
PANEL – Participation, Accountability, Non-Discrimination, Equality, Empowerment and Legality.  
SDGs – Sustainable Development Goals  
UDHR – Universal Declaration of Human Rights  
TRIPS – Trade Related Aspects of Intellectual Property Rights  
UN – United Nations  
UNESCO – United Nations Educational, Scientific and Cultural Organization  
UNDP – United Nations Development Programme  
UNGA – United National General Assembly  
WHO – World Health Organization

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## INTRODUCTION

Artificial Intelligence<sup>1</sup> (AI) and Algorithms<sup>2</sup> are an intriguing entry point to explore concepts of scientific/technological biases. This is particularly due to the way in which these recently developed technologies interact with minority rights issues in several intersecting ways in the digital age. That being said; AI, algorithm and their subsequent implications have been an ever-growing interest amongst academics for several years now.<sup>3</sup> This can be attributed to the fact that we have seen quite a large leap in regards to use of algorithms in our daily lives – primarily through the progress made under the umbrella of AI<sup>4</sup> and big data.<sup>5</sup> Not only do

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<sup>1</sup> Artificial Intelligence is a concept that is used broadly and refers to the ability of a computer or computerized entity to replicate or at least work within the schematics of what is normally considered to be characteristically human. Or, “Artificial Intelligence is the science of making machines do things that would require intelligence if done by men.”

Marvin Minsky, *Semantic Information Processing*, (Cambridge: MIT Press, 1968), P. v.

<sup>2</sup> In this instance, the author is referring to the ways algorithms in the sense of computer science: “informally, an algorithm is any well-defined computational procedure that takes some value, or set of values, as input and produces some value, or set of values, as output.”

Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest & Clifford Stein, *Introduction to Algorithm*, (Cambridge: MIT Press, 2001), P.10.

<sup>3</sup> Blay Whitby, has produced a number of works on the social implications of Artificial Intelligence in the past. He also completed his doctoral dissertation on this specific topic, in 2003.

See: Blay Whitby, *The social implications of artificial intelligence*, (London: Middlesex University, 2003).

Others from social science and communications disciplines, have also focused on the ways in other facets algorithms, including the way in which they ‘condition our very existence,’ as well as the power they hold, their relevance and accountability mechanisms.

See (in respective order): Rob Kitchin & Martin Dodge, *Code/space: Software and everyday life*, (Cambridge: MIT Press, 2011).

David Beer, *Popular culture and new media: The politics of circulation*, (New York: Palgrave Macmillan, 2013).

Tarleton Gillespie, ‘The relevance of algorithms’, T. Gillespie P. Boczkowski, & K. Foot eds., *Media technologies: Essays on communication, materiality, and society*, (Cambridge: MIT Press, 2014), P. 167-194.

Nicholas Diakopoulos, ‘Algorithmic accountability: Journalistic investigation of computational power structures’, *Digital Journalism*, Vol. 3, Iss. 3, (2015), P. 398-415.

<sup>4</sup> Like Machine learning: informally, the main definition of ML is usually allowing computers to find solutions to issues that it was not specifically designed to do.

Arthur Samuel, ‘Some studies in machine learning using the game of checkers’, *IBM Journal*, Vol. 3, (1959), 210-229.

Or, like deep learning: also known as deep structured learning or hierarchal learning is part of a broader family of machine learning methods based on learning data representations, as opposed to task-specific algorithms. Learning can be supervised, semi-supervised or unsupervised.

Juergen Schmidhuber, ‘Deep Learning in Neural Networks: An Overview’, *Neural Networks*, Vol. 61, (2015), P. 85-117.

<sup>5</sup> “Big data is the term increasingly used to describe the process of applying serious computer power – the latest in machine learning and artificial intelligence – to seriously massive and often highly complex sets of information.”

Microsoft Enterprise, *The Big Bang: How the Big Data Explosion Is Changing the World*, Microsoft UK Enterprise Insights Blog, (15 April 2013).

Available at: <https://blogs.msdn.microsoft.com/microsoftenterpriseinsight/2013/04/15/the-big-bang-how-the-big-data-explosion-is-changing-the-world/>, (Accessed on 19 June 2018).

algorithms open the Pandora's Box to a whole array of new issues in regards to legislation, implementation and justiciability, but also due to their relatively new and rapid advancements, their potential outcomes could be even more dangerous since legal frameworks have not been able to keep up. Algorithms can, and have already had, adverse effects on human rights, especially for those who are already marginalized, from a plethora of angles. Some argue<sup>6</sup> that this is due to the very essence of many algorithms being deeply flawed, non-transparent and thus, lacking in accountability. This is merited by the fact that the standard for both the governments and companies<sup>7</sup> that use them are enshrined by the concept of 'black box'<sup>8</sup> coding.

While these issues are very real, and very insidious, this thesis will focus primarily on the preconditions that exist beyond the lack of algorithmic accountability. These include how access to technologies relates to human rights, using algorithmic issues as primary examples. Further, it will look into the ways that these entities are portrayed as a-political, devoid of biases and how these preconceptions in themselves can adversely affect those who have been consistently pushed to the margins. To argue that it is the technology, or that the algorithms themselves are biased, is a symptomatic and reductive conclusion. This cannot be the case, since both, technological progress and its successive use are inherently politicized and can be understood as a reflection of its inventors, users, communities and societal biases of the world in which they live.

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One of the most often cited definitions of big data comes from a 2001 report, that makes no explicit mention of 'big data' but introduced the now widely referenced three-fold definition of the "Three Vs" of Big Data: Volume, Velocity and Variety.

See: Doug Laney, *3d data management: controlling data volume, velocity and variety*, Gartner, (6 February 2001), Available at: <https://blogs.gartner.com/doug-laney/files/2012/01/ad949-3D-Data-Management-Controlling-Data-Volume-Velocity-and-Variety.pdf>, (Accessed on 19 June 2018).

<sup>6</sup> See, for example: Sandra Wachter, Brent Mittelstadt & Luciano Floridi, 'Transparent, Explainable, and accountable AI for robotics', *Science Robotics*, Vol. 2, Iss. 6, (31 May 2017).

Mike Ananny, 'Towards an Ethics of Algorithms: Convening, Observation, Probability, and Timeliness', *Science, Technology, & Human Values*, Vol. 41, Iss. 1, (2015).

Rosie McGee, Duncan Edwards, Colin Anderson, Hannah Hudson & Francesca Feruglio, 'Appropriating technology for accountability: Making all voices count', Institute of Development Studies, (January 2018), Available at: [https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/13452/RR\\_Synth\\_Online\\_final.pdf](https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/13452/RR_Synth_Online_final.pdf), (Accessed on: 26 June 2018).

<sup>7</sup> Many organizations have been established recently that have these points of contention reflected in their mandates. Such examples include: the AI Now Institute and Algorithm Watch.

<sup>8</sup> The term 'black box' in this context refers to the means in which algorithms are protected from outside scrutiny, even though in most domestic laws algorithms cannot be patented. This subject and legislation will be discussed in further detail in Chapter I.

See: Alan D. Minsk, 'Patentability of Algorithms: A Review and Critical Analysis of the Current Doctrine', *Santa Clara High Technology Law Journal*, Vol. 8, Iss. 2, (1992).

In the first chapter, the author will lay the groundwork for the conceptual frameworks for the scope of this thesis. These include the ways in which technological access and advancements can be analyzed in reference to inalienable human rights<sup>9</sup>, along with colonial/imperialist epistemologies and ethical theory. This portion will also include a brief introduction of some of the concurrent legal instruments that pervade our digital world within an international framework; as well as an introduction to some contemporary issues rising from a significant divide in access to technologies, algorithmic accountability and big data. The next chapter will hone in on more specific ways in which algorithm and the ‘digital gaze’ can adversely affect minorities - and provide a philosophical and human rights-based critique on predictive policing practices in the United States and the extraterritorial effects it may have for the international community. The third chapter will consist of a case study, focusing on politicized aspects of algorithms and big data in social media outlets, namely Facebook. This portion will also include a discussion on the forthcoming data privacy issues arising from the Cambridge Analytica scandal, coupled with a further discussion of the forthcoming implementation of the General Data Protection Regulation (GDPR) – and how they can affect minority groups. The last chapter of this thesis will explore the positive aspects and examples of movements, projects, and institutions that already employ, or attempt to raise awareness towards inclusive and progressive means of digital and virtual ventures. Since, as previously mentioned, technology and algorithms are commonly perceived to be inherently biased - when they are, in fact, just mirrored reflections of ideological perspectives of those in power - it will further flesh out some frameworks in which we can work within to combat hegemonic and one-dimensional understanding of what it means to be a citizen in the digital age.

In regards to methodology; this thesis will incorporate and center human rights issues in tandem with contemporary ethical theories to establish an interdisciplinary analysis of the problem at hand. In referencing legal documents, scholarly journals within the context of the aforementioned frameworks, the author hopes to deepen the discussion of contemporary issues that have not yet been fully fleshed out or encountered theoretically, or in the eyes of international law, through a comparative and analytical lens. Additionally, this framework is

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<sup>9</sup> For example, the right to Non-discrimination (Art. 2 of the UDHR), Privacy (Art. 12 of the UDHR), and Freedom of Expression (Art. 19 of UDHR) – which will be addressed and incorporated in the following chapters. UNGA, Universal Declaration of Human Rights, 10 December 1948, 217 A (III), Available at: <http://www.refworld.org/docid/3ae6b3712c.html>, (Accessed on 12 May 2018).



established from requests, based on a pre-existing literature review, for more interdisciplinary and ethical approaches to the formulation of new technologies and algorithms and the forthcoming issues that surround them.<sup>10</sup> However, it is important to note that the issues that are brought to light in this thesis cannot be solved in one fell swoop.

The overall goal of this work is to give a more nuanced, holistic and ethically based analysis of the current state of affairs of technological access and meaningful participation – using algorithm and big data as primary examples of how digitalization affects the world as we know it. It is important to note that since the author is not a computer scientist there will be very little included in this thesis in regards to coding and the mathematical/computer science aspects of algorithmic accountability. Rather, as previously stated, this thesis aims to provide a critical perspective/ethical investigation of the overarching narratives surrounding access to new technologies, and the ways technological advancements and legislations can affect minority groups. Ultimately, the locus of ‘bias’ and responsibility needs to be shifted in order to give way to a reworked epistemological cognizance, which ought to be considered more thoroughly in the creations and applications of algorithms and beyond.

Lastly, it must be explicitly stated that the goal of this thesis is by no means meant to demonize the progress or undercut the benefits of technology in regard to its undeniable contributions to the standard of living for many people on the global scale. However, this work will establish that there must be more willingness to address the systemic, structural, and discriminatory accessibility issues that pervade application of new technologies. As we will see, legislation and the understanding of technological impacts cannot keep up with the progress being made. There must be a staunch paradigm shift away from the “move fast and break things”<sup>11</sup> mantra to which Mark Zuckerberg of Facebook and Silicon Valley once ascribed. The

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<sup>10</sup> See: Jason Furman, ‘Is This Time Different? The Opportunities and Challenges of Artificial Intelligence’, Remarks at: *AI Now: The Social and Economic Implications of Artificial Intelligence Technologies in the Near Term*, (NYU: New York, 7 July 2016),

Available at: [https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160707\\_cea\\_ai\\_furman.pdf](https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160707_cea_ai_furman.pdf), (Accessed on June 10 2018).

Can E. Mutlu, ‘Of Algorithms, Data and Ethics: A Response to Andrew Bennett’, *Millennium: Journal of International Studies*, Vol.43, Iss. 3, (2015).

Samuel Freed, *Role for Introspection in AI Research*, (Brighton: University of Sussex, 2016).

<sup>11</sup> “Move fast, break things,” was a motto famously used by Zuckerberg at the inception of Facebook. By 2014, this motto rebranded as Facebook ‘matured’ to “Move fast, with Stable Infrastructure.”

Ben Tarnoff & Moira Weigel, ‘Why Silicon Valley can’t fix itself’, *The Guardian*, (3 May 2018),

Available at: <https://www.theguardian.com/news/2018/may/03/why-silicon-valley-cant-fix-itself-tech-humanism>, (Accessed on June 10 2018).

establishment of awareness coupled with ethical codes of conduct within the realm of programming, as well as technological progress on the whole, is implicit for the future of both humanity and their inalienable human rights.

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However, given the current state of affairs in regards to the Facebook data breach scandal, not to mention previous privacy issues, the stability of Facebook's infrastructure is questionable.

## CHAPTER ONE

### 1.1 ACCESS TO TECHNOLOGY AS A HUMAN RIGHT

To begin to understand the intricacies of algorithm and big data's effects on minority groups and the socio-political landscape, we must first take a brief look at some the international policies regarding the distribution of technologies in our globalized world. The very concept of technology, or access to it, on the broadest scale, is something that is never explicitly mentioned in the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR), International Covenant on Civil and Political Rights (ICCPR) or 1948 Universal Declaration of Human Rights (UDHR) – but linkages between fundamental human rights and technological access can be alluded to in a variety of ways.<sup>12</sup> Conceptually, 'Technology' can be intrinsically interwoven into many methods of realization of human rights. It could be understood as a 'multiplier'<sup>13</sup>, or in some cases, its absence can be conducive to a violation of Article 19 of the UDHR – 'Freedom of Expression'. This poses an interesting question as to the intangible nature of whether 'access to technology' would be a Civil & Political Right or an Economic, Social and Cultural one – or if it can really be considered a right at all.<sup>14</sup> Ultimately, problems surrounding access to technologies, especially their disparate transfer, particularly between the Global North (Western European Nations, North America, developed parts of Asia, Australia/New Zealand) and the Global South (Africa, South America, The Middle East and the developing nations of

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<sup>12</sup> For example, in regards to access to pharmaceutical products, thus reinforcing the inalienable "right to health" – which was codified into the language of Human Rights in Art. 12 of ICESCR.

UN Committee on Economic, Social and Cultural Rights (CESCR), *General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)*, 11 August 2000, E/C.12/2000/4, Available at: <http://www.refworld.org/docid/4538838d0.html>, (accessed 19 June 2018).

<sup>13</sup> While there is little work done to show that technology is explicitly a 'multiplier' of rights, using technological advancements in certain contexts could arguably result in more fulfilling educational processes and "education operates as a multiplier, enhancing the enjoyment of all individual rights and freedoms where the right to education is effectively guaranteed, while depriving people of the enjoyment of many rights and freedoms where the right to education is denied or violated."

Katarina Tomaševski, 'Human rights obligations: making education available, accessible, acceptable and adaptable', *Right to education primers III*, (Gothenburg: Novum Grafiska, 2001), P. 10.

<sup>14</sup> Vint Cerf, purported 'father of the internet' stated that, "technology is an enabler of rights, not a right itself." See: Iain Thomson, 'Vint Cerf, "The Internet is not a Human Right"', *The Register*, (5 Jan 2012), Available at: [https://www.theregister.co.uk/2012/01/05/vint\\_cerf\\_internet\\_not\\_right/](https://www.theregister.co.uk/2012/01/05/vint_cerf_internet_not_right/), (Accessed on June 9 2018).

While in other cases it can be argued that technology can be used as a "strategic tool" for utilizing economic, social and cultural rights

See: Dimitrios Buhalis, 'Information technology as a strategic tool for economic, social, cultural and environmental benefits enhancement of tourism at destination regions', *Progress in Tourism and Hospitality Research*, Vol. 3, Iss. 1, (1997), P. 71–93.

Asia), and the ways in which they are accessible or instrumentalized can definitively be construed as a human rights issue and is wrought with complexities. Thus, one of the aims of this thesis, will be to flesh out the ways in which algorithms and big data can be used to illustrate the ever-growing importance of accessible technologies and interaction with human rights.

The World Health Organizations (WHO) Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)<sup>15</sup> is a prime example of international legislation that regulates the exchange of tech, between the Global North and the Global South. This agreement focuses primarily on the legality of Intellectual Property and Patent law. In reductionist terms, TRIPS disproportionately affects those living in less ‘developed’ and less economically viable countries<sup>16</sup> - and often, these affected countries have sordid ties to colonial history.<sup>17</sup> Algorithms can be understood as a sort of ‘anti-hero’ to these principles. In both international and many national policies, they manage to maintain a sort of sovereignty due to their mathematical nature. Legally, patents on algorithms are generally frowned upon, based on the conclusion that they are “the basic tools of scientific and technological work.”<sup>18</sup> The argument is that the mathematics involved in algorithm should not be protected under IP, since they can be deemed to be a ‘law of nature’, or a natural phenomenon<sup>19</sup> – but, the *application* of algorithms are beginning to fall into

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<sup>15</sup> Codified in 1995, as an ‘updated’ version of the 1883 Paris Convention.

<sup>16</sup> As Anand Grover, the Special Rapporteur on the Right to Health argued in his 2009 report – “it ignores the diversity of nations’ needs” – and no longer explicitly allowed states to strategically exclude certain technological products (like pharmaceuticals) from patent laws due to socio-economic necessity.

UNGA, *Report of the Special Rapporteur on the Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health*, Anand Grover, 31 March 2009, A/HRC/11/12, Available at: <http://www.refworld.org/docid/49faf7652.html>, (Accessed on 19 June 2018), P. 10.

However, caveats in TRIPS legislation exist, primarily the formulation of ‘flexibilities’ which allows many low-income countries along with LDCs (Least Developed Countries) – but even this is only marginally useful for those countries that lack the resources to take advantage of such flexibilities (like transition periods, for example.)

*TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights*, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994), Art. 66(1).

<sup>17</sup> See: Chikosa Banda, ‘Intellectual Property and Access to Essential Pharmaceuticals: Recent Law and Policy Reforms in the Southern Africa Development Community Region’, *Maryland Journal of International Law*, Vol. 31, Iss. 1, (2016), P. 70.

Danwood M. Chirwa, Access to Medicines and Health Care in Sub-Saharan Africa: A Historical Perspective, *Maryland Journal of International Law*, Vol. 31, Iss. 1, (2016), P.23-27.

<sup>18</sup> See: *Gottschalk v. Benson*, 409 U.S. 63,72 (1972) – in which the court claimed that a patent on this specific algorithm would, in practice, bind a mathematical formula within the scope of Intellectual Property Law.

<sup>19</sup> This is even though the patentability of algorithm is dependent on national laws, which differ vastly from one another. For example, the patentability of algorithms within the United States is more likely to succeed, than in EU member states. The very nature of patentability of algorithm is currently in flux. A further discussion of current policies regarding algorithms, data and the EU-wide applicability of the General Data Protection Regulation (GDPR) that was just brought to fruition is forthcoming.

patentability.<sup>20</sup> The lack of clarity surrounding algorithms can result in their being bound in non-disclosure and ‘trade-secrets’ caveats<sup>21</sup> – resulting in the staunch opposition to transparency at the hands of companies and governments,<sup>22</sup> which can invariably lead to immense effects on those who are subject to new algorithmic schema.

A more recent move at the international level, regarding access to new technologies, was the United Nations resolution<sup>23</sup> that access to the Internet should, as of July 2016, be considered a basic human right.<sup>24</sup> From this affirmation, we can begin to grasp just how transitory the nature of accessible tech can be in legal frameworks. The resolution was a direct response to the growing authoritarian climate in the digital age,<sup>25</sup> and how these factors affect disenfranchised populations’ access to the civil/political right to freedom of expression. However, the manifestation of this resolution is particularly interesting as it is multi-faceted in legal terms by straddling the binary between ICCPR and ICESCR. While freedom of expression can be neatly boxed into the category of civil and political rights, there was also a call to ensure that Internet access was *affordable*<sup>26</sup> – thus, shifting the focus to socio-economic ability. This shift to the realm of Economic, Social and Cultural Rights also foreshadows justiciability and affordability

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<sup>20</sup> Patent US4405829 – ‘Cryptographic communications system and method’ is an example of an algorithm that was patented once the abstract mathematical idea/equation was embedded and implemented within a computer system. Available at: <https://patents.google.com/patent/US4405829>, (Accessed on May 1 2018).

<sup>21</sup> Taylor R. Moore, ‘Trade Secrets and Algorithms as Barriers to Social Justice’, Centre for Democracy & Technology, (August 2017), Available at: <https://cdt.org/files/2017/08/2017-07-31-Trade-Secret-Algorithms-as-Barriers-to-Social-Justice.pdf>, (Accessed on May 12 2018), Abstract.

<sup>22</sup> See: Robert Brauneis & Ellen P. Goodman, ‘Algorithmic Transparency for the Smart City’, *Yale Journal of Law and Technology*, Vol. 20, Iss. 103, (2018), P. 137-150.

<sup>23</sup> UNGA, *Resolution on the promotion, protection and enjoyment of human rights on the Internet*, 27 June 2016, A/HRC/32/L.20, Available at: <https://documents-dds-ny.un.org/doc/UNDOC/LTD/G16/131/89/PDF/G1613189.pdf?OpenElement>, (Accessed on May 12 2018).

<sup>24</sup> This resolution could be seen as a corollary to the “Internet for Development” Policy which was “formulated within the framework of the United Nations system, and transferred to Africa by UNESCO, the International Telecommunications Union (ITU) and the United Nations Development Programme (UNDP).”

Lyombe Eko, ‘Putting African Accents in United Nations Internet for Development Policies’, *Journal of Information Technology & Politics*, Vol. 10, Iss 3, (2013), Abstract.

Though this too was perceived by some to be another form of “Eurocentric diffusionism...modernization aimed at transplanting Western institutions into non-Western societies.”

Jeremiah Dibia, *Development and diffusionism*, (New York: Palgrave, 2013), p.3.

<sup>25</sup> A response to violations of Freedom of Expression, or Article 19 of the UDHR in which the governments of India, Pakistan, China and Turkey (to name a few) were exposed of intentionally limited access to the internet for their populous. More information at: <https://www.accessnow.org/keepit/>

<sup>26</sup> “The UN Broadband Commission currently defines broadband as affordable if an entry-level (500MB) data plan is available for less than 5% of average monthly income (i.e., GNI per capita). However, this definition of affordability does not account for poverty and income inequality.”

See: Alliance for Affordable Internet (A4AI), *Redefining Broadband Affordability: Adopting a ‘1 for 2’ Target to Enable Universal, Affordable Access*, Available at: [http://1e8q3q16vyc81g8l3h3md6q5f5e.wpengine.netdna-cdn.com/wp-content/uploads/2016/09/Redefining-Affordability\\_1-for-2-Target.pdf](http://1e8q3q16vyc81g8l3h3md6q5f5e.wpengine.netdna-cdn.com/wp-content/uploads/2016/09/Redefining-Affordability_1-for-2-Target.pdf), (Accessed on June 19 2018).

issues, which is a common argument against remedies to the human rights violations that unfortunately fall into the ‘ESC’ category.<sup>27</sup> This sort of ‘double-life’ of the Internet, especially in the face of international policy, can too be applied to other forms of new technology, particularly in regards to the ethical use of data and algorithms.

Another increasingly relevant, exceptionally new, and legally binding instrument was European Parliaments 2016 adoption of the General Data Protection Regulation (GDPR) which has only come to fruition across the EU in May 2018. Through this new legislation the tapestry that is made up of: algorithms (or as referred to in this document as “automated decision-making”<sup>28</sup>), big data and the Internet as we know it, is inextricably woven. While this Regulation can be gleaned as a refurbished or ‘modernized’ version of the 1995 Data Protection Directive (DPD) – it is arguably much more serious and aimed to remedy the burdens and issues that have arisen in the wake of the “Internet of things.”<sup>29</sup> However, the updated GDPR is not only a product of a more sophisticated understanding of the digital age in which we live – in terms of updated technological prowess, but also attempts to take the reach of new technologies and big data into account. In legal terms, the GDPR is legally binding on all member states once it fully comes into action, while the DPD was “subject to national interpretation, and was only ever implemented through subsequent laws passed within individual states.”<sup>30</sup>

The main contributions of GDPR in regards to the legal framework presiding over the digital world are as follows: increased extraterritorial scope – where it is made explicitly clear that it applies to any and all companies that wish to deal with personal data of anyone who resides in the EU, regardless of the companies’ location,<sup>31</sup> penalties - organizations who breach

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<sup>27</sup> Michael J. Dennis & David P. Stewart, ‘Justiciability of Economic, Social and Cultural Rights: Should there be an International Complaints Mechanism to Adjudicate the Rights to Food, Water, Housing and Health?’, *American Journal of International Law*, Vol. 98, Iss. 3, (2004), P. 462-472.

<sup>28</sup> *EU General Data Protection Regulation (GDPR)*: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ 2016 L 119/1, Art. 13, Art. 22.

<sup>29</sup> “The Internet of Things (IoT) consists of networks of sensors attached to objects and communications devices, providing data that can be analyzed and used to initiate automated actions. The attributes of this world of things may be characterized by low energy consumption, auto configuration, embeddable objects, etc. The data also generates vital intelligence for planning, management, policy, and decision-making.”

David Lake, Ammar Rayes, & Monique Morrow, Cisco Systems, ‘The Internet of Things’, *The Internet Protocol Journal*, Vol. 15, No. 3, (2012).

<sup>30</sup> Seth Flaxman & Bryce Goodman, ‘European Union regulations on algorithmic decision-making and a “right to explanation”’, *AI Magazine*, Vol. 38, Iss. 3, (2017), p.2.

<sup>31</sup> *EU General Data Protection Regulation (GDPR)*: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and

the GDPR can be fined up to four percent global turn over, or twenty million Euros (whichever is higher);<sup>32</sup> and intelligible consent – meaning that consent forms must be understandable to the general public, and no longer littered with legal and technical terms.<sup>33</sup> Furthermore, it introduces a slew of data subject friendly rights like, *right to access*,<sup>34</sup> breach notification,<sup>35</sup> right to be forgotten,<sup>36</sup> data portability,<sup>37</sup> privacy by design,<sup>38</sup> etc. Due to the fact that it's early in the GDPR's inception it has not yet used its legally binding power in any meaningful way and its reach, scope and capacity has yet to be determined. However, it is irrefutable that we will reach a new horizon of technological and algorithmic accountability in the not-so-distant future.<sup>39</sup>

## 1.2 “THE FUTURE HAS ARRIVED, IT’S JUST NOT EVENLY DISTRIBUTED YET.”<sup>40</sup>

As we have seen, the current state of technological transfer or data transfer/responsibility regulations on the international level leaves a lot to be desired, especially in regards to new and emerging tech. However, we must acknowledge that this lack of access to technologies and extra-territorial responsibility does not exist within a solely legal vacuum; it needs to be historically and ideologically situated. Further, the very emphasis that we put on the importance of the World Wide Web, and the benefits of living in this constantly connected way, are remarkably biased. Why are the western notions of knowledge, as tied to the Internet,<sup>41</sup> important for those who have a different set of priorities, and who is this sort of emphasis benefitting? The state of affairs we are currently situated within is causally linked to colonial history and can also be understood as a reflection of hundreds of years of Eurocentric and

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on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ 2016 L 119/1.

See: Recitals (115, 124, 168, 169), Art. 13, Art. 14.

<sup>32</sup> Ibid, Art. 83.

<sup>33</sup> Ibid, Recitals (32-44), Art. 7, Art. 12.

<sup>34</sup> Ie. Transparency and accountability for use of personal data. Ibid, Art. 12.

<sup>35</sup> Ibid, Art. 33.

<sup>36</sup> Ibid, Art. 17.

<sup>37</sup> Ibid, Art. 20.

<sup>38</sup> Ibid, Art. 23.

<sup>39</sup> A discussion on the idea of an ‘international’ application of the GDPR will take place in the third chapter of this thesis. Though in his April testimony to Congress Facebook CEO Mark Zuckerberg of Facebook pledged to adhere to it on a global, there have already been moves against this promise.

<sup>40</sup> A Maxim often attributed to William Gibson.

<sup>41</sup> Especially since much of the information we glean from the Internet is not necessarily credible, or fact checked. See: Soroush Vosoughi, Deb Roy & Sinan Aral, ‘The spread of true and false news online’, *Science*, Vol. 359, Iss. 6380, (9 March 2018), P. 1146-1151.

culturally hegemonic undertones that pervade our neo-liberalist world. New technologies, the Internet and use of algorithms are not inherently bad; but the means, the ends, and the intents in which they are sometimes used can be understood as a reflection of modern imperialistic tendencies.

In regards to Internet access alone, “about 75 percent of the offline population is concentrated in 20 countries, and is disproportionately rural, low income, elderly, illiterate and female.”<sup>42</sup> Of the countries that fall into the categories with the highest barriers to both Internet access and access to tech, most are found in Africa or Asian and are considered to be the ‘least developed’ in manifold ways.<sup>43</sup> Not only do many of these places lack the infrastructure and resources to be able to set up technologies that would lead to Internet access, they also do not have the same educational or epistemic resources that are widely available to the ‘educated elite’ in the Global North.<sup>44</sup> To add insult to injury, those who are most vulnerable (women, elderly, disabled, impoverished, etc.) within these already vulnerable groups, have a compounded inability to access technologies that may be invaluable to their flourishing; or at least give them a stronger ability to harness their own human rights. Those whose oppression is the greatest are often those who are least protected under the scope of the international policy of new technologies. Furthermore, the manifestations of western altruism can, too, sometimes fall into the typical tropes of the white-saviour complex, focusing on what outsiders deem to be the root problem, without contextualizing their own epistemic imperialism – with commensurable results.

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<sup>42</sup> McKinsey & Company, *Offline and falling behind: Barriers to Internet Adoption*, (October 2014), Available at: <https://www.mckinsey.com/industries/high-tech/our-insights/offline-and-falling-behind-barriers-to-internet-adoption>, (Accessed on 20 June 2018), P. 2.

<sup>43</sup> Ibid, p. 6.

<sup>44</sup> Beyond these concepts of social and cultural capital, the digital divide can be most characterized by the issues of infrastructure in the ‘developing world.’ When looking at the submarine cable map, we can see how the routes are reflections of colonial trade routes.

See: Nicole Starosielski, *The Undersea Network*, (North Carolina: Duke University Press, 2015).

Furthermore, satellite access and mobile data can be seen as a cornerstone for internet accessibility for many, on the global scale – thus, it should come as no surprise that those who are of lower socio-economic standing have reduced access.

See: McKinsey & Company, *Offline and falling behind: Barriers to Internet Adoption*, (October 2014).

Lastly, due to reduced infrastructure and access, Facebook, in itself, is the Internet for some.

See: Nanjira Sambuli, ‘Challenges and opportunities for advancing Internet access in developing countries while upholding net neutrality’, *Journal of Cyber Policy*, Vol. 1, Iss. 1, (2016).

Leo Mirani, ‘Millions of Facebook Users Have No Idea They’re Using the Internet’, *Quartz*, (9 February 2015), Available at: <https://qz.com/333313/millions-of-facebook-users-have-no-idea-theyre-using-the-internet/>, (Accessed on 22 June 2018).



### 1.2.2 THE DIGITAL DIVIDE AS NEO-COLONIALISM, AND THE IMPERIALISM OF THE INTERNET

The lack of access to the internet as well as lesser access to technologies not only affects those on the ground in technologically less-developed nations but it also affects how we, from the Global North, perceive them. The concept of ‘knowledge as power,’<sup>45</sup> and the perceptions of who is deemed powerful, or knowledgeable enough to verify ‘truths,’ can be easily applied to the Internet as an epistemic tool. Additionally, the implied importance of Internet access, the knowledge that can be gained via connectivity, buttressed by the convenient truths of those who lack such access, further reinforce Hegelian notions of European modernity.<sup>46</sup> How can we justifiably believe that the Internet can truly be ‘universal’ or ‘world-wide’ if it is restrictive in so many ways; from access and socio-economics to education and linguistics? These barriers, to some, are normalized, or deemed as primordial. Even though English does not monopolize as much space as the dominant language of Internet-users anymore,<sup>47</sup> the representation of texts still disproportionately favours the English speaker.<sup>48</sup> Thus, even in regards to the digital world, the voice of the subaltern is drowned out.<sup>49</sup>

This type of cognitive dissonance can be illustrated with Facebook and Mark Zuckerberg’s failure to fully comprehend both the scope and the need for Internet access in

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<sup>45</sup> Michel Foucault, *Knowledge/power: Selected interviews and other writings, 1972-1977*, (New York: Pantheon, 1980).

<sup>46</sup> Enrique Dussel, ‘Eurocentrism and Modernity (Introduction to the Frankfurt Lectures)’, *The Postmodernism Debate in Latin America*, John Beverley, Michael Aronna, Jose Oviedo, eds., (North Carolina: Duke University Press, 1995), P. 65-76.

<sup>47</sup> Since 2000, Internet users from diverging linguistic groups have been rapidly growing – Chinese speakers growth has been 2,390.0%, while Arabic speakers have increased by 8,616%. However, these groups only make up 19.4% and 5.3% of the world total of Internet users, respectively, while English speakers still make up the largest percentage (25.3%).

See: Internet World Stats, Available at: <https://www.internetworldstats.com/stats7.htm>, (Accessed on April 25 2018).

<sup>48</sup>“For instance, the whole continent of Africa contains only about 2.6% of the world’s geo-tagged Wikipedia articles despite having 14% of the world’s population and 20% of the world’s land.”

Jacob Poushter, *Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies*, Pew Research Center, (22 February 2016), Available at: <http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/>, (Accessed on 20 June 2018), Chapter 1.

Additionally, "The famous engine [Google] that recognises 30 European languages recognises only one African language and no indigenous American or Pacific languages."

Daniel Prado, ‘Language Presence in the Real World and Cyberspace’, *NET.LANG: Towards the Multilingual Cyberspace*, Maaya Network, (2012), p.40.

<sup>49</sup> See: Gayatri Chakravorty Spivak, *Can the Subaltern Speak? Reflections on the History of an Idea*, (New York: Columbia University Press, 2010).

India, which eventually culminated in the rejection of the Free Basics<sup>50</sup> program. While the project was promoted under the guise of a philanthropic venture to better connect those who had been constantly and consistently marginalized – the delivery and intent was wholly misdirected.<sup>51</sup> Free Basics was marketed as a tool to target those who were deemed poor and un(der)educated – whose lives were lived outside the benevolent reach of the World Wide Web. In February 2014, Zuckerberg, as a keynote speaker at Barcelona’s Mobile World Conference paraphrased the latest Deloitte report on the ‘Value of Connectivity,’<sup>52</sup> stating that, “if you increase the number of people in emerging markets that have access to Internet, you could easily create more than 100 million jobs and bring that many people or more out of poverty.”<sup>53</sup> While the report, and this statement both seem to be intuitively credible, it is important to note that this particular Deloitte study was specifically created for Facebook, with information from Facebook and to be used by Facebook.<sup>54</sup>

Rather than promoting unadulterated Internet access, Free Basics was much more of a venture for capital<sup>55</sup> than virtue. Not only did the accessible sites from the Free Basics program *exclusively* allow connectivity to certain, preordained websites chosen by the Facebook team – including Facebook itself – but most of the applications and content was only available in

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<sup>50</sup> “Free Basics by Facebook provides people with access to useful services on their mobile phones in markets where internet access may be less affordable. The websites are available for free without data charges, and include content on things like news, employment, health, education and local information.”

See: Internet.org by Facebook, Available at: <https://info.internet.org/en/story/free-basics-from-internet-org/>, (Accessed on 20 June 2018).

<sup>51</sup> However, there remains an interesting critique on this opinion, which comes to the conclusion that: “it is fashionable for many populist writers and ideologically committed activists to criticize and denounce every action of private companies and extol state capitalism... despite humongous scams perpetrated by politicians and civil servants.”

See: Hanuman Chowdary Tripuraneni, ‘The Free Basics (of Facebook) debate in India’, *Emerald Group Publishing*, Vol. 18, Iss. 3, (2016), P. 3.

<sup>52</sup> See: Deloitte, *Value of connectivity: economic and social benefits of expanding Internet access*, (2014), Available at: <https://www2.deloitte.com/content/dam/Deloitte/br/Documents/technology-media-telecommunications/ValorConectividad.pdf>, (Accessed on 9 June 2018).

<sup>53</sup> Mark Zuckerberg, ‘Mark Zuckerberg at the Mobile World Congress 2014 (Full Video)’, *Youtube video*, 6:40, (24 February 2014), Available at: <https://www.youtube.com/watch?v=VHwkHZpXqWc>, (Accessed on 1 May 2018).

<sup>54</sup> Deloitte, *Value of connectivity: economic and social benefits of expanding Internet access*, (2014), P. Contents and Forward.

<sup>55</sup> India was deemed as a ‘high opportunity’ country, as it has a high literate population that lives outside the scope of Facebook. “According to a Facebook executive, the company’s internal analysis projected that more than 30% of the new customers it hoped to add worldwide by 2020 would come from India.”

Rahul Bhatia, ‘The inside story of Facebook’s biggest setback’, *The Guardian*, (12 May 2016), Available at: <https://www.theguardian.com/technology/2016/may/12/facebook-free-basics-india-zuckerberg>, (Accessed on 1 May 2018).

English.<sup>56</sup> These types of tactics were eventually deemed to be in stark opposition to basic tenets of net neutrality.<sup>57</sup> Aside from the aforementioned conceptual issues of epistemic imperialism, the reach of the short-lived Free Basics was negligible. A4AI's 2016 report stated that only about 12% of all 'Zero-Rated'<sup>58</sup> users started using the Internet with these types of programs<sup>59</sup>. In fact, many of those who used Free Basics "typically combine these mobile data services to suit their connectivity needs; zero-rated plan users are more likely than any other type of user to combine their plan with other options."<sup>60</sup>

Thus, the fate of Free Basics mimics common tropes and ideological pitfalls that can be associated with the biased, imperialist and Western gaze. Aside from the obvious capitalistic undertones pervading the entire venture, it hinged upon a fundamentally flawed understanding inherent to colonial perspectives, arguably rendering Free Basics a modern 'civilizing mission.' Particularly this can be seen in regard to the notion that the West's scientific knowledge can be easily disseminated upon another 'less developed' nation, without being tailored by or towards local knowledges in any meaningful way. Further, this example can be seen as a form of technological imperialism, in the sense that the Free Basics platform widely ignored that there were, in fact, people already using online resources and this was not some sort of entirely unconnected, and empty land for the taking or to 'manifest destiny.'<sup>61</sup> Finally, the failure of Free Basics in this instance can be linked to the underlying issues that will be discussed throughout

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<sup>56</sup> Global Voices Advox, 'Free Basics in Real life: Six case studies on Facebook's Internet "On Ramp" initiative from Africa, Asia and Latin America', (27 July 2017), Available at: [https://advox.globalvoices.org/wp-content/uploads/2017/08/FreeBasicsinRealLife\\_FINALJuly27.pdf](https://advox.globalvoices.org/wp-content/uploads/2017/08/FreeBasicsinRealLife_FINALJuly27.pdf), (Accessed on 20 June 2018).

<sup>57</sup> "Net neutrality usually means that broadband service providers charge consumers only once for Internet access, do not favour one content provider over another, and do not charge content providers for sending information over broadband lines to end users."

Robert Hahn & Scott Wallsten, 'The economics of net neutrality', *The Economists' Voice*, Vol. 3, Iss. 6, P. 1.

The debate of Net Neutrality is one that been ongoing with the ever-growing reliance on Internet-services, but was reinvigorated once again within the context the recent repeal of net neutrality in the United States. It is of interest within the Human Rights schema for many reasons but the most obvious being that the very concept of it is inherently tied to issues of access to information based on economic status.

<sup>58</sup> Zero-rated refers to programs like and including Free Basics, in which are "services that make a specific set of content, websites, or applications available at no additional cost to the user."

Alliance for Affordable Internet, *Impacts of Emerging Mobile Data Services in Developing Countries*, (June 2016), Available at: [http://1e8q3q16vyc81g8l3h3md6q5f5e.wpengine.netdna-cdn.com/wp-content/uploads/2016/05/MeasuringImpactsofMobileDataServices\\_ResearchBrief2.pdf](http://1e8q3q16vyc81g8l3h3md6q5f5e.wpengine.netdna-cdn.com/wp-content/uploads/2016/05/MeasuringImpactsofMobileDataServices_ResearchBrief2.pdf), (Accessed on 1 June 2018), P. 2.

<sup>59</sup> Ibid, p. 3.

<sup>60</sup> Ibid.

<sup>61</sup> A phrase referring to "the philosophy of territorial expansions" during the late 19<sup>th</sup> century in the Americas.

See: Julius W. Pratt, The Origin of "Manifest Destiny", *The American Historical Review*, Vol. 21, No. 4, (1927), P. 795-798.

this thesis, from a variety of angles; technology in itself is not necessarily biased; rather, the way it is adopted, adapted and integrated is, and is reflective of institutionalized power dynamics.

### 1.3 ALGORITHMIC INJUSTICE

As we can see, access to new technologies, and more specifically the Internet, is encapsulated within the pre-existing societal norms; correlations between privilege and socio-economic standing can be found at both the international,<sup>62</sup> as well as national,<sup>63</sup> levels. This is problematic as technological and scientific progress is commonly conceived to be unbiased, or coming from an ‘objective’ position, and not contingent upon *who* came to such discoveries/conclusions, with *what resources*, and for *what reasons*. Algorithms are no different. However, the common narrative surrounding algorithmic integrity was, and continues to be even more polarizing and convoluted. With the massive progress made in the field of Artificial Intelligence, particularly in machine learning, and deep learning, coupled with the mining and utilization of huge swaths of data, algorithms were believed to be a means of sidestepping stereotypical human biases. However this presupposition has continuously been shown as false.<sup>64</sup>

As of late, even in the eye of contemporary mainstream media, we have come face-to-face with the ugly, biased, and all too human discriminatory prioritizing, which has been reflected in algorithmic decision-making. While there has been a lot of scholarly research concerning responsibility and accountability for algorithms,<sup>65</sup> especially in regards to self-driving cars,<sup>66</sup> (ie. how could we focus the blame of a vehicular accident if a non-human actor was driving) – there seems to be little ethically based focus on accountability of inherently biased, societally/individually informed algorithmic decision making on a grander scale.<sup>67</sup> Much

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<sup>62</sup> McKinsey & Company, *Offline and falling behind: Barriers to Internet Adoption*, (October 2014).

<sup>63</sup> S. Derek Turner, *Digital Denied: The Impact of Systemic Racial Discrimination on Home-Internet Adoption*, (December 2016), Available at: <https://www.freepress.net/news/press-releases/digital-denied-free-press-report-exposes-impact-systemic-racism-internet> (Accessed on May 2 2018). P. 4-17.

<sup>64</sup> Betsy Anne Williams, Cahterina F. Brooks & Yotam Shmargad, ‘How Algorithms Discriminate Based on Data they Lack: Challenges, Solutions and Policy Implications’, *Journal of Information Policy*, Vol. 8, (2018), P. 78-115.

<sup>65</sup> Patrick Allo, Luciano Floridi, Brent Daniel Mittelstadt, Mariarosaria Taddeo, & Sandra Wachter, ‘The ethics of algorithms: Mapping the debate’, *Big Data & Society*, (July-December 2016), P.1-21.

<sup>66</sup> David C. Vladeck, ‘Machines Without Principles: Liability Rules and Artificial Intelligence’, *Washington Law Review*, Vol. 89, Iss. 117, (March 2014), P. 117-150.

<sup>67</sup> Many news articles that reference bias in algorithms simply state that the data samples used or the creators of such algorithms, haphazardly included their own ingrained biases into the supposedly ‘a-political’ and unbiased code.

like the aforementioned examples, such as Free Basics or even TRIPS – algorithms also, reinforce hegemonic ideals, and can be used as a scapegoat in which to assign blame. Discrimination and bias alike may not entirely depend on the medium,<sup>68</sup> rather, they can be hinged upon the systemic ideological perspectives of those who have the ability, and ultimately the resources, to create cutting-edge innovations, as well as those institutions that fund and support such ventures.

Another important facet of algorithmic accountability is structured around the data samples that are used as normative standards, or generalizations in which algorithms can ‘learn.’ However the means by which data is collected (and put to use) from the populace also remain a largely untouched issue in academia.<sup>69</sup> This will undoubtedly begin to change given the current state of emergency surrounding data breaches and privacy issues that have been breaking headlines consistently over the past few years<sup>70</sup> along with the recent enactment of the GDPR. Further, the very idea of using huge swaths of data to make ‘informed’ automated decisions relies on generalizations sourced from negligibly mined data. This use of generalized data is also problematic as it normalizes inherited biases and does not account for an intersectional<sup>71</sup> and more nuanced or moralized approach to decision making.

Beyond the scope of the up-and-coming issues of collective privacy in the Western and tech-savvy world, there too exists another, less talked about issue to do with ‘big data’: consent and privacy. This refers to the use of those living in the very ‘off-the-grid’ and ‘disconnected’ landscape of the Global South’s data, largely to the benefit of companies based in and working

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They do not argue that there is a systematic flaw in the globalized world, or call for a ‘decolonization’ of technological/scientific landscape.

<sup>68</sup> This is not meant to explicitly argue against Marshal McLuhan’s notion of, “the medium is the message” – rather that the existence of discrimination and bias prevails even in spite of legal frameworks, which explicitly denounce it. Marshall McLuhan, *Understanding Media: The Extensions of Man*, (New York: McGraw Hill, 1964).

<sup>69</sup> Though an interesting critique of this can be found in: Can E. Mutlu, ‘Of Algorithms, Data and Ethics: A response to Andrew Bennett’, (2015).

<sup>70</sup> Most recently being those surrounding Facebook and Google, and even the more blatantly problematic breach in Grindr users HIV status.

Owen Jones, ‘Grindr’s HIV data-sharing has betrayed the LBGQT world’, *The Guardian*, (3 April 2018), Available at: <https://www.theguardian.com/news/shortcuts/2018/apr/03/grindr-hiv-data-sharing-lgbtq-gay-dating-app-information-third-parties>, (Accessed on 20 June 2018).

<sup>71</sup> Intersectionality is a term that was first coined by Kimberle Crenshaw, in:

Kimberle Crenshaw, ‘Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics’, *University of Chicago Legal Forum*, Vol. 1989, Iss. 1, (1989), Article 8.

Intersectionality generally refers to compounded and intersecting forms of oppression of marginalized groups – arguing that forms of oppression are multifaceted and cannot be compartmentalized.

for the Global North. Data can now be understood as a commodity, to be bought and sold, without benefiting those from which it was taken. There are multiple examples stemming from Information Communication Technologies for Development (ICT4D) that fail in regards to ethical functionality and harvesting of big data. Examples include, but are not restricted to the 2014 Ebola crisis in West Africa, and the unethical use of big data (telecommunication data, specifically call detail records (CDRs)) which ultimately allowed for a sort of ‘surveillance state’ to be consolidated, and put the lives of activists at risk.<sup>72</sup>

While it is easy to assess the problems that surround algorithmic integrity and globalization of data from the vantage point of technological pitfalls, we must ask ourselves harder questions. How do we circumvent the promulgation of ‘Western’ interests above all else, particularly in the face of data-colonialism and its ingrained prejudices? Is eliminating bias the end goal of algorithms, or are we just allowing technological advancements to further displace the blame of the moral drawbacks which are ingrained in the world as we know it? If we truly wished to put an end to bias based upon normalized belief systems then we must include the beliefs of others, which do not necessarily fit into this cookie-cutter mold. Therefore, in the following chapter, we will discuss ways in which big data and algorithms are used to construct our identities, digitally and in the ‘real world,’ and what this could mean for minority groups.

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<sup>72</sup> See: Sean M. McDonald, ‘Ebola: A Big Data Disaster Privacy, Property, and the Law of Disaster Experimentation’, *The Centre for Internet and Society*, (2016), Available at: <http://cis-india.org/papers/ebola-a-big-data-disaster>, (Accessed 13 June 2018).

## CHAPTER TWO

### 2.1 THE DIGITAL GAZE

The issues surrounding algorithmic accountability are unfolding as we speak. Currently, the most common example that can be used to illustrate algorithmic bias can be found under the auspices of predictive policing. While this concept has been explored through a philosophical and speculative science fiction lens in the public sphere (most notably in the 2002 film *Minority Report*) this type of policing has actually become a reality. However, as we begin to unpack the effects of predictive policing outside of the confines of fiction we can see that the consequences are much more politicized and engrained within the status quo and the systematic racism that pervades society, than the existential, ethical and theoretical questions that arose from the film. The example of predictive policing exacerbates the intertwined nature of discrimination, power and privacy in the digital age.

In order to integrate these issues into the framework of this thesis we must establish how and why this application of algorithmic, or automated, decision-making reinforces discriminatory biases while enabling the hegemonic power dynamics in the post-colonial world. The concept of the ‘digital gaze’ can be a foothold into this understanding. Although we were unable to find a fleshed-out definition of the term, we have found several uses of it in social science texts.<sup>73</sup> The exploration of ‘gaze’ can be attributed to the French existentialist/phenomenological philosophers. For the sake of brevity and future references, the focus will be on Foucault’s work,<sup>74</sup> where he establishes how ‘gaze’ is instrumental in power and disciplinary mechanisms.<sup>75</sup>

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<sup>73</sup> See: Michael Dylan Foster, ‘What time is this picture? Cameraphones, tourism, and the digital gaze in Japan’, *Social Identities*, Vol. 15, No. 3, (May 2009).

R. Lyle Skains, ‘The Fragmented Digital Gaze: The Effects of Multimodal Composition on Narrative Perspective’, *Qualitative Inquiry*, Vol. 22, No. 3, (2015).

<sup>74</sup> Others examples could be Derrida and Sartre.

<sup>75</sup> In ‘Discipline and Punish’ Foucault argues that, “...examination combines the techniques of an observing hierarchy and those of a normalizing judgment. It is a normalizing gaze, a surveillance that makes it possible to qualify, to classify and to punish. It establishes over individuals a visibility through which one differentiates them and judges them. That is why, in all the mechanisms of discipline, the examination is highly ritualized. In it are combined the ceremony of power and the form of experiment, the deployment of force and the establishment of truth. At the heart of the procedures of discipline, it manifests the subjection of those who are perceived as objects and the objectification of those who are subjected.”

Michel Foucault, *Discipline and Punish: The birth of the prison*, (New York: Pantheon Books, 1977), P.184-185.

Thus, this discussion of ‘gaze’ can be attributed to technological and scientific phenomenon of the virtual, modern world. Particularly, within the framework of algorithm and data extraction we can see how the ‘other’ is rendered a subject to those who are allocating, analyzing and interpreting their data and how this manifests into pre-ordained



Other contemporary explorations of different types of gaze can also be used when confronting identity in the digital age,<sup>76</sup> and for the scope of this thesis, Edward Said's conceptualization of the 'post-colonial' gaze<sup>77</sup> can be the most helpful. The common theme being that the formulation of identity is based within the jurisdiction of whoever has the power of establishing truth and/or knowledge,<sup>78</sup>; by proxy, these same actors are able to build the definitions of others identities, or what it means to be a member of an 'othered' group. Thus, those who are already in powerful positions are given the opportunity to define the very personhood of the 'other' in relation to themselves, which not only hinges 'other' identities upon their relation to and subjugation to the 'elite' but also completely dismisses the 'others' ownership of their own identity and their ability to be self-defining.

In this sense, when we apply these theories to the 'digital gaze,' we can see how this conception of 'algorithmic bias' is hinged upon entrenched and systematically biased beliefs that are part of society, as we know it. Thus, this idea of the 'digital gaze' can underscore issues discussed in the first chapter, namely: those arising from lack of engagement from subjects who are members of minority groups (in both the international, and domestic sphere – from lack of ownership of personalized data and its prospective uses for 'the common good', to the under-representation of minority groups in the making/maintenance of technological ventures). Further, this notion demonstrates the logical fallacy inherent in scientific/technological progress. The fallacy being: the very notion that science and technology are inherently objective and unbiased.<sup>79</sup> The locus of responsibility of biased results rests within the manifestation of technological progress (i.e., the algorithm), rather than the society/creative process required to develop new technologies, along with the unethical collection of data used to inform them, as

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power structures that best serve the 'majority,' at best, and the elite at worst. Even in terms of 'objective truths' that are purportedly ascertained by these biased samples and their subsequent applications, we can see how these technological tools used for examination and categorization are ritualized almost to the point of deification. Further references to 19<sup>th</sup> century 'technologies of power' can be found in the first chapter of Discipline and Punish, titled, 'The body condemned.' Ibid, P. 3-31.

<sup>76</sup> Examples include but are not limited to; bell hook's 'oppositional gaze,' as well as Laura Mulvey's 'male gaze.'

See: bell hooks, *In Black Looks: race and representation*, (Boston: South End Press, 1992).

Laura Mulvey, 'Visual Pleasure and Narrative Cinema', *Film Theory and Criticism: Introductory Readings*, (New York: Oxford, 1999).

<sup>77</sup> Edward Said, *Orientalism*, (New York: Pantheon Books, 1978).

<sup>78</sup> In *The History of Sexuality*, Foucault further fleshes out the argument that power and knowledge have a sort of symbiotic relationship. Power utilizes knowledge claims while also owing its capacity to the perpetuation of such knowledge claims. Knowledge too, is dependent on power for both corroborating its truth and allowing its functioning and production.

Michel Foucault, *History of Sexuality, vol.1*, (Harmondsworth: Penguin, 1981), P. 92-102.

<sup>79</sup> Brian Martin, *The Bias of Science*, (Canberra: Society for Social Responsibility in Science (ACT), 1979).



well as biased application of them. This too is intriguing, as there has been much ethical work into the realm of responsibility regarding the algorithmic decision-making in terms of self-driving cars,<sup>80</sup> but not all that much academic research delving into the more normative, and foundational aspects of how assertions towards algorithmic bias are under-representing the larger systemic issues that are related to demonizing of ‘the other’ as criminal or degenerative. Ultimately, this issue is particularly relevant within the scope of anti-discrimination clauses that are tantamount to international human rights law exemplified in to Art. 2(2) of the ICESCR.<sup>81</sup>

Like other conceptions of hegemonic gaze, the ‘digital gaze’ reinforces the established power dynamics in manifold ways. Not only because the identities and being of those who are ‘other’ – understood as objects to the technocratic elites, rather than subjects in their own right – but also because the technological nature of this gaze even further entrenches those who are already at the margins of society due to their narrowed access to new technologies. Therefore, the locus of identity shifts and becomes more fragmented as it begins to exist beyond the confines of community and cultural structures,<sup>82</sup> emphasizing the tech products that we are actively consuming and are incorporated within.<sup>83</sup>

In regards to this chapter, the concept of the digital gaze is relevant as it encapsulates the intersecting forms of oppression that can be found in predictive policing. Not only from the purely visual connotations that promote prejudice and racism, which invariably invoke a sort of modern physiognomy, but also those which are much more deeply rooted within post-colonial theory. Some of these biases/repressive techniques are tied to systematic racism involving socio-economic, and geographical placements of marginalized groups. These can be magnified by the

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<sup>80</sup> See: Madeleine C. Elish, *Moral Crumple Zones: Cautionary Tales in Human-Robot Interaction*, Columbia University and Data & Society Research Institute, (2016).

Ryan Calo, ‘Robots as Legal Metaphors’, *Harvard Journal of Law & Technology*, Vol. 30, Iss. 1, (2016).

<sup>81</sup> “The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.”

UNGA, *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, United Nations, Treaty Series, vol. 993, Art. 2(2), Available at: <http://www.refworld.org/docid/3ae6b36c0.html>, (Accessed 14 June 2018).

<sup>82</sup> This type of existential crisis can be explored more in Martin Heidegger’s work on technology and humanity in “The End of Philosophy and the Task of Thinking” where he argues that the technological progression of the modern world challenges the way we think about and explain the place of “man in the world.”

Martin Heidegger, *On Being and Time*, (Chicago: University of Chicago Press, 2002). P.55-71.

<sup>83</sup> This type of problem can also be understood as a sense of ‘algocracy,’ defined as the ways “algorithms structure and constrain *the ways in which humans within those systems interact with one another*, the relevant data, and *the broader community* affected by those systems.” (Italics added)

John Danaher, ‘The Threat of Algocracy: Reality, Resistance and Accommodation’, *Philosophy and Technology*, Vol. 29, Iss. 3, (2016), P. 246-7.

way in which these very same issues are intertwined with access and active participation in modern technological resources. All come into play when investigating the ways in which our biases, and by proxy, algorithmic biases inform our understanding of ‘others,’ as well as ourselves in the digital/technological age.

## 2.2 CASE STUDY: Predictive Policing in the United States

The conceptualizations of the predictive policing and its algorithmic mechanisms, which have been breaking news headlines across the global stage, have to be understood as kaleidoscopically biased. The complexities of the data sets, algorithms, and conception of the aforementioned ‘black box’ mechanisms that are used represent only a few of the issues that need to be tackled. If we look at the most elementary and superficial understanding of the potential outcomes of the digital gaze via predictive algorithms we can see that it can be equated in some ways to a modernized practice of physiognomy. For example, the much-attested paper, “Automated Inference on Criminality using Face Images”<sup>84</sup> postulated that traits of criminality could be ascertained algorithmically via visual cues, tied to shapes/sizes/ratios of individual’s facial features. More recently there was another study, fronted by Michal Kosinski and Yulin Wang, that again made assertions that deep neural networks and algorithmic machine learning could correctly identify an individual’s sexual preferences (i.e., whether they were heterosexual or homosexual).<sup>85</sup> Both of these studies were staunchly argued against by a variety of scholars in regards to the data sets used/the photos selected,<sup>86</sup> and perceived meaning of the results versus how such programming would fare in reality,<sup>87</sup> etc. The generally consensus is that while these

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<sup>84</sup> A piece researched and written by Xiaolin Wu and Xi Zhang in conjunction with both McMaster University and Shanghai Jiao Tong University.

Xiaolin Wu & Xi Zhang, ‘Automated Inference on Criminality using Face Images’, (2016), Available at: *arXiv preprint arXiv:1611.04135*, (Accessed on 20 June 2018).

<sup>85</sup> Michal Kosinski & Yulin Wang, ‘Deep neural networks are more accurate than humans at detecting sexual orientation from facial images’, *Journal of Personality and Social Psychology*, Vol. 114, Iss. 2, (2016).

<sup>86</sup> Namely, the data used came from online dating applications and the algorithm was only subjected to photos of Caucasians.

Blaise Aguera y Arcas, Margaret Mitchell and Alexander Todorov, ‘Physiognomy’s New Clothes’, *Medium*, (7 May, 2017), Available at: <https://medium.com/@blaisea/physiognomys-new-clothes-f2d4b59fdd6a>, (Accessed on 1 May 2018).

<sup>87</sup> Arguably, this data and conclusions rendered by this study are believed to rely upon false positives, since the algorithm simply had to make a decision between two different photos – allocating one as hetero, and the other as homosexual.

two papers ostensibly prove that there is an algorithmic ability to infer who fits into either of these categories of ‘other’ based on purely superficial, facial characteristics they are much more hinged upon their inventors<sup>88</sup> wishes to have their hypothesis proved correct.<sup>89</sup> In a later interview with Kosinski, he states that this study was merely an experiment to demonstrate how algorithmic justification could potentially be used, and to “sound the alarm,”<sup>90</sup> since he believes that AI and facial recognition are already being used by companies and governments.<sup>91</sup> However, these types of resurgence of ‘pseudo-scientific’ schools of thought are only the tip of the iceberg.<sup>92</sup>

When we hone in on the algorithms and data used in predictive policing,<sup>93</sup> specifically within the context of the United States, the outcomes can ultimately be construed as inherently biased from multiple perspectives. Many research papers have demonstrated that while the data used by various police departments across the nation has been understood as objective, in

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Blaise Agüera y Arcas, Margaret Mitchell and Alexander Todorov, ‘Do algorithms reveal sexual orientation or just expose our stereotypes?’, *Medium*, (11 January 2018), Available at: <https://medium.com/@blaisea/do-algorithms-reveal-sexual-orientation-or-just-expose-our-stereotypes-d998fafdf477>, (Accessed on 1 May 2018).

<sup>88</sup> Those who have the epistemic/technological access as well as the funding, which too should be taken into consideration when analyzing technological progress, i.e., who is funding these studies, for what reason/ends?

<sup>89</sup> Drew Anderson, ‘GLAAD and HRC call on Stanford University and responsible media to debunk dangerous and flawed report claiming to identify LGBTQ people through facial recognition technology’, (8 September 2017), Available at: <https://www.glaad.org/blog/glaad-and-hrc-call-stanford-university-responsible-media-debunk-dangerous-flawed-report>, (Accessed on 2 June 2018).

<sup>90</sup> Heather Murphy, ‘Why Stanford Researchers Tried to Create a “Gaydar” Machine’, *New York Times*, (9 October 2017), Available at: <https://www.nytimes.com/2017/10/09/science/stanford-sexual-orientation-study.html>, (Accessed on 12 June 2018).

<sup>91</sup> Brian Resnick, ‘This psychologist’s “gaydar” research makes us uncomfortable. That’s the point.’, *Vox*. (29 January 2018), Available at: <https://www.vox.com/science-and-health/2018/1/29/16571684/michal-kosinski-artificial-intelligence-faces>, (Accessed on 12 June 2018).

<sup>92</sup> There are also highly publicized accounts of Google’s facial recognition algorithm misidentifying black people as gorillas.

See: Ian Tucker, ‘“A white mask worked better”: Why algorithms are not colour blind’, *The Guardian*, (28 May 2017), Available at: <https://www.theguardian.com/technology/2017/may/28/joy-buolamwini-when-algorithms-are-racist-facial-recognition-bias>, (Accessed on 12 June 2018).

Tom Simonite, ‘When it comes to gorillas, google photos remain blind’, *Wired*, (1 January 2018), Available at: <https://www.wired.com/story/when-it-comes-to-gorillas-google-photos-remains-blind/>, (Accessed on 12 June 2018).

<sup>93</sup> In this context, I am referring to the algorithmic systems used by PredPol, or HunchLab, as examples. Both of these systems use data that has been accumulated by police departments in a city/region to make forecasts or predictions for ‘hot spots’ of future criminal activity, which would result in police officers being dispatched to said areas.

See: Maurice Chammah, ‘Policing the Future’, *The Verge*, (2016), Available at: <https://www.theverge.com/2016/2/3/10895804/st-louis-police-hunchlab-predictive-policing-marshall-project>, (Accessed on 20 June 2018).

Furthermore, in other cases, algorithms are also being used to determine the likelihood of a person to reoffend.

See: Danielle Kehl, Priscilla Guo, and Samuel Kessler, ‘Algorithms in the Criminal Justice System: Assessing the Use of Risk Assessments in Sentencing’, Responsive Communities Initiative, Berkman Klein Center for Internet & Society, Harvard Law School, Available at: <http://nrs.harvard.edu/urn-3:HUL.InstRepos:33746041>, (Accessed on 20 June 2018).

actuality it is anything but. There have been many studies on various issues that pervade the ‘objectivity’ of policing on the whole, and eschew the systemic and systematic racialized and ultimately biased nature of police collected data samples.<sup>94</sup> The fact is, in the United States it is most often people belonging to visible minority groups, especially if they come from lower socio-economic classes, who are affected.<sup>95</sup> This is because the areas that are considered to be ‘hot spots’ for criminal activity are those that were already most often patrolled by police officers, and thus provided the most sample data.<sup>96</sup> Conveniently, these areas are often considered low income, where people of colour predominantly reside and work,<sup>97</sup> which can be used to further entrench hegemonic social relations between groups.<sup>98</sup> Thus, it becomes evident that the means by which big data is cultivated, even on the domestic scale, is not borne from wholly neutral or ‘scientific’ research but in this case, is already ingrained with prejudice and discriminatory policing policies and biases<sup>99</sup> which have been inducted into the normalized schema of big data<sup>100</sup> and the digital gaze.

These issues of bias are linked with not only socio-economic perspectives but are also contingent upon the racialized value and legal systems of what is considered to be a ‘crime’ and

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<sup>94</sup> See: U.S. Department of Justice: Civil Rights Division, *Investigation of the Baltimore City Police Department*, (10 August 2016), Available at: <https://www.justice.gov/opa/file/883366/download>, (Accessed on 20 June 2018).

<sup>95</sup> See: UNGA, *Report of the Special Rapporteur on extreme poverty and human rights on his mission to the United States of America*, 4 May 2018, A/HRC/38/33/ADD.1, Available at: <http://undocs.org/A/HRC/38/33/ADD.1>, (Accessed on June 14 2018).

<sup>96</sup> See: Kristian Lum & William Isaac, ‘To predict and serve?’, *Significance Magazine*, Vol. 13, Iss. 5, (October 2016).

<sup>97</sup> See: Brian Jordan Jefferson, ‘From prisons to hyper policing: Neoliberalism, carcerality, & regulative geographies’, *Historical geographies of prisons: Unlocking the usable carceral past*, ed. K. Morin and D. Moran, (New York: Routledge, 2015), P. 185-205.

Rashad Shabazz, *Spatializing Blackness: The architectures of confinement and black masculinity in Chicago*, (Urbana: University of Illinois Press, 2015).

<sup>98</sup> See: Hamid R. Ekbia, ‘An interview with Eric Sheppard: Uneven spatialities – The material, virtual, and cognitive’, *The Information Society*, Vol. 25, Iss. 5, (2009), P. 364-369.

Sarah A. Elwood, ‘GIS and collaborative urban governance: Understanding their implications for community actions and power’, *Urban Geography*, Vol. 22, Iss. 8, (2001), P. 727-759.

John Pickles, *A history of spaces: Cartographic reason, mapping and the geo-coded world*, (London and New York: Routledge, 2004).

<sup>99</sup> See: Leslie T. Wilkins, *Social deviance: Social policy, action and research*, (London and New York: Routledge, 2013).

Walter R. Gove, Michael Hughes & Michael Geerken, ‘Are uniform crime reports a valid indicator of the index crimes? An affirmative answer with minor qualifications’, *Criminology*, Vol. 23, Iss. 3, (1985), P. 451-501.

<sup>100</sup> See: American Civil Liberties Union, *Stop and frisk in Chicago*, (Chicago: American Civil Liberties Union of Illinois, March 2015), Available at: [https://www.aclu-il.org/sites/default/files/wp-content/uploads/2015/03/ACLU\\_StopandFrisk\\_6.pdf](https://www.aclu-il.org/sites/default/files/wp-content/uploads/2015/03/ACLU_StopandFrisk_6.pdf), (Accessed on 20 June 2018), P. 14.

Elizabeth J. Andonova, ‘Cycle of misconduct: How Chicago has repeatedly failed to police its police’, *DePaul Journal for Social Justice*, Vol. 10, Iss. 1, (2017).

who is a ‘criminal.’<sup>101</sup> This becomes evident if we analyze the statistical representation of criminality for a specific crime in the United States. For example, if we were to look at recreational marijuana use, we can see that people of colour are disproportionately criminalized for an act that is relatively equally practiced between white people and people of colour.<sup>102</sup> From the breadth of academic resources, we can establish that there are, in fact, inherently biased mechanisms in place when it comes to policing. Thus, how can we expect to escape a diametrically biased system of policing by using an algorithm that is fed biased data samples under the guise of ‘neutrality’? The interpretation and visualization that comes from predictive policing instruments cannot be eschewed as a normative truth; instead it underscores a specific empirical construct of the power dynamics that pervade society.

In terms of privacy, the application of predictive policing instruments can be even more detrimental to groups that are already subject to prejudice and racial profiling. Since the legal mechanisms in the United States, as a federal entity, in regards to privacy, have not been updated, navigating the terrain between privacy rights and big data can be convoluted. In fact, the majority of legislation in regards to privacy of the American populace has generally opposed this concept of privacy on the individual level since the September 11<sup>th</sup> attacks in 2001.<sup>103</sup> Instead, the privacy of the individual, especially those who fall into a marginalized group or an ‘othered’ identity, have the ownership of their privacy and data usurped for the ‘greater good’ of the nation. While it has been argued that the type of surveillance and accumulation of data used

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<sup>101</sup> M. David Erman & Richard J. Lundman, *Corporate and governmental deviance: Problems of organization behavior in contemporary society*, (Oxford, UK: Oxford University Press, 2002).

Barry Sample & Michael Philip, ‘Perspectives on race and crime in research and planning’, *The Criminal Justice System and Blacks*, D.E. Georges-Abeyie, eds., (New York: Clark Boardman, 1984), 21-35.

<sup>102</sup> See: American Civil Liberties Union, *The War on Marijuana: In Black and White*, (New York: American Civil Liberties Union, June 2013), Available at: <https://www.aclu.org/files/assets/aclu-thewaronmarijuana-rel2.pdf>, (Accessed on 20 June 2018).

American Civil Liberties Union, *Stop and frisk in Chicago*, (Chicago: American Civil Liberties Union of Illinois, March 2015), Available at: [https://www.aclu-il.org/sites/default/files/wp-content/uploads/2015/03/ACLU\\_StopandFrisk\\_6.pdf](https://www.aclu-il.org/sites/default/files/wp-content/uploads/2015/03/ACLU_StopandFrisk_6.pdf), (Accessed on 20 June 2018),

<sup>103</sup> See: U.S. Congress, *Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism of 2001* (USA Patriot Act), Public Law 107-56, 107<sup>th</sup> Congress, Available at:

<https://www.sec.gov/about/offices/ocie/aml/patriotact2001.pdf> (Accessed on 20 June 2018) and the FISA Amendments Act of 2008, (U.S. Congress, *An Act to amend the Foreign Intelligence Surveillance Act of 1978 to establish a procedure for authorizing certain acquisitions of foreign intelligence, and for other purposes* (NSA Amendments Act of 2008), Public Law 110-261, 110<sup>th</sup> Congress, Available at:

<https://www.gpo.gov/fdsys/pkg/PLAW-110publ261/pdf/PLAW-110publ261.pdf>, (Accessed on 20 June 2018)), which led to the establishment of the PRISM surveillance program.

See: T.C. Sottek & Janus Kopfstein, ‘Everything you need to know about PRISM’, *The Verge*, (17 July 2013), Available at: <https://www.theverge.com/2013/7/17/4517480/nsa-spying-prism-surveillance-cheat-sheet>, (Accessed on 20 June 2018).

in predictive policing instruments could be helpful in reducing crime,<sup>104</sup> it can also be understood as a violation of the Fourth Amendment of the United States Constitution.<sup>105</sup> Typically, the Fourth Amendment focuses on the “how” – i.e., how the information was acquired<sup>106</sup> – and in so doing has been quite inept in dealing with the rapid technological advancements made since its inception.<sup>107</sup>

However, it is important to note that placing the responsibility of potentially biased outcomes on the institutions that use them is also too narrow. While it is important that police departments are held accountable, we must also ensure that there are more checks and balances prior to these new technologies/algorithms hitting the market.<sup>108</sup> Following this line of argument, the ‘black box’ that encapsulates the entire exercise of predictive policing, is a major roadblock when attempting to come to a judicial conclusion. In order to have a meaningful dialogue about the effects predictive policing algorithms produce, there not only needs to be a radical demystification of how the algorithm performs and what data is fed into it, but also into how it is sourced and then applied to society. Arguably, there must be a thorough justification of all of these issues, which are deemed to be private by police enforcement in order to justify the breach of privacy and surveillance of the populace.

### 2.3 REDESIGNING EQUALITY

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<sup>104</sup> Walter L. Perry, Brian McInnis, Carter C. Price, Susan C. Smith and John S. Hollywood, *Using Predictions to Support Police Operations, From Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations*, RAND Corporation, (2013), Available at: [https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR200/RR233/RAND\\_RR233.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR233/RAND_RR233.pdf), (Accessed on 20 June 2018).

<sup>105</sup> “The right to people to be secure in their persons, houses, papers and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the person’s things to be seized.” U.S. Constitution, *Amendment IV*, 15 December, 1791, Available at: <https://www.gpo.gov/fdsys/pkg/GPO-CONAN-1992/pdf/GPO-CONAN-1992-10-5.pdf>, (Accessed on 20 June 2018).

<sup>106</sup> There has been speculation in a number of cases as to what data can be used in the court of law outside of the realm of predictive policing in the context in which it currently exists. For example: GPS data, in *United States v. Katzin*, and perhaps even more insidiously in DNA samples in the case of, *Maryland v. King*.

<sup>107</sup> “Fourth Amendment law... has proved singularly inept at dealing with the technological revolution...[since it] has purported to regulate and control the non-consensual governmental acquisition of information from individuals in the name of privacy protection.”

Russell D. Covey, ‘Pervasive Surveillance and the Future of the Fourth Amendment’, *Mississippi Law Journal*, Vol. 1289, Iss. 80, (2011), 1294-95.

<sup>108</sup> New York based institute, AI Now, promotes the use of ‘algorithmic impact assessments’ – which will be discussed at further length in the final chapter.

Through an investigation of predictive policing, especially in the scope of the United States, we can see how the notion of the digital gaze can be exacerbated through spatial-temporal attributes in tandem with the pre-ordained notions and values inherent in western, imperialistic epistemologies. As previously alluded to, the conceptualization of terrain that is borne from predictive policing instruments cannot be treated as an *objectively* true reality; rather this type of visualization, which is informed by hegemonic ideals, constructs our reality.<sup>109</sup> This concept of ‘criminal’ or ‘deviant’ is not in itself neutral, especially if we are relying purely on pre-emptively biased data sets. The very notion of privacy is contingent upon an individual’s worth and social capital in the system. This means that those who have lower socio-economic means, and are members of marginalized groups, are given less opportunity to ‘own’ their own data, along with their identities – or at least are less capable of rendering the definitions of such things in the grand narrative of a hegemonic society. Thus, it becomes clear that we must be careful when assigning values, especially those labeled as ‘neutral’, to scientific and technological exploits. Furthermore, the complexity of technology and its application is emblematic within the interplay of socio-economic issues, discrimination and privacy rights.

However, it is also important to see the other side of this argument. Namely, that it is obvious that through technological progress there has been a dramatic improvement of standards of living for much of the world, including those who live at the margins of societies and the global poor. Nevertheless, it is important to integrate a more ethical and cognizant approach to the cause and effects of technological and scientific progress, similar to the field of bio-ethics and social-corporate responsibility. As of late, there have been moves in this direction, with new courses being offered at renowned universities, like Oxford, Harvard, MIT and Stanford that specialize in the interdisciplinary realms of applied ethics regarding computer-science, programming and tech. Yet, in order to have a meaningful application for those most affected, it is of implicit importance that this type of awareness escapes the confines of the Ivy League and academia, as “the master’s tools will never dismantle the master’s house.”<sup>110</sup>

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<sup>109</sup> See: Thomas Luckmann & Peter L. Berger, *The Social Construction of Reality*, (New York: Random House, 1966).

<sup>110</sup> Audre Lorde, *Sister Outsider: Essays and Speeches*, (New York: Crossing Press, 1984).



By looking at the reading materials for the 2018 MIT course on “Ethics and Governance of AI”<sup>111</sup> we can see how this narrowed perspective may also not be adequate for a fully intersectional conceptualization of ethical, as well as socio-political ramifications of AI, and algorithms – even in an academic setting. Though it incorporates interesting applied ethical methods pertaining to specific issues borne out of AI implementation, the course material does not focus on foundational ethical teachings. While these traditional ethical texts may have been taught to students who took introductory Philosophy courses, it could be argued that a working knowledge of Aristotle’s ‘virtue theory’<sup>112</sup> or Kant’s ‘categorical imperative’<sup>113</sup>, amongst others, may be of immanent import when molding the minds of future generations of programmers, computer scientists or even business owners. Further, the incorporation of more contemporary ethical philosophical thinkers, who challenge the status quo, may too be helpful for future generations. This is particularly important for those whose future careers will inevitably impact the socio-political landscape, and by proxy those who are more vulnerable than others, on the international scale.

Additionally, these ideological standpoints can be translated to norms that exist on the other side of the Atlantic in terms of institutionalized racism, lack of institutional algorithmic accountability, misuse of the concept of ‘neutrality’ in technological exploits, and the like. However, if we were to analyze the use of predictive policing and data privacy within continental Europe we would quickly see that it varies too vastly between countries to have a meaningful analysis within the scope of this thesis. This too will change, in the wake of recent implementation of the GDPR legislation, which occurred this spring. This implementation would inevitably entertain a more vested interest in protecting the rights of *all* citizens across the EU,

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<sup>111</sup> The course can be found here: MIT, ‘The Ethics and Governance of Artificial Intelligence’, (2017), Available at: <https://www.media.mit.edu/courses/the-ethics-and-governance-of-artificial-intelligence/>, (Accessed on 22 June 2018).

<sup>112</sup> To be reductive, this is the idea that to be ethical is based on the virtue of an action or character. This means that something is done for the right reason, with the right intent, towards the right people. To be virtuous in this sense is a constant learning curve, contingent upon self-reflection.

Aristotle, *The Nicomachean Ethics*, excerpts, Book 2 and Book 7, in S. Cahn and P. Markie, eds. *Ethics*, (Oxford: Oxford University Press, 2010), P. 134-160.

<sup>113</sup> Once again, for the sake of brevity, the categorical imperative is also known as the ‘universalizing principle.’ The main idea being, that moral maxim is based on absolutes in duty. This means that an action is deemed moral or immoral based upon its application on a universal i.e., a duty towards a person should be done as duty, rather than a means to another end.

Immanuel Kant, *Groundwork for the Metaphysics of Morals*, (1785), Available at: <https://www.stolaf.edu/people/huff/classes/GoodnEvil/Readings/kantgw.pdf>, (Accessed on 20 June 2018), Chapter 3.



regardless of whichever minority or majority group they belong to. While this new legislation has the potential to create a more level playing field for European citizens, legal frameworks are not necessarily sufficient – particularly since this regulation will only cover European citizenry.<sup>114</sup> Rather, in this scenario as well, we must approach this type of discriminatory data policing, or even collection of data on the whole from a more holistic and ethical perspective.

In terms of the scope of the GDPR, if we analyze it through a pessimistic lens it could be argued that its strict fines and penalties would only have earthshattering effects on small businesses. While it is important to maintain a standard by which individual citizens' data is protected from the ground up, the GDPR could be construed as one that works to the benefit of pre-existing powers, and provides little incentives for larger companies/institutions to play by the rules/lobby for *more* transparency.<sup>115</sup> By and large, the computer and new technologies have always been an esteemed tool for the dominant, utilized to impose the power of the status quo whether through policing, governance or warfare. Arguably, the computer and the Internet can be used “to exploit, to put on file, to control and to repress.”<sup>116</sup> This leads us to the discussion that will take place in the following chapter; the political aspects of big data and privacy, particularly affecting minority populations. Specifically, it will explore the ‘neutrality’ of governance and ambiguous fluidity of democracy in a digital age informed by social media.

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<sup>114</sup> This brings up another intriguing argument, where the GDPR could be construed as a manifestation of hierarchal, and quasi-colonial ideologies in the sense that it regards the privacy and data of its own citizenry over other nations – particularly if analyzed through the lens of migrants/refugees. Additionally, it also ignores the fundamental issues of digital colonialism we discussed in the first chapter.

<sup>115</sup> For example; Facebook, Google, other large tech companies and ultimately, governments and national institutions that use data to their own benefit, without necessarily practicing truly transparent accountability measures (as we have seen from various instances of ‘whistleblowing’ over the past several years).

<sup>116</sup> A quote that can be attributed to the anarcho-luddite ‘terrorist’ group, The Committee for Liquidation or Subversion of Computers (CLODO) were most active between the years of 1979 – 1983.

## CHAPTER THREE

### 3.1 THE TECHNOLOGICAL IS POLITICAL<sup>117</sup>

As we can see from previous setting of the stage in the first chapter of this thesis, and the example of predictive policing in the second, the presupposition that technological advancements, and by proxy, algorithms, are inherently neutral cannot be considered an absolute truth. This conclusion can be deduced given that science and knowledge claims are entrenched by engrained perspectives and biases of the societies and communities that wield power<sup>118</sup> – as we have previously seen. However, when we take a step back from institutional use of algorithms and data processing within the realm of policing methods, we can see that the very governmental frameworks within which they exist, can too fall victim to similar ideological pitfalls. This type of ‘surveillance capitalism’<sup>119</sup> cannot be contained merely within the scope of policing methods, as it is just one of the manifestations of unethical use of algorithmic decision-making, which can be construed as symptomatic of the globalized and neoliberal world in which we live. The matter at stake can also be attributed to whoever has ownership, and access to their own or others digital identities and how this manifests in the algorithmic applications of big data.

In the previous chapter we discussed the ways in which algorithms and big data can be conceptualized via the notion of the ‘digital gaze.’ When we shift the focus towards the larger, governmental manifestations of this multifaceted issue, the incorporation of another Foucauldian theory of power may give way to a more holistic and expanded understanding of the issues at hand. Namely, Foucault’s notion of the panopticon<sup>120</sup> can provide an ample backdrop for the

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<sup>117</sup> A nod to the second-wave feminist slogan, “the personal is political,” which can be attributed to: Carol Hanisch, ‘The Personal is Political’, *Notes from the Second Year: Women’s Liberation*, (New York: New York Radical Women, 1970).

<sup>118</sup> An interesting philosophical position on this matter can be found in: Sandra Harding, ‘Rethinking Standpoint Epistemology: What is Strong Objectivity?’, *The Centennial Review*, Vol. 36, No. 3 (Fall 1992).

<sup>119</sup> A term that was first coined by John Bellamy Foster and Robert McChesney in *Monthly Review* in 2014. – but came to the forefront due to Shoshana Zuboff. Zuboff postulates that the “coupling of the vast powers of the digital with the radical indifference and intrinsic narcissism of financial capitalism and its neoliberal vision” has ushered in an age of surveillance capitalism in which largely unchecked amalgamation of data and thus, power can be harnessed by those in positions of authority.

Shoshana Zuboff, ‘Google as a Fortune Teller: The Secrets of Surveillance Capitalism’, *Frankfurter Allgemeine Zeitung*. (5 March 2015), Available at: <http://www.faz.net/aktuell/feuilleton/debatten/the-digital-debate/shoshana-zuboff-secrets-of-surveillance-capitalism-14103616.html>, (Accessed 20 June 2018).

<sup>120</sup> The original notion of the panopticon can be attributed to Jeremy Bentham. The panopticon serves as a disciplinary structure, like a prison, for example, in which inmates could be observed at all times by a

ways in which governments and their institutions, along with new technologies, inform our day-to-day lives. In brief, the concept of the panopticon can be understood as a surveillance mechanism, in which the relation between power and knowledge is underscored by observation. This means that the mechanisms of power become stronger based on the possibility of observation/surveillance – according to Foucault, nobody even needs to be watching, as long as the ‘controlled’ have internalized the idea that their observation is constant. This can further result in the rendering of knowledge, and increase the fortification of power.<sup>121</sup>

When we integrate this metaphor of surveillance culture and panopticism into the modern and digital sphere the importance of new technologies in reinforcing power and knowledge through the harnessing of big data cannot be ignored.<sup>122</sup> As we have seen with increasing frequency and publicity, there is a manifold of ways in which citizens are being monitored by their own governments.<sup>123</sup> Coupled with the popularity of social media, individuals further entrench themselves willingly<sup>124</sup> within this schema of ‘power by observation’ and self-surveilling rubric with increasing frequency. This is alarming due to the rapidity of technological advancements in data collection, and the inability of legislation to keep up, particularly in regards to protection of some fundamental human rights, like rights to privacy, anti-

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watchman/warden figure. The most important facet is that the inmates would not be cognizant of whether or not they were actually being watched at each and every moment – but the structure and the concurrent effects of ‘constant’ or unknown surveillance would manifest in a constant self-surveillance of prisoners.

Jeremy Bentham, *The Panopticon Writings*, (New York: Verso, 2011).

<sup>121</sup> Thus, those in positions of power, in the metaphorical and societal framework of the panopticon, are constantly looking for “new objects of knowledge over all the surfaces on which power is exercised.”

Michel Foucault, (1977), P. 27.

<sup>122</sup> For a more fleshed out understanding of this argument, see:

Tom Brignall III, ‘The New Panopticon: The Internet Viewed as a Structure of Social Control’, *Theory and Science*, Vol. 3, Iss. 1, (2002).

<sup>123</sup> As we saw in 2013 when American whistleblower, Edward Snowden, leaked NSA documents showing the breadth of information and data that was cultivated from domestic surveillance practices.

Glenn Greenwald, Ewen MacAskill & Laura Poitras, ‘Edward Snowden: the whistleblower behind the NSA surveillance revelations’, *The Guardian*, (11 June 2013), Available at: <https://www.theguardian.com/world/2013/jun/09/edward-snowden-nsa-whistleblower-surveillance>, (Accessed on 20 June 2018).

See more examples at: TJ McIntyre, ‘State’s approach to data privacy is a national scandal’, *Irish Times*, (6 October 2017), Available at: <https://www.irishtimes.com/opinion/state-s-approach-to-data-privacy-is-a-national-scandal-1.3246055>, (Accessed on 20 June 2018).

European Commission, ‘The former Yugoslav Republic of Macedonia: Recommendations of the Senior Experts Group on systematic Rule of Law issues relating to the communications interception revealed in Spring 2015’, (8 June 2015), Available at: [https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/news\\_corner/news-news-files/20150619\\_recommendations\\_of\\_the\\_senior\\_experts\\_group.pdf](https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/news_corner/news-news-files/20150619_recommendations_of_the_senior_experts_group.pdf), (Accessed on 20 June 2018).

<sup>124</sup> Many of us agree to the privacy terms and conditions of various online, and technological interlocutors, regardless of our full understanding of what personal data we have signed away, to whom and what it will be used for.

discrimination and freedom of expression. Furthermore, in an increasingly interconnected world, rife with surveillance structures on the governmental, institutional and corporate levels, these aforementioned rights intersect in many places, and can be violated in ways that cannot be so easily compartmentalized. Thus, the adoption of the GDPR cannot come soon enough, since its aim is one of a much more comprehensive protection of individual data and individual rights, even though its scope is limited to that of the EU and its citizenry.

That said, the GDPR can also be critiqued in terms of both its scope and application. It will undoubtedly implement a much more rigorous privacy policy amongst the tech giants, as we have already begun to see across Europe, resulting in the surge of new privacy policies being doled out from social media outlets and browsers alike. But to what extent will this policy protect those who are most vulnerable, even within the confines of Europe? How will the GDPR fare if, or when, a governmentally sanctioned scandal within the EU breaks news headlines? Given the intertwining of Facebook and other social media outlets (like Twitter, for example) to modern governance and democracy, how can we justifiably claim that the ‘big tech’ companies are more to blame than the political players who benefit from them?

### **3.2 CASE STUDY: Cambridge Analytica, Facebook and the American Election**

In the case of the most recent American Presidential Election in 2016, we can see how the interplay between government, the tech giants and the academy is intrinsically interlinked to hierarchical power and knowledge dynamics. In this specific scenario, which is still unfolding, the institutions that already hold vast amounts of power are capitalizing upon the panoptic triumvirate framework of power, surveillance and knowledge, which have become ingrained in Western societies, in more ways than one. Since the inauguration of Donald Trump, the role of Facebook in his claim to the presidency has perpetually been a hot topic. The interest initially was trapped within the realm of Russian involvement and ‘information warfare’ activities<sup>125</sup> – which is undoubtedly a relevant issue in regards to basic violations of rule of law and

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<sup>125</sup> Associated Press, ‘Russian operatives conducted ‘information warfare’ against the US. Here’s how they did it’, *ABC News*, (21 February 2018), Available at: <http://www.abc.net.au/news/2018-02-17/russian-defendants-conduct-information-warfare-against-the-us/9457942>, (Accessed on 20 June 2018).

See Full indictment: United States of American v. Internet Research Agency LLC and others, 18 U.S.C. §§ 2, 371, 1349, 1028A), 16 February 2018, Available at: <https://www.justice.gov/file/1035477/download>, (Accessed on 20 June 2018).

democratization practices. However, as time goes on, we see how these ties were just the tip of the iceberg, and this type of ‘divide and conquer’ strategy can also be attributed to a slew of elite actors within the ‘western’ sphere of influence.

In March of this year, whistleblower Christopher Wylie brought forward details of the academically and UK-based data analytics organization, Cambridge Analytica, and their subsequent involvement in the presidential election, along with their less than savoury ties to Facebook. In interviews, Wylie argues that Cambridge Analytica harvested approximately more than 50 million individuals’ data from Facebook through a ‘personality quiz’<sup>126</sup>, which required the individuals to agree to allow *their* data to be accessed, but also allowed access to *other* peoples’ personal data. Allegedly, this application also harvested data from willing participants’ ‘friend’ lists, without their explicit approval, knowledge or consent, which can be construed as a blatant breach of Facebook’s privacy policy.<sup>127</sup> With this enormous amount of data, the Cambridge Analytica team began creating content to sway the opinion of the American populace in terms of whom they would vote for in the, then, forthcoming election.<sup>128</sup> Wylie alleges that the goal of Cambridge Analytica, in this particular instance,<sup>129</sup> was primarily one of propagandist nature, rooted in research/academic interests, which eventually resulted in access to information being controlled via targeting methods for a Republican electoral outcome. The goal was essentially to change the face of politics, but in order to do so, culture, too, had to be changed drastically, by manipulating the so-called ‘units’ that make up culture – people.<sup>130</sup> However, according to Wylie this type of compartmentalizing and algorithmically individualized/targeted marketing schematics has led to a further “fragmenting [of] society, in a way where we do not

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<sup>126</sup> An app called “thisismydigitallife” – which was based on a similar application used by Michal Kosinski, whose work was previously mentioned in regards to algorithmic decision-making in terms of sexuality in the previous chapter.

<sup>127</sup> Carole Cadwalladr, ‘The Cambridge Analytica Files: ‘I made Steve Bannon’s psychological warfare tool’: meet the data war whistleblower’, *The Guardian*, (18 March 2018), Available at: <https://www.theguardian.com/news/2018/mar/17/data-war-whistleblower-christopher-wylie-faceook-nix-bannon-trump>, (Accessed on 20 June 2018).

<sup>128</sup> Ibid.

<sup>129</sup> This particular instance is relevant as Wylie stated that Cambridge Analytica did not have unwavering political or ideological beliefs. Rather, “they’re mercenaries. They’ll work for anyone who pays.” (Ibid.) This is further explicated in Wylie’s statements, as Cambridge Analytica has varying degrees of ties to “Russia, Facebook, Trump, Mercer, Bannon, [and] Brexit.” (Ibid.)

<sup>130</sup> Carole Cadwalladr, Mustafa Khalili, Charlie Phillips, Marc Silver, Ash Jenksins, Jess Search, Sandra Whipham and Oliver Rivers, ‘Cambridge Analytica Files: Cambridge Analytica Whistleblower: ‘We spent \$1m harvesting millions of Facebook profiles’ Video’, *The Guardian*, (17 March 2018), Available at: <https://www.theguardian.com/uk-news/video/2018/mar/17/cambridge-analytica-whistleblower-we-spent-1m-harvesting-millions-of-facebook-profiles-video>, (Accessed on 20 June 2018).

have any more shared experiences and we do not have any more shared understanding.”<sup>131</sup> This same interview concludes in Wylie’s disconcerting query, “if we do not have anymore shared understanding how can we be a functioning society?”<sup>132</sup>

This particular case not only underscores the alarming destruction of the fabric of a nation and a sense of camaraderie/community,<sup>133</sup> in terms of societal fragmentation and dissolution of democratic processes; it also sheds light on the ineffective protection and inappropriate use of user data on behalf of Facebook. When the Cambridge Analytica scandal first broke headlines, Facebook’s stance was one of silence, and self-preservation.<sup>134</sup> However, once faced with the issues head on it became clear that Facebook’s ties to Cambridge Analytica were not as unbeknownst or as benevolent as previously alluded to. Wylie maintains that not only did Facebook allow this blatantly undemocratic use of personal data to go unhindered, under the guise of academia, but there was also little recourse for dealing with the destruction of the data after they learned of its unethical existence and use in 2015.<sup>135</sup> Regardless of this specific case, within the past several years we have begun to see a trend in Facebook’s varying role in (un)democratic political affairs, and the spreading of misinformation and hate speech, on a global scale.<sup>136</sup> Thus, this type of involvement on behalf of Facebook, which can, in part, be

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<sup>131</sup> Ibid.

<sup>132</sup> Ibid.

<sup>133</sup> Which can be understood as typical within neo-liberal societies.

<sup>134</sup> “With Mark Zuckerberg’s response, they are trying to convey that they are taking this seriously, but they are reacting to furor rather than facts...the facts are not new to them.”

Julia Carrie Wong, ‘Cambridge Analytica Files: Mark Zuckerberg apologizes for Facebook ‘mistakes’ over Cambridge Analytica’, *The Guardian*, (22 March 2018), Available at: <https://www.theguardian.com/technology/2018/mar/21/mark-zuckerberg-response-facebook-cambridge-analytica>, (Accessed on 20 June 2018).

<sup>135</sup> See: Carole Cadwalladr, (18 March 2018).

This type of willing ignorance or unwillingness to evoke the forthcoming caveat of ‘the right to be forgotten’ in the GDPR also points to an uncertain future for Facebook on ethical lines.

<sup>136</sup> We have seen this in the Philippines, in Myanmar, beyond the scope of the United States, United Kingdom and continental Europe.

See more: Lauren Etter, ‘What Happens When the Government Uses Facebook as a Weapon: How Rodrigo Duterte turned Facebook into a weapon, with a little help from Facebook’, *Bloomberg*, (7 December 2017), Available at: <https://www.bloomberg.com/news/features/2017-12-07/how-rodriego-duterte-turned-facebook-into-a-weapon-with-a-little-help-from-facebook>, (Accessed on 20 June 2018).

Libby Hogan & Michael Safi, ‘Revealed: Facebook hate speech exploded in Myanmar during Rohingya crisis’, *The Guardian*, (3 April 2018), Available at: <https://www.theguardian.com/world/2018/apr/03/revealed-facebook-hate-speech-exploded-in-myanmar-during-rohingya-crisis>, (Accessed on 20 June 2018).

attributed to algorithmic accountability,<sup>137</sup> and subsequent finger pointing at the Cambridge Analytica team, should come as no surprise.

During the congressional hearings in the tumultuous aftermath of the Cambridge Analytica scandal, Zuckerberg put on a great show, in which he agreed that the implementation of the GDPR would lead to a better, and a more secure privatization policy in the realms of personal data.<sup>138</sup> However, when faced head on with questions pertaining to Facebook's universal adherence to the forthcoming GDPR frameworks, his answers were ambiguous.<sup>139</sup> Ultimately, he agreed that the *controls* that would be integrated into the Facebook platform, in order to adhere to the GDPR, would supersede continental Europe, but this statement does not confirm that *privacy protection* will truly fall into the same schema on a global scale. This ambiguity was underscored in practice when a week later, Facebook made a counterintuitive move towards the universal promotion of the GDPR and personal data protection under its auspices; 1.5 billion users' data were shifted from European soil in Ireland to California, wherein privacy legislations are not as strict.<sup>140</sup> Only time will tell how sharp the teeth of the GDPR will be as it claims to protect all European citizens' data on an extra-territorial scale.

### 3.3 PRODUCTION OF TRUTH IN THE DIGITAL ERA

As a result of the exploration of the Cambridge Analytica scandal, along with the example of Predictive Policing, the interplay between corporations, governance, and academia can be established – and shines light upon various and intersecting violations of fundamental freedoms. However, in this case we must also examine the ways in which this normalization and

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<sup>137</sup> However, this issue obviously goes far beyond the scope of algorithms, in terms of who created content, escalated conflicts, etc. The point is that Facebook uses algorithms to tailor news feeds to individual users, to induce click bait for profit, resulting in a loss of democracy, access to information, creation of echo chambers, and the like. See more: Claire Wardle & Hossein Derakhshan, *Information Disorder: Toward an interdisciplinary framework for research and policy making*, Council of Europe, DGI, (September 2017).

<sup>138</sup> Julia Carrie Wong, 'Mark Zuckerberg faces tough questions in two-day congressional testimony – as it happened', *The Guardian*, (11 April 2018), Available at: <https://www.theguardian.com/technology/live/2018/apr/11/mark-zuckerberg-testimony-live-updates-house-congress-cambridge-analytica>, (Accessed on 20 June 2018).

<sup>139</sup> Ibid.

<sup>140</sup> In terms of privacy protection, Facebook still agrees that they will remain the same regardless of this shift. Alex Hern, 'Facebook moves 1.5bn users out of reach of new European privacy law', *The Guardian*, (19 April 2018), Available at: <https://www.theguardian.com/technology/2018/apr/19/facebook-moves-15bn-users-out-of-reach-of-new-european-privacy-law>, (Accessed on 20 June 2018).

manipulation of the democratic process violates the human rights of those who are abjectly marginalized, tenfold. An interesting starting point is to go back to Wylie’s description of what he felt his contribution to his own digital-Frankenstein, Cambridge Analytica, could mean for the American populace; namely, that the democratic process was stunted via fragmentation of collective understanding and targeted content. This type of analysis runs parallel to the previous discussion of the digital gaze<sup>141</sup>, and demonstrates how once again, minority groups are affected in a plethora of ways.

If we look at this scenario from this schema, rooted within post-colonial and Foucauldian perspectives, there are causal links between access to knowledge or power, and socio-economic standing. In ‘*Archaeology of Knowledge*,’ Foucault brings forth his methodology for some of his works, like *The Birth of the Clinic* and *The Order of Things*, for example. He argues that we must attempt to understand the history of knowledge through an archaeological means, as “archaeology tries to define not the thoughts, representations, images, themes, preoccupations that are concealed or revealed in discourses<sup>142</sup>; but those discourses themselves, those discourses as practices obeying certain rules.”<sup>143</sup> Meaning, that historical documents, truth, and knowledge alike cannot be examined in a linear way, nor can they be instrumentalized as “a sign of something else.”<sup>144</sup> Language and histories are limiting – as they cannot be understood as transrelational, rather they just create a situated grasp of truth from specific time and space. This does not mean that differentiated visions or ‘discourses’ of truth are entirely exclusive from one another, but they exist in a disjointed manner.

Therefore those who are, quite literally, swept to the margins of society in terms of spatial-temporal locales, are less likely to have access to the same types of goods, services, or educational facilities as those who suffer from less consistent systematic oppression.<sup>145</sup> Further,

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<sup>141</sup> See chapter two.

<sup>142</sup> Foucault’s conception of discourse supersedes its normalized conception. For Foucault ‘discourse’ refers to, “ways of constituting knowledge, together with the social practices, forms of subjectivity and power relations which inhere in such knowledges and relations between them. Discourses are more than ways of thinking and producing meaning. They constitute the ‘nature’ of the body, unconscious and conscious mind and emotional life of the subjects they seek to govern.”

Chris Weedon, *Feminist practice and poststructuralist theory*, (London: Blackwell 1987), P.108.

<sup>143</sup> Michel Foucault, *Archaeology of Knowledge*, Alan Sheridan Ed, (London: Psychology Press 2002), P.138.

<sup>144</sup> Ibid.

<sup>145</sup> See more at: John Kimble, ‘Insuring Inequality: The Role of the Federal Housing Administration in the Urban Ghettoization of African Americans’, *Law & Social Inquiry*, Vol. 32, No. 2, (Spring, 2007).



differentiating groups – white and black, the ‘haves’ and the ‘have-nots’, etc – will have disconnected discourses as to what is ‘truth,’ or viable knowledge. Thus, the very fact that Facebook, amongst other third-party companies, has the power over individuals’ access to information is worrying. Not only is their personal data once again repurposed by overarching and interlocking systems of power, but it can also be used as a tool to direct misinformation in many directions. This ability to construct knowledge of and over particular identities can be construed as another form of oppression, which further compounds the effects of othered identities and reduces their ability to be self-defining on a broader scale. Thus, these issues can too be chalked up to concepts that stem from access, or in this case, lack of access to agency, episteme, and technology.

When we further examine the problem of algorithmically ascertained knowledge resources and content, whether each particular story can be claimed to be ‘fake news’<sup>146</sup> or not can be doubly damning for those who are constantly and consistently marginalized. This is due to the collective bias in which domestic, regional, or global narratives are situated and how they are further perceived and conceptualized by those in powerful positions, especially in the wake of the 2016 refugee crisis, and the ongoing issue of the rise of populism, anti-immigrant and xenophobic rhetoric. An excellent analysis of how racial hoaxes can be elucidated through fake news in the European context can be seen in the work of Andrea Cerase and Claudia Santoro. The popularity of certain articles within this type of ideological framework can easily be conceived as fitting into a sort of ‘click bait’ quota, so to speak, as a means of generating income for social media like Facebook or even other algorithmically trained online resources like Google or other search engines, through advertising.

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Carl Raffo, Alan Dyson, Helen Gunter, Dave Hall, Lisa Jones & Afroditi Kalambouka, ‘Education and poverty: mapping the terrain and making the links to educational policy’, *International Journal of Inclusive Education*, Vol. 13, Iss. 4, (2009).

David Ingold & Spencer Soper, ‘Amazon Doesn’t Consider the Race of Its Customers. Should it?’, *Bloomberg*, (21 April 2016), Available at: <https://www.bloomberg.com/graphics/2016-amazon-same-day/>, (Accessed on 20 June 2018).

<sup>146</sup>The term fake news in itself can encapsulate many different things; from misinformation, disinformation, hate speech, parody, etc. However, it must be stated that this term has “begun to be appropriated by politicians around the world to describe news organizations whose coverage they find disagreeable. In this way it’s becoming a mechanism by which the powerful can clamp down upon, restrict, undermine and circumvent free press.”

Claire Wardle & Hossein Derakhshan, (2017), P.5.

Some articles (in these cases proved to be ‘fake news’) that fall into this type of ‘social amplification’<sup>147</sup> that reinforce negative stereotypes of minority groups can be found in (politicized) Italian newspapers, bolstered by Italian politicians and amplified by the means of Facebook or Google to further entrench systematic and ideological racism. For example, an article from 2014 triggered a racially targeted hoax,<sup>148</sup> stemming from false accusations that West African immigrants had brought Ebola to the Italian island of Lampedusa.<sup>149</sup> Another fake story gained mass appeal in 2014 claiming that migrants were given 35 euros a day from the Italian government, which caused racially based, but economically voiced worries from various individuals.<sup>150</sup> Beyond the scope of migrant fueled fake news and biases, there are also established cases of fake news against Roma populations.<sup>151</sup> These examples are important, as not only do they pervade the psyche and ideological biases of some political elites<sup>152</sup> but they also in turn, can manifest into normalized collective perceptions, and sometimes result in tangible actions against minority groups on domestic levels. Thus, the manifestation of big data and algorithmic decision-making can also be seen as multifaceted, as it can be used to perpetuate political agendas, ideological footholds and surveillance mechanisms, particularly against those who are most vulnerable.

These issues are particularly interesting when we acknowledge their interplay with the forthcoming GDPR, that being, in what way can we protect data of these particular previously mentioned groups, Roma and those with various degrees of refugee/asylum seeker status? Would these communities, who time and time again are faced with varying amounts of access to human rights, be denied them again, once over, since their non-citizen status denies them of ‘the right to have rights’?<sup>153</sup> Since identity is contingent upon the definitions handed down from technocratic

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<sup>147</sup> “The Social Amplification of Risk Framework suggests looking at the communication process in the wider sense, expanding analysis to any message conveyed from any source, by any channel, with no restrictions on direction flow, amplitude, and related audience, also taking into consideration messages conveyed unintentionally.”

Andrea Cerase & Claudia Santoro, ‘From racial hoaxes to media hypes Fake news’ real consequences’, *Media Hype to Twitter Storm: News Explosions and their impact on Issues, Crises and Public Opinion*, Ed. Peter Vasterman, (Amsterdam: Amsterdam University Press 2018), P. 348.

<sup>148</sup> From: *Il Giornale*, 6 August 2014. Ibid. P.328.

<sup>149</sup> Lampedusa is an island in Southern Italy, which is one of the first stops for ships carrying migrants. Ibid.

<sup>150</sup> Ibid, P. 339-341.

<sup>151</sup> Ibid, P. 341-343.

<sup>152</sup> Particularly in this age where populism is on the rise.

<sup>153</sup> An allusion to Hannah Arendt’s idea found in, *The Origins of Totalitarianism*, on how human rights are codified by citizenship, and thus, these non-European citizens, who are living on European soil cannot be integrated into a system in which their rights are protected by the state in which they live, since they do not qualify as citizens. Hannah Arendt, *The Origins of Totalitarianism*, (New York: Harcourt, Brace & Co. 1951).

elites, and the panoptic structures surrounding individuals in our digital age are refugees and other stateless people marked as ‘other’ even more so than other marginalized groups, or are they rendered even more invisible?<sup>154</sup> This forthcoming legislation includes many explicit references in regards to movement of data, and information within the context of the European Union and universally, but none in reference to minority groups nor stateless people.

Ultimately, while it seems that although the GDPR can be considered a benevolent force to be reckoned with, there are many ways in which it could be lacking. Aside from the uncertain future of how it will be applied to various elite groups, such as governments, their institutions and the tech giants, coupled with how it remains mysteriously silent on minority issues, the upcoming years will be interesting. While there are explicit calls within the GDPR to make privacy policies more legible for the average individual,<sup>155</sup> the remedies to a breach of data protection are not as easily available. Arguably, the transformative power of big data and algorithmic activities are not always so blatant to the untrained eye.<sup>156</sup> Further, the first calls to action are considered to be the lodging of a complaint to the data protection authority,<sup>157</sup> which does not seem conducive to the framework of accessibility and legibility, as it would require some sort of familiarity with legal matters.<sup>158</sup> This type of methodology is ultimately an echo of

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<sup>154</sup> This point is explicated through the lens of trans-visibility in terms of identification documents in:

Christine Quinan, ‘Gender (in)securities: surveillance and transgender bodies in a post 9/11 era of neoliberalism’, *Security/Mobility: Politics of Movement*, Ed. Matthias Leese, Stef Wittendorp, (Manchester: Manchester University Press 2017), p. 160.

“But the state does not see ghosts, unless of course they are the undocumented immigrants, Muslims, people of colour, sex workers, differently abled individuals, or are otherwise deemed “undesirable” to the state. Then, they are no longer ghosts but are instead hyper visible...which bodies can choose visibility, and which bodies are always already visible – perhaps even hypervisible – to state institutions? For whom is visibility an available political strategy, and at what cost?”

<sup>155</sup> *EU General Data Protection Regulation (GDPR)*: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), Art.7, Art. 12.

<sup>156</sup> This concept is explored in greater depth in:

Jonathan A. Obar, ‘Big Data and The Phantom Public: Walter Lippmann and the fallacy of data privacy self-management’, *Big Data & Society*, (July-September 2015).

<sup>157</sup> *EU General Data Protection Regulation (GDPR)*: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), Art 47, Art.77.

However, in a previous recital, it does state that individuals have the right to ‘mandate a not-for-profit body, organization or association, which is constituted in accordance with the law of a Member State...to lodge a complaint on their behalf.’

Ibid, Recital 142.

<sup>158</sup> Which can also be attributed to Obar’s notion of the “mystical fallacy of data privacy.” Jonathan Obar, (2015), P. 1-16.

the cognitive dissonance of governmental institutions that were mentioned in reference to TRIPs Flexibilities,<sup>159</sup> as access to the resources necessary for such a clause cannot be understood as equitable amongst individuals, groups or nations. Additionally, the very essence of technological advancements within the formative years of this legislation, from 2009 to the present day, has changed drastically.<sup>160</sup> Therefore, the need for more reflexive and dynamic domestic policies, as well as grassroots movements are necessary to keep up with the ongoing progress of technology. That said, the following chapter will provide a change of pace, as the focus will shift to various organizations that work towards better online and algorithmic governance. Some of these can be perceived as adhering to similar core values of inclusion, or access to all, particularly minority groups, as well as stricter ethical and humanitarian considerations for the future of technology as we know it.

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<sup>159</sup> See Chapter One.

<sup>160</sup> “Disruptive technologies, such as big data [and by proxy algorithm], IoT, cloud computing, have become part of ordinary life, but do not find an adequate regulatory framework in Regulation (EU) 2016/679.” Alessandro Mantelero, ‘Regulating big data. The guidelines of the Council of Europe in the context of the European data protection framework’, *Computer Law & Security Review*, Vol. 33, Iss. 5, (2017), P. 602.

## CHAPTER FOUR

### 4.1 HUMAN RIGHTS BASED APPROACHES TO ALGORITHMIC ACCOUNTABILITY

Access to technological resources and the subsequent way that they interplay with human rights has long been on the agenda of international institutions in various manifestations. Generally, technological accessibility has been linked to the right to development – most notably in the Millennium Development Goals (MDGs).<sup>161</sup> The eighth MDG, ‘global partnership for development’ explicitly made calls to: ‘address the needs of least developed countries’ and ‘in cooperation with the private sector, make available benefits of new technologies, especially information and communications.’<sup>162</sup> With the incorporation of human rights based approaches (HRBA) through the PANEL<sup>163</sup> principles – we have seen a vested interest from UN institutions towards mainstreaming development principles into tangible practice,<sup>164</sup> beyond the scope of responsibility solely belonging to the state. Additionally, with the introduction of the Ruggie Principles, otherwise known as the UN Guiding Principles on Business and Human Rights,<sup>165</sup> another tangible link is made between implementing the normative need for non-state actors to adhere to human rights. However, it is important to note that since these types of methodological entities are not legally binding, they can only promote notions of responsibility towards the protection of human rights via *customary* international law, and still largely rest upon the importance of state compliance.

The examples used in this thesis thus far have pointed towards the lack of a holistic understanding on behalf of the ways technology can exacerbate discrimination. It has been illustrated that the links between international policy, and access to technology as a human rights

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<sup>161</sup> See: Millennium Development Goals and Beyond, Available at: <http://www.un.org/millenniumgoals/global.shtml/>, (Accessed on 21 June 2018).

<sup>162</sup> Ibid.

<sup>163</sup> PANEL stands for: Participation, accountability, non-discrimination and equality, empowerment and legality. See: Scottish Human Rights Commission, *Human Rights Based Approach*, Available at: <http://careaboutrights.scotishhumanrights.com/whatisahumanrightsbasedapproach.html>, (Accessed on 21 June 2018).

<sup>164</sup> See: HRBA Portal, *The Human Rights Based Approach to Development Cooperation: Towards a Common Understanding Among UN Agencies*, Available at: <https://hrbaportal.org/the-human-rights-based-approach-to-development-cooperation-towards-a-common-understanding-among-un-agencies>, (Accessed on 21 June 2019).

<sup>165</sup> UN Office of the High Commissioner, *Guiding Principles on Business and Human Rights: Implementing the United Nations’ “Protect, Respect and Remedy” Framework*, New York, (2011).

Available at: [https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR\\_EN.pdf](https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf), (Accessed on 21 June 2018).

issue have not been fleshed out in their entirety, particularly in reference to those that are new and cutting-edge. International instruments and legislations simply cannot keep up with the fast-paced environment, which will potentially encompass the future of humanity, or at least their data. Fortunately, there is an ever-growing interest in issues surrounding technology, access, inclusion and identity as of late, from a plethora of directions, and they have been markedly more present in the Sustainable Development Goals (SDGs),<sup>166</sup> than in their predecessor, the MDGs.

If we entertain the idea that “the future of human rights technology is not something to predict, it is something to invent,”<sup>167</sup> then we must also acknowledge the importance of decentralized legislation, beyond the scope of international institutions<sup>168</sup> and the GDPR. While the GDPR explicitly mentions the ‘right to access,’<sup>169</sup> it is merely referring to something that is too narrow and ultimately symptomatic – namely, that the *citizens* of the European Union should be able to access whatever individual data of theirs that has been filed away by institutions/corporations. However, the issue of implementation towards accountability and transparency still remains, particularly in regards to: what ends this data is used for, how it will affect the surrounding society and how this information is acutely conveyed to the average individual. Further, the scope of who is protected under the auspices of the GDPR is also too narrow, since it is contingent upon citizenship rights within the European Union – rendering refugees and migrants once again alienated, this time from their digital identities and data ownership. Ultimately, this calls for the dissemination and decentralization of power, which can

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<sup>166</sup> UNGA, *Transforming our world: the 2030 Agenda for Sustainable Development*, 25 September 2015, A/RES/70/1, Available at:

[http://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A\\_RES\\_70\\_1\\_E.pdf](http://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf), (Accessed on 21 June 2018).

<sup>167</sup> A quote that can be attributed to Enrique Piraces, the Vice President for Human Rights Programs at Benetech. Piraces sat on the Hunter College Human Rights Panel, which aimed to discuss the future of human rights technology in October of 2014.

See: Witness, *The Future of Human Rights Technology*, (November 2014), Available at: <https://witness.org/the-future-of-human-rights-technology/>, (Accessed on 21 June 2018).

<sup>168</sup> Though there is an interesting report on these specific issues from Council of Europe, which too calls for the incorporation of non-state actors and ‘additional institutional arrangements.’

See: Council of Europe, *Study on the Human Rights Dimensions of Automated Data Processing Techniques (In Particular Algorithms) and Possible Regulatory Implications*, (6 October 2017), Available at:

<https://rm.coe.int/study-hr-dimension-of-automated-data-processing-incl-algorithms/168075b94a>, (Accessed on 21 June 2018).

<sup>169</sup> EU General Data Protection Regulation (GDPR): Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), Art. 12.

be used on the domestic scale to promote *jus cogens*, or at least raise awareness of potential outcomes of modern technologies.

Since the focus of this thesis deals with the scope of algorithm and big data, it is important to hone in on the groundbreaking work being done towards these specific elements of the digital age. There is, in fact, a growing, vested interest in forthcoming ethical frameworks and accountability for applications of big data. Unfortunately, these types of concerns and organizations seem to most often come from a westernized perspective, which may once again fall into the epistemic and culturally imperialistic pitfalls established in the first chapter of this thesis. The work being done by the AI Now Institute, IEEE, Algorithm Watch, along with the recent brainchild of the international RightsCon recently held in Toronto – The Toronto Declaration<sup>170</sup> – shows that tangible steps are being made in the right direction through non-state actors incorporating HRBA and the PANEL principles. When it comes to ethical considerations within data mining, there are even fewer representative institutions focusing on this specific issue, and the majority of them also tend to prevail from countries belonging to the global north. Lastly, and perhaps most alarmingly, the treatment of these two technologically powered human rights issues is dealt with in a largely mutually exclusive manner. There needs to be more research administered, in the realms of both legal and academic works. This could lead to the recognition that these issues are symptomatic of one another, and something much larger; acting as a sort of feedback loop within the context of accessibility to technology, consumer products on the whole and human rights, particularly to those who are consistently and constantly categorized as ‘other.’

Nevertheless, the policies formulated through these non-governmental entities are pivotal towards creating a sustainable and ethical future. If we adhere to some of the key points in human rights rhetoric discussed in the body of this thesis, namely: non-discrimination, privacy, freedom of expression and inclusion/accessibility, we can see that there are many caveats in recently developed institutions and their latest declarations that focus specifically on these issues. As mentioned, most recently in the Toronto Declaration there are specific calls to: safeguarding equality and human rights, ethical frameworks for machine learning, promotion of development/use of new technologies that allow individuals to exercise and enjoy their human

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<sup>170</sup> Which is subtitled as and calls for, “protecting the rights to equality and non-discrimination in machine learning systems.”

rights more broadly, and more often.<sup>171</sup> The 2018 edition of the annual Algorithmic Impact Assessment from the AI Now Institute echoes similar notions, calling for accountability as well as respect for human rights on the level of business and production of algorithms.<sup>172</sup> It explicitly calls for more transparency and accountability via the opening of the ‘black box’ in which algorithms are predominantly held, as well as an opportunity for auditors and researchers to have a meaningful chance to review systems that have the potential to affect humanity in a manifold of ways that we cannot always predict.<sup>173</sup> The prominence of the AI Now Institute on the domestic, as well as global stage, can arguably be one of the reasons why New York City was the forerunner in enacting a policy that specifically deals with “automated decision systems used by agencies”<sup>174</sup> in January 2018.

Generally speaking the aforementioned institutions are already working within a human rights-based approach to eschew more sustainable and ethical guidelines for forthcoming algorithmic applications. However, these same institutions cannot do it all. There needs to be a meaningful implementation of these core values from other interlocutors, like academic institutions, governments and their auxiliary institutions as well as a piqued interest from the general public on local, domestic, regional and international levels. Much like other issues that straddle the barriers between ESC and CP rights, these goals are difficult to ascertain. Algorithmic accountability issues ought to be conceived through a broader lens. Of course, algorithmic systems are emblematic and reflect systemic racism and bias – but this is due to the grander narrative of exclusion of minority groups from many angles, including ability and access which are enshrined in imperialistic, colonial and paternalistic histories. Steps must be made in earnest towards replenishing colonized empires, and de-colonizing the digital world; instead of maintaining the post-colonial status quo of grossly inadequate distribution of wealth and

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<sup>171</sup> Access Now, *The Toronto Declaration: Protecting the rights to equality and non-discrimination in machine learning systems*, (May 2018), Available at: <https://www.accessnow.org/cms/assets/uploads/2018/05/Toronto-Declaration-D0V2.pdf>, (Accessed on 21 June 2018), Preamble.

<sup>172</sup> Dillon Reisman, Jason Schultz, Kate Crawford & Meredith Whittaker, *Algorithmic Impact Assessment: A practical framework for public agency and accountability*, AI Now Institute, (April 2018), Available at: <https://ainowinstitute.org/aiareport2018.pdf>, (Accessed on 21 June 2018).

<sup>173</sup> Ibid.

<sup>174</sup> New York City Council, *A Local Law in relation to automated decision systems used by agencies*, 11 January 2018, Int. 1969: 2018/049, Available at: <http://legistar.council.nyc.gov/LegislationDetail.aspx?ID=3137815&GUID=437A6A6D-62E1-47E2-9C42-461253F9C6D0>, (Accessed on 21 June 2018).



ownership. This type of radical redistribution can be applied to most, if not all resources like oil and precious metals to data and knowledge claims.

## 4.2 INTEGRATING INTERSECTIONALITY

Going back to the problem of Mark Zuckerberg's Free Basics, we can see how *not to* impose digital-imperialism/colonialism upon the developing world. Yet the the problem of strengthening connectivity amongst those in the global south is a double-edged sword. According to Renata Avila, a senior advisor of the World Wide Web Foundation, a Human Rights lawyer and digital rights expert who comes from Guatemala, this is an increasingly important ethical dilemma. She argues that:

“If we, the connected and privileged, campaign against companies offering free connectivity, that means people could be disconnected from the global sphere... [but] is the internet empowering if you cannot create, innovate or collaborate without maximizing the wealth of someone else? A truncated version of the internet for the poor is an information diet low in calories, one of mere subsistence and not of human development and economic growth.”<sup>175</sup>

If we allocate this argument to the application of algorithms and the sourcing of big data, we can see that a disconnect remains between those who have the power to utilize these technological tools and those who do not. If we are striving towards connectivity, we also must acknowledge that the artifacts of colonialism and oppression remain strewn across the virtual world in similar ways to that which they manifest in reality. To compartmentalize the intersecting forms of oppression and violations of human rights into entirely segregated categories cannot accurately reflect or remedy a situation that does not exist in a vacuum.

Given the background that we have established and the pitfalls in the very concept of neutrality and bias, which seems to be central in the dialogue for algorithm and applications of big data, the locus needs to be radically shifted. Perhaps the narrative should be reimagined into one of embracing bias and differences, or the notion of ‘strong objectivity’<sup>176</sup> – in which

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<sup>175</sup> Moz://a, ‘Resisting Digital Colonialism’, *Internet Health Report 2018*, Available at: <https://internethealthreport.org/2018/resisting-digital-colonialism/>, (Accessed on 21 June 2018).

<sup>176</sup> Sandra Harding, (1992).

researcher bias and scientific bias is explicitly taken into account. Arguably, by including more voices into the digital world, and integrating a more active participation by incorporating as many individuals as possible, would be the most realistic means of understanding the larger picture. This is not something that can be solved by waiting for technology to correct it like some sort of magical solution to the problem that has pervaded humanity for centuries lies within the use of algorithms, that can be used as a tool to side-step engrained human biases. Rather, we must simultaneously hold ourselves accountable for the moral ambiguities that big data and algorithms concluded with, from the flawed and subjective information we fed into them in the first place. To reach such a lofty goal in terms of algorithmic accountability and ethical data extraction, we must also address the causal root of the issue and try to find tangible solutions to the digital divide in both the domestic and global stages. We should be focusing on how we can use, allocate and provide access to technology in a meaningful way, which could lead to a brighter future for those on the ground. Perhaps portions of the large fines that will be sourced from unethical data transactions rendered by the GDPR, and other, potential, laws that will follow suit, can be used towards these ends.

While the adoption of human rights-based approaches to policies regarding technology, big data and algorithm are steps in the right direction, the integration of standpoint theory<sup>177</sup> along with intersectional concepts could lead to a more inclusive and holistic understanding of the effects of new technologies on the global stage. The inclusion of theoretical standpoint perspectives could amplify the voices and the knowledges of the subaltern (those who are less privileged) in regards to what resources are necessary or integral to epistemic and technological progress for their communities. The main idea of traditional standpoint theory is encircled within the position that an individual's perspectives and knowledge claims are hinged upon their own experiences and cannot be construed as infallible or universal. Rather, this theory posits that what constitutes knowledge and how it gains credibility to an individual, is dependent on the way in which they relate to society, from socio-economic to gendered perspectives. In terms of epistemic, cultural and historical narratives, the acknowledgement of how one is situated within

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<sup>177</sup> The origin of this theory can be attributed to Nancy Hartsock.

See: Nancy C.M. Hartsock, 'The Feminist Standpoint: Developing the Ground for a Specifically Feminist Historical Materialism', *Discovering Reality: Feminist Perspectives on Epistemology, Metaphysics, Methodology and Philosophy of Science*, Ed. Sandra Harding, Merrill B. Hintikka, (Dordrecht: Springer 1983), P. 283-310.

the world, and how this situatedness is consistently in flux, could give way to a more realistic vision of how others' decisions on a variety of scales affects oneself and those around them.

Further, the incorporation of intersectionality is part of a framework that exercises inter-subjectivity or 'strong objectivity.' This means that in order to create sustainable technology, we must also take multi-faceted and interlocking systems of hegemony and oppression into consideration. It is only through the incorporation of the 'outsider-within'<sup>178</sup> episteme/knowledges that we can see how big data extraction, algorithms and technology on the whole can affect the fabric of society and those who are most vulnerable.<sup>179</sup> Thus, while there is beginning to be an interest in ethical perspectives in computer science, engineering and academia beyond the scope of philosophy, the promotion of more radical conceptions of inclusion and interconnectedness within the creation and organization of episteme, science and technological advancements, ought to be considered as well. That said, "digitalization is, quite literally, a divisive, even polarizing epistemological strategy...It creates knowledge niches for niche markets and customizes data in ways that can be useful to individuals but little for common ground."<sup>180</sup> Therefore, perhaps the best solution – regardless of whether it is within the realm of awareness building or harnessing/reimagining digital ownership and identity – is through alternative routes.

#### 4.3 'OPTING IN' TO ARTS & CULTURE

Aside from strictly legal frameworks, the ways in which we formulate our perceptions of progress, development, and modernity need to be recalibrated. Vandana Shiva argues that the modern conception of 'development' is one that is, in itself, highly problematic. She posits that perhaps this neo-liberal concept could be better understood as one of 'maldevelopment.' This means that westernized visions of the development are not only "deprived of the feminine, the

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<sup>178</sup> See: Patricia Hill Collins, 'Learning from the Outsider-Within: The Sociological Significance of Black Feminist Thought', *Social Problems*, Vol. 33, No. 6, (Oct. – Dec. 1986), P. S12-S32.

<sup>179</sup> Virginia Eubanks' most recent book, *Automating Inequality: How High-Tech Tools Profile, Police and Punish the Poor*, provides a great analysis of how algorithms within social welfare systems in the United States work against the very tenets of social welfare and disproportionately affect and in some ways exacerbate the oppressions of those who are marginalized by many intersecting forces.

See: Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police and Punish the Poor*, (New York: St. Martin's Press, 2018).

<sup>180</sup> Benjamin Barber, 'Which Technology and Which Democracy?', Talk given at Democracy and Digital Media Conference, MIT, (1998), Available at: <http://web.mit.edu/m-i-t/articles/barber.html>, (Accessed on 21 June 2018).

conserving, the ecological principle...which sees all work that does not produce profits and capital as non-work or unproductive work”<sup>181</sup> but also is, “rooted in identifying a narrow Western patriarchal bourgeois interest as universal, a partial to the whole.”<sup>182</sup> This type of hierarchical transplanting is undeniably oppressive and only further entrenches binaries and divides between the ‘haves’ and the ‘have-nots,’ the ‘developed’ and the ‘undeveloped’ and is counter-intuitive to a sincere attempt at creating a more equitable or egalitarian world.

In terms of reconciling humanity with technology in a meaningful way, we first must acknowledge that technology is not, and cannot be, construed as neutral. Technological progress is a byproduct of politicized and divergent agendas. By merely transposing western technological and educational resources, local knowledges and needs are largely ignored or manifested incorrectly. In the same way, using the application of algorithms to produce an environment that is sterile to bias, or the use of some idealized notion of ‘scrubbing to neutral,’ is ineffective at best. At worst, the very notion of ‘eliminating bias’ can too be consolidated into a framework of cultural imperialism as it invalidates lived experiences of those who fall into divergent categories of ‘other.’ Additionally, similar to the notion of ‘criminality,’<sup>183</sup> the concept ‘neutrality’ is contingent upon who is defining it, and to what ends. Ultimately, defining and compartmentalizing in this way leads to an exacerbation of the panoptic, digital gaze that further entrenches those who are already placed upon the margins of society.

The late Ursula LeGuin once stated that, “technology is how society copes with physical reality.” While this may be true to a certain extent, her conception can also be understood as one that was derived from a privileged perspective. As we have learned, those in positions of power dictate the physical realities of some individuals, as well as their access to technology. Perhaps it would be more appropriate in this situation to argue that through arts and culture we can ascertain how society copes with physical realities, though, this too may fall victim to a similar ontological debate. Regardless, there are many new interesting projects in the forms of outsider arts, cultural activities and practices that can act as tools of epistemological resistance against the hegemonic Eurocentric, colonial and privileged perspectives. Examples include the artistic works

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<sup>181</sup> Shiva, Vandana, ‘Development as a New Project of Western Patriarchy’, *Reweaving the World: the Emergence of Ecofeminism*. Irene Diamond and Gloria F. Orenstein (eds), (San Francisco: Sierra Club Books, 1990), p.191-192.

<sup>182</sup> Ibid. P. 193.

<sup>183</sup> See: section 2.2

of Hyphen-Labs,<sup>184</sup> Morehshin Allahyari,<sup>185</sup> Andrew Kuo,<sup>186</sup> Sondra Perry,<sup>187</sup> Hito Steyerl,<sup>188</sup> and Louis Henderson.<sup>189</sup> These artists all use modern technologies, in some way or another, to demystify the causal links between identity (particularly those of marginalized groups), and ownership in the digital age. Aside from these, there are many up-and-coming initiatives to underscore the epistemological and technological divide between the elite and the marginalized, such as the New Inquiry’s “White Collar Crime Risk Zones” – a cheeky look at the biased algorithm used by predictive policing mechanisms and how criminality is defined.<sup>190</sup> Other initiatives that work towards creating a more equitable playing field include: algorithms that are used to find and correct biases in other algorithms on a variety of planes,<sup>191</sup> the promotion of the “Feminist Principles of the Internet,”<sup>192</sup> or, The ‘Girl Develop It’ organization.<sup>193</sup>

These types of ventures are important, as they have the ability to act at a faster pace than the gears of bureaucracy, on any scale, be it international, regional or domestic. Integration of

<sup>184</sup> A collaborative, international team of female artists.

See: Priscilla Frank, ‘Afrofuturist Artist Craft A Virtual World For Women Of Colour’, *Huffington Post*, (18 January 2017), Available at: [https://www.huffingtonpost.com/entry/virtual-reality-afrofeminism-art\\_us\\_587d0c39e4b09281d0ebe514?guccounter=1](https://www.huffingtonpost.com/entry/virtual-reality-afrofeminism-art_us_587d0c39e4b09281d0ebe514?guccounter=1), (Accessed on 21 June 2018).

<sup>185</sup> See: Lizzie Plaugic, ‘Morehshin Allahyari’s 3D-Printed Project Pushes Back Against “Digital Colonialism”’, *The Verge*, (March 24, 2018), Available at: <https://www.theverge.com/2018/3/24/17147826/morehshin-allahyari-she-who-sees-the-unknown-3d-printing-sculpture>, (Accessed on 21 June 2018).

<sup>186</sup> Anna Luisa Vallifuoco, ‘[Interview with] Andrew Kuo’, *Creative New York: MoMA*, (11 May 2016), Available at: <https://nyc.moma.org/andrew-kuo-873221af0700>, (Accessed on 21 June 2018).

<sup>187</sup> Nora N. Khan, ‘No Safe Mode: Sondra Perry’s Graft and Ash for a Three Monitor Workstation’, *Flash Art Magazine*, Vol. 316, Iss. September – October, (2017), Available at: <https://www.flashartonline.com/article/sondra-perry/>, (Accessed on 21 June 2018).

<sup>188</sup> Marvin Jordan, ‘Hito Steyerl: Politics of Post-Representation Conversation’, *Dis Magazine*, Available at: <http://dismagazine.com/disillusioned-2/62143/hito-steyerl-politics-of-post-representation/>, (Accessed on 21 June 2018).

<sup>189</sup> See: *Lettres du Voyant*, (2013).

“A documentary-fiction about spiritism and technology in contemporary Ghana that attempts to uncover some truths about a mysterious practice called “Sakawa” – internet scams mixed with voodoo magic. Tracing back the scammers’ stories to the times of Ghanaian independence, the film proposes Sakawa as a form of anti-neocolonial resistance...A character recounts a story through reading a series of letters that he has written to the film’s author – letters that speak about the colonial history of Ghana, of gold, of technology.”

Louis Henderson, *Lettres du Voyant*, (England: LUX, 2013), Available at: <https://lux.org.uk/work/lettres-du-voyant>, (Accessed on 21 June 2018).

<sup>190</sup> Sam Lavigne, Francis Tseng & Brian Clifton, ‘White Collar Crime Risk Zones’, *New Inquiry Magazine*, Vol. 59, (April 2017), Available at: <https://whitecollar.thenewinquiry.com/>, (Accessed on 21 June 2018).

<sup>191</sup> For example: Knowhere news, which uses both human and machine intelligence to uncover impartial news coverage (knowherenews.com); and O’Neil Risk Consulting & Algorithmic Auditing (ORCAA), a company that runs 3<sup>rd</sup> party audits of algorithmic systems headed by the author of ‘Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy, Cathy O’Neil (<http://www.oneilrisk.com/>).

<sup>192</sup> Association for Progressive Communications (APC), ‘Feminist Principles of the Internet’, Vol. 2, *APC WRP*, (2016). Available at: <https://www.apc.org/en/pubs/feminist-principles-internet-version-20>, (Accessed on 21 June 2018).

<sup>193</sup> A not-for-profit organization, which promotes opportunities for women to learn web and software design. See: <https://www.girldevelopit.com/>

technology, particularly algorithm and big data within the scope of media arts promotes the notion of just how integral these issues are becoming in our day to day lives. Through artistic expressions we can see just how small and personal the mythological, hydra-like conception of big data can actually be. Big data is made up of individuals; in some cases it is used as a means of understanding individual motivations, and in others it can be conceived and utilized towards changing cultural capital. It is through this type of individualization that we can harness the power of marginalized groups and representation of needs of those who are ‘othered.’ But this is besides the point, as minority groups should be harnessing their own powers towards their own ends. Some argue that, “inclusion happens when people in power use that power to bring people in rather than keep people out,”<sup>194</sup> – and while this may be an integral step, it still ignores the basic tenet of empowerment, which is that empowerment comes from autonomy and acknowledgement of local needs and knowledges without the implied requirement of outsider authorization. Therefore, it seems as if the best route to meaningful inclusion is from the bottom up.

Though all of these aforementioned initiatives and artists<sup>195</sup> have roots in the Western world, they may provide a light at the end of the tunnel. It is easy to argue that these are just another means to reproducing western, hegemonic knowledge and imperialist claims; however, it is through the dissemination of arts, and the exploration of identity under such conditions that provides a foothold into a more engaged and sympathetic audience. While ‘globalization’ is most often used as a dirty word, in terms of ESC rights, perhaps works and projects such as these can gain momentum through it, on the international scale. Whatever its merits, it is of implicit importance to integrate, and recentralize the needs, knowledges and desires of those whose voices have so often been drowned out.

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<sup>194</sup> Leah Fessler, ‘Finally, a definition of workplace inclusion that’s truly actionable’, *Quartz at Work Magazine*, (25 April 2018), Available at: <https://work.qz.com/1260780/finally-a-definition-of-workplace-inclusion-thats-truly-actionable/>, (Accessed on 21 June 2018).

<sup>195</sup> Though each of these artists mentioned are people of colour, and/or have ethnic/cultural ties to places that fall into the category of Global South.

## CONCLUSION & REMARKS

In summary, algorithmic biases are hinged upon preconceived norms of technological progress, which are embedded in Western/Eurocentric ‘modernity.’ Algorithms role in discriminatory practices are a reimagined blaming point for the normalized power/knowledge dynamics rooted in colonialist narratives. As we have seen through the examples used in this thesis, technological means are often used by whoever may be in power to justify their own political, ideological or economic means. Whether it is via the disproportionate incarceration of vulnerable people in the United States, the stratification of xenophobic ideological new sources to enforce political agendas, or even through visual cues, algorithms are not utilized towards the ends that they are commonly described. We need to take a more earnest interest into finding solutions to the main issues established in this text: the digital divide, the digital gaze, and how these overarching issues are exacerbated by ‘surveillance capitalism’ and engrained/politically utilized discrimination. The issue of algorithmic bias is pervasive, and at points innocuous, but it is for these same reasons that the common narrative of ‘technological progress’ as being objectively and impartially afforded can be construed as all the more dangerous.

This analysis of technological access as a human rights issue, via the exploration of algorithmic integrity and big data proves that these issues are multifaceted and cannot be resolved without a meaningful incorporation of multi-perspectival and inclusive dialogue. By and large, the problems that we have discussed throughout the body of this text can be understood as being rooted within the realm of three interrelated epistemic and ethical obstacles, which are intrinsically interwoven within the discourse of technological modernity, and then only strengthened by the deeply embedded colonial frameworks within the neo-liberal and globalized world. The first is a largely pedagogical/educational issue; the second resides within the flawed conception of what constitutes knowledge, or objective truths, and the last being the lack of acknowledgement of, or formulation and support towards tangible solutions to these problems. Variations of these issues can be found in all problems surrounding algorithms, technology and knowledge claims – ranging from legislation to data ownership.

From the pedagogical perspective, we can see how Western educational systems entrench stark inequalities in terms of colonial manifestations through a sort of ‘cultural invasion’ by “penetrating the cultural context of another group, in disrespect of the latter’s potentialities; they

impose their own view of the world upon those they invade and inhibit the creativity of the invaded by curbing their expression.”<sup>196</sup> If we are consistently force-feeding those from the ‘developing world’ a version of truth that is contingent upon values and hierarchal knowledges that are entirely different from their own how can they be expected to solve the issues that actually plague their day-to-day lives? These types of educational and pedagogical issues can be understood as a hazard even on domestic scales, in which the lived experiences of minority groups are not celebrated nor understood to the same extent as those of the majority. Even beyond basic schooling, these types of one-dimensional and falsely universalized notions are perpetuated in academia and technical programs. Thus, even if the subaltern is given the chance to speak, is anyone listening or acknowledging their claims as valid in the system that was built against them surely not intentionally, but rather to promote the agenda of colonizers and others?

The formulation of knowledge is also bound by these very same hierarchal characteristics. The interplay of knowledge and power is evident when it comes to the total disregard for local or ‘subjugated knowledges.’<sup>197</sup> Knowledge is ascribed to, by, and for those in power and most often it is best suited towards the unmarked, white, and Western male as the normative agent. This very assertion that Western conceptions of knowledge are inherently more valid than those of ‘the other,’ whomever they may be, demonstrates that knowledge claims, particularly those that come from ‘no-where’ cannot be constituted as universal. Rather, knowledge ought to be understood as something that is situated within lived experience.<sup>198</sup> Lastly, these attitudes have become so normalized and comfortable for those whom they benefit that there has been little meaningful engagement or commitment in self-reflection to make a tangible change. This has become particularly evident through the almost willful ignorance that has been eschewed in the globalized economy and has been proven to exacerbate inequality through economic and epistemic means.<sup>199</sup>

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<sup>196</sup> Paulo Freire, *Pedagogy of the Oppressed*, (New York: Continuum, 2005), P. 152.

<sup>197</sup> See: Michel Foucault, *Society Must Be Defended: Lectures at the College de France, 1975-76*, (New York: St. Martin's Press, 2003), P. 7.

Subjugated knowledge, to Foucault, can refer to two different things -- the first being the historical reference points on which knowledge was built, and secondly those knowledges that have been deemed ‘naïve,’ or inferior.

<sup>198</sup> This type of methodology can be found in moral epistemology.

See: Margaret Walker, *Moral Understandings: A Feminist Study in Ethics, Second Edition*, (Oxford: Oxford University Press, 2007).

<sup>199</sup> See: Vanadana Shiva, *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology*, (New York: Palgrave Macmillan, 1993).



All of these instances of cognitive dissonance are of implicit importance when discussing the role of technology within the frameworks of development and human rights. Technological progress can be seen as part of the common narrative of ‘superior knowledges.’ The very fact that those who are already marginalized are portrayed as incapable or unwilling to contribute to such ventures is telling. This type of thinking also applies to the means by which we use, create and impose technologies upon the ‘other’ – such as the introduction of Free Basics and the importance of the Internet to the Western world’s formulation of knowledge. Therefore, it is of crucial import to not only acknowledge the gaps within typical, Western scientific discourse – but also find tangible means by which to sincerely integrate ‘other’ knowledges.<sup>200</sup> This decided ignorance towards such knowledges can manifest in alarming ways in the modern, technological era, which, as we have seen in the algorithmic outcomes discussed, can lead to the vehement exacerbation of many conflating ‘isms’ on systematic and structural. Algorithms fall neatly into this paradigm, as they can act as a sort of ‘straw man,’ which takes the brunt of the blame as automatons of inequality.<sup>201</sup>

While the GDPR is still in its incubatory phase, it is a marked step in the right direction. It provides the most thorough and encompassing legislation on a supranational level towards data protection. However, the instruments of international law need the supports of domestic frameworks and legislations. States need to put a more vested interest towards protection and supports for lay people in the increasingly virtual age, particularly in the direction of those who are most vulnerable to the digital gaze. Furthermore, we need to call for a stricter enforcement of the Ruggie Principles upon those huge tech conglomerates while simultaneously working towards providing underrepresented individuals, groups and states with equitable resources to ‘compete’ in the globalized economy. Additionally, the incorporation of ‘the other’ is not only required in terms of the global stage, but must also be considered within the confines of the Western world.

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<sup>200</sup> Another interesting distinction that could be helpful towards building a more equitable future for education/knowledge can be found in the argument for creating a framework for ‘critical pedagogy’ over the already introduced ‘critical thinking.’ As it is argued that while critical thinking can bring forth the ability to recognize irrational arguments and ideas, it does not imply the ability to find tangible solutions to such problems, particularly when they are systemic. Rather, by introducing critical pedagogy, individuals are provided with more ample skills to work towards viable solutions.

See: Nicholas C. Burbules & Rupert Berk, ‘Critical Thinking and Critical Pedagogy: Relations, Difference, and Limits’, *Critical Theories in Education*, Thomas S. Popkewitz and Lynn Fendler, eds. (New York: Routledge, 1999), Available at: <http://faculty.education.illinois.edu/burbules/papers/critical.html>, (Accessed on 21 June 2018).

<sup>201</sup> See: Virginia Eubanks, (2018).

Even though the incorporation of HRBA principles may be helpful to some extent, the discourse surrounding ‘human rights’ is inherently politicized. Therefore, framing the issue of access to technology through the lens of human rights may not necessarily be helpful when trying to apply technological access to those who are swept to the margins. This is because the human rights framework can be understood as mirroring the ‘matrix of domination,’<sup>202</sup> as it can be portrayed as being entrenched within western imperialist modes that were discussed in the first chapter. While there are many ways in which algorithms, big data and technological advancements on the whole interact with fundamental human rights issues like privacy and freedom of expression, in terms of minority groups both of these types of issues can be exacerbated by and contingent upon the discriminatory frameworks that pervade the world as we know it. Perhaps, the incorporation of a neo-Aristotelian model based upon virtue theory may lead the way for a more reflexive and collaborative effort towards the desired ends without such a politicized means.

Since these topics are relatively new in most realms of academia, the need for more research in such fields is crucial. Some interesting topics could be within the realm of: how algorithms affect impoverished people within the confines of Europe (similar to the recent work of Eubanks); a more thorough investigation of how the GDPR affects the masses once it has been in effect for a slightly longer duration; how the GDPR affects those who are not European citizens; or even an archaeological/genealogical approach to data mining and its effects on the Global South and/or migrants. The possibilities for new and engaging texts on topics surrounding the intersections of human rights and technology are almost limitless.

Ultimately, algorithms can be seen as an outstanding example of how the states of modern technological advancements are stricken by western disregard. Rather than trying to build systems whose end goals are often explained as ‘unbiased’ the solution should be shifted. ‘Neutrality’ is not the answer. Rather, systems should be created to both *acknowledge and combat inequalities*, as these systems affect us all, though they do not affect us all equally.<sup>203</sup> AI and the Internet are unfortunately being used in ways that perpetuate the status quo – and it is up to the future generations to find empathetic, holistic and alternative routes to remedy the

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<sup>202</sup> The social constructs of domination that can be understood as an encapsulation of intersecting oppressions of race, class, gender, etc.

See: Patricia Hill Collins, *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*, (Boston: Unwin Hyman 1990), P. 221-238.

<sup>203</sup> See: Virginia Eubanks, (2018).

situation. However, if this type of benevolence, or ‘effective altruism’ is not to be enough to spark a vested interest in how such issues affect humankind, perhaps we should be reflecting upon the harrowing quotation from Eubanks’ most recent work, which states that, “you all, should pay attention to what’s happening to us, cause they’re coming for you next... [as] a lot of the most innovative and cutting-edge technologies in the United States are *first tested* on poor and working class people.”<sup>204</sup> This type of grievance ought to be considered on the international scale, too. While it is typical to conceptualize ‘progress’ or ‘development’ within the schema of technological advancements, we must be wary of the ever-growing gap between those who have, and those who have not. Technological growth is beneficial, but it cannot be considered as a be-all-end-all solution if there is no tangible effort made towards meaningful access, intersectional episteme and ethical solutions to the exploitation and discrimination it can invariably exacerbate.

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<sup>204</sup> Virginia Eubanks, ‘The Open Mind: Automating Inequality – Virginia Eubanks’, *Youtube video*, 3:20, (21 January 2018), Available at: <https://www.youtube.com/watch?v=Avxm7JYjk8M>, (Accessed on 21 June 2018).

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